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The Human Right to Water, Climate Change and Justice: Analysing multiple interactions through  
a case study of India

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# **The Human Right to Water, Climate Change and Justice: Analysing multiple interactions through a case study of India**

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## **Abstract**

Climate change poses new and complex questions related to water and how it is accessed, distributed and conserved. In India, where water conflicts and water stress have already been prevalent, face critical issues in this context. Access to water for basic needs is still a major issue for a significant part of the population. In this context, the realisation of the human right to water is significant.

This thesis analyses the human right to water from a climate and water justice perspective. The justice framework developed in this thesis draws upon political ecology and human geography, to examine questions of ‘how’ injustices occur. Political ecologists have highlighted to how climate and water injustices are ‘produced’ through both social and ecological processes interacting. Thus, the realisation of human right to water is viewed based on the interaction of these processes.

The thesis unpacks the ‘production’ of water and climate (in)justice, through these processes, and specifically examines the role of law and the realisation of the right to water. Case studies are carried out in two different states of India - West Bengal and Rajasthan - in areas experiencing sea level rise, floods and droughts. The case studies analyse the role of law and policy, interacting with governance processes, the role of the state, urbanisation, neoliberalism, hydropower, as well as discourses and ideas around water, land and climate. Law and policy play an integral role here, differentially allocating power, creating hierarchies, priorities and mediating relationships. Ultimately, it is demonstrated that the (unequal) realisation of the right to water access to water is mediated through contestations driven by these processes.

Drawing on the empirical case studies, the thesis critiques the current framing of the human right to water. To a large extent, the delivery of the human right to water has been through a narrow focus on delivering access to drinking and domestic water (a consumption or entitlement approach). Such an interpretation is broadly consistent with the international policy level, where the right is seen as an individual right of access to a particular quantity of water for consumption. However, it is demonstrated that such a narrow framing does not adequately tackle the daily struggles for water that are experienced from a water and climate justice perspective.

Accordingly, the thesis argues that the human right to water needs to be a tool to reformulate the way water is shared, distributed and conserved across different scales. It needs to change from a consumption or entitlement right to a right to ‘transform’ the ‘hydro-social’ conditions and processes which mediate how water is accessed. In order to do this, the right needs to recognise multiple uses of water, to transform into broader right to reclaim the commons, and to incorporate more radical forms of participation.

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# List of Abbreviations and Bengali and Hindi Terms

ADB	Asia Development Bank
<i>Anicut</i>	A dam built in a stream to regulate water
BPL	Below Poverty Line
CBDR	Common But Differentiated Responsibility
CECEODECON	The Centre for Community Economics and Development Consultants Society
CEDAW	Convention on the Elimination of Discrimination Against Women
CGWA	Central Groundwater Authority
<i>Char</i>	sandbar islands (known locally as the <i>Char</i> lands) shaped from river sediment
CRC	Convention on the Rights of a Child
CRZ	Coastal Regulation Zone
CVCA	Critically Vulnerable Coastal Zone
<i>Dalit</i>	Term describing people formerly called ‘untouchables’ or ‘outcastes’
CZMP	Coastal Zone Management Plan
DDMP	District Disaster Management Plan
DPSP	Directive Principles of State Policy
DVC	Damodar Valley Corporation
EIA	Environment Impact Assessment

HRW	Human Right to Water
ICZM	Integrated Coastal Zone Management
JMP	Joint Monitoring Programme
LPCD	Litre per capita per day
MJSA	<i>Mukhyamantri Jal Swavlamban Abhiyan</i>
MOEFCC	Ministry of Environment Forest & Climate Change
NAPCC	National Action Plan on Climate Change
NDC	Nationally Determined Contributions
NRDWP	National Rural Drinking Water Programme
NWM	National Water Mission
<i>panchayat</i>	Institution of self-government under Part IX of the Constitution
PHED	Public Health and Engineering
PIL	Public Interest Litigation
PPP	Public Private Partnership
SANDRP	South Asia Network on Dams Rivers and People
SAPCC	State Action Plan on Climate Change
SDG	Sustainable Development Goal
UN	United Nations
UNESCO	United Nations Educations Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
WHO	World Health Organisation
WMO	Water Management Organisation

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——, ‘Report of the Special Rapporteur on the Issue of Human Rights Obligation Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment’ (2016) A/HRC/31/52

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## **PART I: FRAMING THE RESEARCH**

# **CHAPTER 1.**

## **Introduction**

This thesis aims to analyse the human right to water in the context of climate change. It does this through a ‘justice’ lens, that draws out the different processes that are intertwined in creating water and climate stress, illustrating the uneven and unequal realisation of the right to water. The thesis specifically examines India as a case study, analysing how law and policy operate in the realisation of the right to water. To this end, the thesis unpacks how the legal framework around water and climate change operates in the differentiated realisation of the right to water. Accordingly, this research opens ‘space’ for re-imaging and reconfiguring the human right to water.

This introductory chapter has four sections. The first two sections provide a background to the issues, including law and policy debates. Section one provides a background to the water and climate crisis in India to set the scene of this research. Section two provides a brief background of how both international and domestic law (in India) has examined the question of the human right to water and climate change. It argues that these approaches have been overly narrow, particularly in the context of climate change. Section two then contextualises recent scholarship around human rights and climate change that tries to breach the narrow legal and policy framing of both the human right to water and human rights and climate change.

Building on the background and context, section three lays out the research questions and the methodology used in this thesis. A socio-legal methodology is adopted in carrying out the research for this thesis, specifically drawing upon law and

political ecology. Accordingly, the methods section provides a background to socio-legal methodology and explains the reasons for using this approach. Finally, this chapter ends with an outline of the thesis that consists of eight chapters, including the introduction and conclusion.

## **1.1 Contextualising the Issues**

Water is the stuff of life. It has an integral part in nearly every aspect of life, from our basic uses (drinking, bathing, and sanitation) to growing food, industrial processes, and generating energy. It is also integral to the lives of non-human animals and the health of socio-ecological systems. Concerns about climate change have brought water concerns to the forefront of global consciousness in recent years. Climate change manifests itself primarily through water and changes in the water cycle. These changes project further droughts, floods, melting glaciers, sea-level rise and severe storms.

The relationship between climate change and water materialise through several socio-ecological processes. Laws, policies, regulations, as well as political, social, and economic processes, play a significant role in how water and climate interact. This point will be expanded on in-depth later and be an underlying theme of this thesis. This section contextualises these issues primarily through examining the climate crisis in India, the case study of this thesis. Concerns about water and climate permeate the socio-political fabric of India today, producing multiple contestations, conflicts and crisis. Water pollution, groundwater shortages, drying up rivers, floods, cyclones, and changing rain patterns have created extreme pressures for millions of people. At the same time, the link to climate change also re-enforces the global nature of this crisis.

### 1.1.1 “A Million Revolts in the Making”<sup>1</sup>: Water and Climate Crisis in India

In 2018, a report by NITI Aayog, a policy think-tank of the Government of India, states that:

“India is suffering from the worst water crisis in its history, and millions of lives and livelihoods are under threat. Currently, 600 million Indians face high to extreme water stress and about two lakh [two hundred thousand] people die every year due to inadequate access to safe water. The crisis is only going to get worse.”<sup>2</sup>

In the same year, an economic survey by the Government of India warns that agricultural outlook faces dramatic impacts based on current climate projects.<sup>3</sup> The changes in rainfall and temperatures will have impacts on yields and revenues, on a sector that is the mainstay of most people in the country. With its large population, including 70 per cent of the population living in rural areas, India is seen as particularly climate-vulnerable.<sup>4</sup> Climate processes intertwine in a myriad of ways into the ‘waterscape’ of India. Literature around water issues in India has often shied away from climate issues, because of the more acute social and developmental issues around water at a local scale. While this is understandable, at the same time, it is becoming increasingly difficult to ignore climate issues. As this thesis will illustrate, climate processes are deeply intermeshed in water issues across India today.

The hydro-climatic (water and climate) crisis has manifested in many ways. Rivers, streams and surface water sources in India have been under considerable stress because of overexploitation, pollution, and contamination. The carrying

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<sup>1</sup> KJ Joy and others (eds), *Water Conflicts in India: A Million Revolts in the Making* (Routledge India 2018).

<sup>2</sup> NITI Aayog, ‘Composite Water Management Index: A Tool For Water Management’ (NITI Aayog 2018) 15.

<sup>3</sup> Ministry of Finance, Government of India, ‘Climate, Climate Change and Agriculture’, *Economic Survey 2017-18* (Ministry of Finance 2018) <<http://mofapp.nic.in:8080/economicsurvey/>> accessed 20 August 2019.

<sup>4</sup> Aayushi Awasthi, ‘Why India Needs to Worry About Climate Change’ *BBC News* (25 October 2018) <<https://www.bbc.com/news/world-asia-india-45949323>> accessed 5 August 2019; Padmini Gopal, ‘IPCC Special Report: Climate Risks Require India to Rethink Its Approach’ [2018] *Down to Earth* <<https://www.downtoearth.org.in/blog/climate-change/ipcc-special-report-climate-risks-require-india-to-rethink-its-approach-61821>> accessed 5 August 2019.



capacity of the rivers in India has diminished through anthropogenic activities, such as the building of dams and hydropower.<sup>5</sup> India currently has the third-highest number of dams in the world.<sup>6</sup> Water pollution is a critical issue, with untreated sewage, agricultural runoff and industrial activity as significant causes. Approximately 70 per cent of India's surface water and a growing percentage of its groundwater reserves are contaminated, rendering them unsafe for human consumption or use.

In recent years, groundwater, the primary source of water for much of the country, has been under severe pressure.<sup>7</sup> Since the 1960s, technological and market conditions (such as subsidies) have seen groundwater exploited across the country such that water tables are now severely stressed.<sup>8</sup> Intensive agriculture, the use of pesticides and fertilisers has led to groundwater quality diminishing as well. Changing rainfall patterns have put added stress on groundwater. Groundwater has traditionally been relied upon as a 'buffer' during a lean monsoon or drought, thus viewed for its potential role in 'climate adaptation'.<sup>9</sup> However, this is becoming increasingly difficult. Moreover, falling water tables, and changing rainfall patterns have seen the use of more intensive exploitation of the groundwater in a 'race to the bottom' type scenario.<sup>10</sup>

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<sup>5</sup> Sharad K Jain and Pradeep Kumar, 'Environmental Flows in India: Towards Sustainable Water Management' (2014) 59 *Hydrological Sciences Journal* 751.

<sup>6</sup> Prabhat Singh, '6 Charts That Explain India's Water Crisis' *Live Mint* (27 April 2015) <<https://www.livemint.com/Opinion/97fuaF2aQkO9IjPiPAjMyL/Six-charts-that-explain-Indias-water-crisis.html>> accessed 13 July 2019.

<sup>7</sup> See: Himanshu Kulkarni, Mihir Shah and PS Vijay Shankar, 'Shaping the Contours of Groundwater Governance in India' (2015) 4 *Journal of Hydrology: Regional Studies* 172; Tushaar Shah, 'Climate Change and Groundwater: India's Opportunities for Mitigation and Adaptation' (2009) 4 *Environmental Research Letters* 035005; Himanshu Kulkarni and PS Vijay Shankar, 'Groundwater Resources in India: An Arena for Diverse Competition' (2014) 19 *Local Environment: The International Journal of Justice and Sustainability* 990.

<sup>8</sup> Tushaar Shah, Mark Giordano and Aditi Mukherji, 'Political Economy of the Energy-Groundwater Nexus in India: Exploring Issues and Assessing Policy Options' (2012) 20 *Hydrogeology Journal* 995.

<sup>9</sup> Timothy Richard Green, 'Linking Climate Change and Groundwater' in Anthony J Jakeman and others (eds), *Integrated Groundwater Management* (Springer International Publishing 2016).

<sup>10</sup> Kulkarni, Shah and Vijay Shankar (n 7) 180.

More than 44 per cent of India's areas were under various degrees of drought conditions in 2019, an increase of nearly 11 percentage points from over a year ago.<sup>11</sup> During a drought, rural lives are hit particularly hard because of their intrinsic link with water for livelihoods. Seventy per cent of rural households depend primarily on agriculture for livelihood, with 82 per cent of farmers being small or marginal.<sup>12</sup> With droughts hitting such livelihood activity, internal migration from rural to urban areas has become a standard feature across the country. During a drought, searching for basic water can become a life and death matter. Gupta describes a recent, but familiar, scene of drought in India:

“The main drinking water well in Umarkheda has gone dry, as in every village in the region. Every alternate day, the district administration sends a tractor towing a 50,000-litre water tanker. That water is poured into the well, and residents scramble to pull it out. Every household has two or three 20-litre vessels attached with ropes, and residents – mostly women and girls – jostle at the lip of the well pulling out the water. The faster you are, the stronger in pushing your neighbours away, the more water you have.”<sup>13</sup>

At the same time ‘too much water’ is just as much of an issue in many parts of the country. Floods severely affect many parts of the country, both rural and urban areas. In 2017 and 2018, significant floods hit West Bengal, Gujarat, Kerala, Bihar and Assam, illustrating the widespread flooding issues across the countries. These have not just been in rainfall abundant areas, but also drought-prone areas. For example, in Rajasthan, an arid and drought-prone state, flash floods have caused damage and death in recent years.<sup>14</sup> The flood-prone area cross the country has more

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<sup>11</sup> Shagun Kapil, ‘Drought Watch: More than 44% of India Now Suffers’ [2019] *Down to Earth* <<https://www.downtoearth.org.in/news/climate-change/drought-watch-more-than-44-of-india-now-suffers-65127>> accessed 13 July 2019.

<sup>12</sup> Food and Agriculture Organization of the United Nations, ‘India at a Glance’ <<http://www.fao.org/india/fao-in-india/india-at-a-glance/en/>> accessed 7 March 2018.

<sup>13</sup> Joydeep Gupta, ‘Surviving India’s Drought: “People Have Stopped Expecting a Decent Life”’ *ThirdPole* (13 June 2019) <<https://www.thethirdpole.net/en/2019/06/13/surviving-indias-drought-people-have-stopped-expecting-a-decent-life/>> accessed 21 July 2019.

<sup>14</sup> Kirtiman Awasthi, ‘A Look At Floods in Rajasthan’s Barmer District’ [2015] *Down to Earth* <<https://www.downtoearth.org.in/coverage/a-look-at-floods-in-rajasthans-barmer-district-8590>> accessed 13 July 2019.

than doubled in the last thirty years.<sup>15</sup> Recent research has also shown there is an increasing intensity of wet spells and extremely dry spells in the South Asian Monsoon.<sup>16</sup> Floods bring significant concerns around the delivery of drinking water, water for sanitation and basic uses. Floods also create contestations and conflicts over how a particular river or basin should be managed.<sup>17</sup> These conflicts can be between different users of water, be they local communities, corporations, or different elements the state.

India has 7500km of coastlines that have become increasingly impacted by climate-related sea level rise and coastal erosion. Major cities like Mumbai, Chennai and Kolkata are on the front lines. Some islands in the Sundarbans, West Bengal have already ‘disappeared’, and parts of the delta have shrunk.<sup>18</sup> Moreover, sea-level rise salinates potable water sources, leaving significant issues around water. Cyclones pose another threat in coastal areas. For example, in 2009, Cyclone Aila hit the coast of eastern India and Bangladesh. The Cyclone killed more than 300 people, displaced over a million, and left millions more in post-disaster risks. It also left an indomitable impact on affected regions and is a ‘critical juncture’ in the socio-economic and socio-ecological makeup of the region.<sup>19</sup>

Drinking water needs and access to water for the most basic uses remains an issue in India, although there have been significant improvements in the last few decades. In 2018, a report by the NGO Water Aid singled out India, among five countries with the highest percentage or largest number of people who cannot access

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<sup>15</sup> DK Mishra, ‘Flood Management: Back to Square One’ in Sunita Narain and others (eds), *State of India's Environment 2017* (Centre for Science and Environment 2017).

<sup>16</sup> Deepti Singh and others, ‘Observed Changes in Extreme Wet and Dry Spells During the South Asian Summer Monsoon Season’ (2014) 4 *Nature Climate Change* 456.

<sup>17</sup> Eklavya Prasad and others (eds), *Agony of Floods: Flood Induced Water Conflicts in India* (Forum for Policy Dialogue on Water Conflicts in India 2012).

<sup>18</sup> Rupak De Chowdhuri and Sunil Kataria, ‘Villagers Fear for Survival on India's Disappearing Island’ *Reuters* (29 November 2018) <<https://www.reuters.com/article/us-climate-change-india-islands/villagers-fear-for-survival-on-indias-disappearing-island-idUSKCN1NY0BQ>> accessed 20 July 2019.

<sup>19</sup> Amites Mukhopadhyay, ‘In Aila-Struck Sundarbans’ (2011) XLVI *Economic & Political Weekly* 21.

clean water within a half-hour round trip.<sup>20</sup> Drinking water pollution and contamination remain a critical issue for the majority of the population, particularly in rural areas. Moreover, water beyond just the most basic drinking and domestic water are of critical importance. Access to such basic livelihood water is a cause of rural distress and internal migration.

Growing demand for water, through processes of urbanisation, economic and industrial growth, resource-intensive extraction, means that conflicts over water will continue to feature over coming decades. The current economic model based on resource exploitation and market-led growth shows very little sign of being usurped. Poverty is a central feature in the socio-political makeup of contemporary India. The last three decades have seen a burgeoning middle class develop in India, as well as millions lifted out of poverty.<sup>21</sup> However, according to the World Bank, 20 per cent of Indians continue to live in poverty.<sup>22</sup> Numerically, India still has the highest number of people living in poverty in the world (364 million people).<sup>23</sup> India continues to lag under UN Human Development indices, ranking 130<sup>th</sup> in the world.

Issues of poverty intersect with gender, caste and ethnicity. In the Indian context, caste is an important dimension. Caste hierarchies in India have centred on ritual purity and cleanliness that mediate water access.<sup>24</sup> *Dalit* communities have poorer access to water in general. Only 28 per cent of Dalit households have water

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<sup>20</sup> Water Aid, 'The Water Gap: The State of the World's Water 2018' (Water Aid 2018) <<https://washmatters.wateraid.org/sites/g/files/jkxooof256/files/The%20Water%20Gap%20State%20of%20Water%20report%20lr%20pages.pdf>> accessed 13 July 2019.

<sup>21</sup> UNDP, '271 Million Fewer Poor People in India' (20 September 2018) <<https://www.in.undp.org/content/india/en/home/sustainable-development/successstories/MultiDimesnionalPovertyIndex.html>> accessed 4 April 2020.

<sup>22</sup> World Bank, 'India's Poverty Profile' (*World Bank*, 27 May 2016) <<https://www.worldbank.org/en/news/infographic/2016/05/27/india-s-poverty-profile>> accessed 5 August 2019.

<sup>23</sup> Oxford Poverty & Human Development Initiative, *Global Multidimensional Poverty Index 2018: The Most Detailed Picture to Date of the World's Poorest People* (University of Oxford 2018) <<https://ophi.org.uk/multidimensional-poverty-index/global-mpi-2018/>> accessed 5 August 2019.

<sup>24</sup> Mukul Sharma, *Caste and Nature: Dalits and Indian Environmental Politics* (Oxford University Press 2017).

facilities within their premises.<sup>25</sup> In rural areas, most Dalit households survive on the absolute minimum civil amenities and infrastructure, as well as crucially rely on their access to water on the “goodwill of the dominant caste” to access water. These inequities accelerate during times of water stress, including into caste-based violence around access to water.<sup>26</sup>

Indigenous and tribal populations also face significant inequalities and structural issues around water in India. India has a long history of exclusion and marginalisation of tribal communities. According to the 2011 Census, one in four tribal households did not have access to a safe water source.<sup>27</sup> Recent reports have emphasised that tribal populations have been forced to search for alternative livelihoods, due to agricultural and forest-related issues around water, climate, land rights and rural economy.<sup>28</sup> Accordingly, these deeply entrenched inequalities and power structures permeate in producing climate vulnerability. As Singh et al. conclude in their research on rural India that “risks from environmental change, climate change, and increased climate variability are important but mediated by existing structural conditions such as poor market linkages, inadequate credit, low asset bases, and caste- and gender-based differences”.<sup>29</sup>

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<sup>25</sup> Swarup Dutta, Ishita Sinha and Adya Parashar, ‘Dalit Women and Water: Availability, Access and Discrimination in Rural India’ (2018) 4 *Journal of Social Inclusion Studies* 62.

<sup>26</sup> ‘Dalit Boy Denied Water from Hand Pump, Drowns While Drinking from Well’ <https://www.hindustantimes.com/> (9 March 2016) <<https://www.hindustantimes.com/bhopal/dalit-boy-not-allowed-water-from-school-hand-pump-drowns-while-drinking-from-well/story-9KLdKKDT9BazWAPy56ZxDP.html>> accessed 16 March 2018; ‘Dalit Woman Denied Water Access, Husband Digs Own Well in Drought-Hit Maharashtra Village’ *The Indian Express* (8 May 2016) <<http://indianexpress.com/article/india/india-news-india/dalit-woman-denied-water-access-husband-digs-own-well-in-drought-hit-maharashtra-village-2790466/>> accessed 16 March 2018.

<sup>27</sup> ‘Nearly 27% Tribal Population In India Do Not Have Access To Safe Source Of Drinking Water: Govt Tells Parliament’ *Outlook India* (5 April 2018) <<https://www.outlookindia.com/website/story/nearly-27-tribal-population-in-india-do-not-have-access-to-safe-source-of-drinki/310586>> accessed 4 April 2020.

<sup>28</sup> Richard Mahapatra, ‘More than 50% of India’s Tribal Population Has Moved out of Traditional Habitats’ [2018] *Down to Earth* <<https://www.downtoearth.org.in/news/health/more-than-50-of-india-s-tribal-population-has-moved-out-of-traditional-habitats-62208>> accessed 5 August 2019.

<sup>29</sup> Chandni Singh and others, ‘Risks and Responses in Rural India: Implications for Local Climate Change Adaptation Action’ (2018) 21 *Climate Risk Management* 52, 65.

Gender relations are another area of critical inequality and injustice. Unequal gender relations in society can determine access and control over natural resource, endowments and roles in decision making. Gendered dependence on natural resources and divisions of labour produce a different level of vulnerability that vary across different contexts.<sup>30</sup> In the water sector, women's roles have often been taken for granted when it comes to basic water uses at home (such as drinking, cooking, washing and sanitation). Women's roles in the 'productive' water sector of agriculture have also been marginalised.<sup>31</sup> For instance, access to water for irrigation is often tied with land ownership that tends to be dominated by men. Nevertheless, a gendered division of labour means women play an important (but unacknowledged) role in the maintenance and preservation of water sources used in agriculture, as well for homestead plots. A growing literature has also demonstrated how the impacts of climate change on water, such as floods, cyclones, tsunamis, droughts straining existing gender relations, place greater burdens on women (due to existing roles and responsibilities, particularly as caregivers) and reproduce existing inequalities.<sup>32</sup>

On the other hand, certain sections of the population are less affected by the water (and climate) crisis. Wealthier residents in major cities, for example, continue to have access to water without significant interruptions.<sup>33</sup> Urban areas also draw in water from rural areas, with legal and political framework working in favour of

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<sup>30</sup> see generally: Bina Agarwal, 'The Gender and Environment Debate: Lessons from India' (1992) 18 *Feminist Studies* 119.

<sup>31</sup> Amit Mitra and Nitya Rao, 'Gender, Water and Nutrition in India: An Intersectional Perspective' (2019) 12 *Water Alternatives* 169, 171.

<sup>32</sup> See for example: Farhana Sultana, 'Gender and Water in a Changing Climate: Challenges and Opportunities' in Christiane Fröhlich and others (eds), *Water Security Across the Gender Divide* (Springer 2018); Nibedita S Ray-Bennett, 'The Influence of Caste, Class and Gender in Surviving Multiple Disasters: A Case Study from Orissa, India' (2009) 8 *Environmental Hazards* 5; Kuntala Lahiri-Dutt, 'Large Dams and Changes in an Agrarian Society: Gendering the Impacts of Damodar Valley Corporation in Eastern India' (2012) 5 *Water Alternatives* 529.

<sup>33</sup> Water Aid, 'Beneath the Surface: The State of the World's Water 2019' (Water Aid 2019) 4 <[https://washmatters.wateraid.org/sites/g/files/jkxooof256/files/beneath-the-surface-the-state-of-the-worlds-water-2019-\\_0.pdf](https://washmatters.wateraid.org/sites/g/files/jkxooof256/files/beneath-the-surface-the-state-of-the-worlds-water-2019-_0.pdf)> accessed 25 July 2019; Matthew Gandy, 'Landscapes of Disaster: Water, Modernity, and Urban Fragmentation in Mumbai' (2008) 40 *Environment and Planning A: Economy and Space* 108.

reallocating water for urbanisation projects and urban needs.<sup>34</sup> Such developments often cause conflict and violence from protesting rural residents.<sup>35</sup> Water wastage, industrial overuse of water, and the types of agricultural water use are also important considerations.<sup>36</sup> For example, industrial water use is the second-highest sector of water use in India. A vital issue with industrial water use is that most of the water is dumped back as untreated pollution into other water sources, further polluting rivers and streams, including affecting communities who depend on these sources as an essential source of water.<sup>37</sup>

### *1.1.2 Local to Global: Hydro-Climatic Change, Water and the Anthropocene*

The challenges at the local level are intrinsically linked to global processes. Local water issues cumulatively add up to global trends.<sup>38</sup> Similarly, global climate processes, materialise across multiple scales. Global climate change is projected to continue, as commitments to reduce greenhouse gas emissions continue to fall short of preventing dangerous levels of climate change.<sup>39</sup> Four out of nine planetary boundaries (climate change, biosphere integrity, biogeochemical flows, and land system change) have been crossed, illustrating the scale of the socio-ecological

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<sup>34</sup> Francoi Molle and Jeremy Berkoff, 'Cities vs. Agriculture: A Review of Intersectoral Water Reallocation' (2009) 33 *Natural Resources Forum* 6; Bharat Punjabi and Craig A Johnson, 'The Politics of Rural–Urban Water Conflict in India: Untapping the Power of Institutional Reform' (2019) 120 *World Development* 182.

<sup>35</sup> Amita Bhaduri, 'Bisalpur Revisited - 10 Years after Protesters Were Shot, Killing 5' *India Water Portal* (10 September 2015) <<http://www.indiawaterportal.org/articles/bisalpur-revisited-10-years-after-protesters-were-shot-killing-5>> accessed 3 September 2018.

<sup>36</sup> 'No Water-Shortage in India, but Huge Water-Waste' *The Financial Express* (21 April 2018) <<https://www.financialexpress.com/opinion/no-water-shortage-in-india-but-huge-water-waste/1140381/>> accessed 25 July 2019.

<sup>37</sup> Suresh Chand Aggarwal and Surender Kumar, 'Industrial Water Demand in India: Challenges and Implications for Water Pricing' in Infrastructure Development Finance Company (ed), *India Infrastructure Report 2011: Water Policy and Performance for Sustainable Development* (Oxford University Press 2011).

<sup>38</sup> Joyeeta Gupta, 'Sharing Our Water: Inclusive Development and Global Water Justice in the Anthropocene' in Rutgerd Boelens, Tom Perreault and Jeroen Vos (eds), *Water Justice* (1st edn, Cambridge University Press 2018).

<sup>39</sup> United Nations Environment Programme, *Emissions Gap Report 2018* (UNEP 2018).

challenge at a planetary level and invoking the concept of the Anthropocene.<sup>40</sup> It is also increasingly clear that the planet is heading for tipping points where it would become increasingly difficult for humans to have a level of predictability around the earth-system that has been assumed in previous centuries.<sup>41</sup>

The lens of the Anthropocene here is useful in recognising how today a drought or a flood cannot be seen out of its global context, as well as separate from the social connections to the environment. The Anthropocene is defined as the current geological epoch that signifies a period where humans are considered the geological force on the planet, changing its biophysical and climate for millennia to come.<sup>42</sup> The Anthropocene is a shift away from the Holocene, characterised by a stable climate, into an epoch where humans have a significant role in the earth's geological and ecosystems (including, but not limited to, changes in the climate). Water plays a fundamental role in sustaining critical life-support systems of the planet, and local and regional changes in water use have impacts across regional and global processes.

The idea of the Anthropocene in the social sciences and humanities is used to argue for a re-examination of the assumption of social and natural worlds being separate from one another. This includes, for example, how the law has assumed separation between the environment and human activity.<sup>43</sup> The Anthropocene forces us to re-examine these lines, as well as our ideas about the relationship between humans and (the rest of) nature. This includes socio-legal institutions and configurations that have a crucial role in mediating such relationships.<sup>44</sup> While the

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<sup>40</sup> W Steffen and others, 'Planetary Boundaries: Guiding Human Development on a Changing Planet' (2015) 347 *Science* 1259855.

<sup>41</sup> J Rockström and others, 'The Unfolding Water Drama in the Anthropocene: Towards a Resilience Based Perspective on Water for Global Sustainability' [2014] *Ecohydrology* 1249, 1252.

<sup>42</sup> Paul J Crutzen, 'Geology of Mankind' (2002) 415 *Nature* 23.

<sup>43</sup> Anna Grear, 'The Vulnerable Living Order: Human Rights and the Environment in a Critical and Philosophical Perspective' (2011) 2 *Journal of Human Rights and the Environment* 23; Bettina Lange, 'How to Think About "Nature-Society" Interactions in Environmental Law "in Action"?' in Andreas Philippopoulos-Mihalopoulos and Victoria Brooks (eds), *Research Methods in Environmental Law: A Handbook* (Edward Elgar Publishing 2017).

<sup>44</sup> Louis J Kotzé, 'Human Rights and the Environment in the Anthropocene' (2014) 1 *The Anthropocene Review* 252.



Anthropocene places a spotlight on the destructive and dominant role of humans on Earth systems, it is important to note the inequalities in the production of and consequences of the Anthropocene.

The Anthropocene illustrates the scale of human force and human precarity towards planetary change, however, it does not mean that the force or precarity is equal amongst everyone. For example, Chakrabarty, referring to the shared precarity, states that “unlike the crises of capitalism, there are no lifeboats here for the rich.”<sup>45</sup> However, Malm and Hornborg argue that “as long as there are human societies on Earth – there will be lifeboats for the rich and privileged. If climate change represents a form of apocalypse, it is not universal, but uneven and combined: the species is as much an abstraction at the end of the line as at the source.”<sup>46</sup> Global environmental changes have not been propelled by humanity as a whole, but rather small subsets of humans who have held power over the last millennia or so.<sup>47</sup> The collective impacts of climate change, across different continents, regions, and countries should not de-emphasise the radical unevenness to climate impacts and vulnerability (both at a planetary and local scale).<sup>48</sup> An important element, therefore, in examining human rights in such a context, is applying a justice lens to the analysis, as well as being cognizant of scale.

In sum, India’s hydro-climatic crisis emerge at multiple levels across the country. The challenges are complex and contested. Issues of climate, water, ecology, poverty and development intersect. The frame of the Anthropocene is one way of connecting up the different processes that intersect, as well as the scales of changes from local to global. However, the challenge is considerable, given the large population, economic and social inequalities, and broader socio-political issues. In

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<sup>45</sup> Dipesh Chakrabarty, ‘The Climate of History: Four Theses’ [2009] *Critical Inquiry* 197, 221.

<sup>46</sup> Andreas Malm and Alf Hornborg, ‘The Geology of Mankind? A Critique of the Anthropocene Narrative’ (2014) 1 *The Anthropocene Review* 62, 66–67.

<sup>47</sup> Camilla Royle, ‘Marxism and the Anthropocene’ (2016) 151 *International Socialism* 63, 75.

<sup>48</sup> Anna Grear, ‘Towards New Legal Futures? In Search of Renewing Foundations’ in Anna Grear and Evandne Grant (eds), *Thought, Law, Rights and Action in the Age of Environmental Crisis* (Edward Elgar Publishing 2015).

this context, a justice framing is vital, although it has been missing in most of the Anthropocene literature.<sup>49</sup>

The water and climate challenges, including their implications on human rights and justice, are not unique to India. Several countries in the Global South face similar issues. In South Africa, groundwater depletion, drought, and other factors have caused critical water vulnerabilities in Cape Town.<sup>50</sup> Jakarta is now described as the “fastest sinking city in the world” because of sea-level rise and groundwater depletion.<sup>51</sup> Sea-level rise and water scarcity is an existential issue in countries in South Asia like Bangladesh.<sup>52</sup> Flooding similarly has devastated Asian countries in recent years, in many cases because of the impacts of hydropower and dams.<sup>53</sup> Water pollution in a climate context is a significant issue for China where rampant intensive agriculture and industrialisation have polluted the majority of rivers and lakes.<sup>54</sup> Accordingly, the challenges and lessons from the case study of India have an international context. Moreover, as will be discussed, current framings of the human right to water (“HRTW”), both in India and in other countries in the world, are relatively narrow and fail to account for how water and climate injustices occur on the

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<sup>49</sup> David Schlosberg, ‘Disruption, Community, and Resilient Governance: Environmental Justice in the Anthropocene’ in Tobias Haller and others (eds), *The Commons in a Global World: Global Connections and Local Responses* (Routledge 2019).

<sup>50</sup> Jonathan Watts, ‘Cape Town Faces Day Zero: What Happens When the City Turns off the Taps?’ *The Guardian* (3 February 2018) <<https://www.theguardian.com/cities/2018/feb/03/day-zero-cape-town-turns-off-taps>> accessed 14 August 2019.

<sup>51</sup> Mayuri Mei Lin and Rafki Hidayat, ‘The Fastest-Sinking City in the World’ *BBC News* (13 August 2018) <<https://www.bbc.com/news/world-asia-44636934>> accessed 14 August 2019.

<sup>52</sup> ‘Bangladesh Rated World’s Most Vulnerable Country to Climate Change’ (*Climate Home News*, 30 October 2013) <<https://www.climatechangenews.com/2013/10/30/bangladesh-rated-worlds-most-vulnerable-country-to-climate-change/>> accessed 25 April 2019.

<sup>53</sup> Deutsche Well, ‘Laos Disaster Reveals the Ugly Side of Hydropower in Southeast Asia’ (25 July 2018) <<https://www.dw.com/en/laos-disaster-reveals-the-ugly-side-of-hydropower-in-southeast-asia/a-44822877>> accessed 14 August 2019; ‘Deadly Flooding Hits Central Vietnam’ *BBC News* (17 October 2016) <<https://www.bbc.com/news/world-asia-37672862>> accessed 14 August 2019.

<sup>54</sup> ‘China Says Progress Made on Water Pollution, But Battle Remains’ *South China Morning Post* (1 June 2018) <<https://www.scmp.com/news/china/policies-politics/article/2148779/china-says-progress-made-water-pollution-battle-remains>> accessed 14 August 2019.

ground. Thus, a broader understanding that leads to a broader framing of the HRTW has cross-jurisdictional lessons.

## **1.2 Background to the debates - Human Rights, Water and Climate Change**

The climate and water crises have evoked a range of domestic and international law responses. The focus of this thesis is on the HRTW and its interactions with climate change. This extends to the laws and policies that underpin the HRTW. Thus the analysis is not restricted to purely human rights law itself. This section provides a brief background to law and policy on the HRTW, and ‘human rights and climate change’ so far as it has been considered together. The discussions here are important to locate the position of this research in the literature, including the overall contribution of this research.

### *1.2.1 Human Right to Water and Climate Change: Law and Policy Manoeuvres*

In the late 2000s, an acceptance that climate change would have a significant impact on the realisation of human rights was recognised under international law. In 2008, the UN Human Rights Council adopted a resolution stating, among other things, that “climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights”.<sup>55</sup> The resolution builds upon the sustained effort, going back to the Stockholm Declaration in 1972, that recognised the relationship between the environment and human rights. Nevertheless, the explicit link to climate change was significant. The resolution asked the Office of the United Nations High Commissioner for Human Rights to prepare an analytical study on climate change and human rights.<sup>56</sup> The Human Rights Council subsequently established a mandate for an Independent Expert

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<sup>55</sup> UN Human Rights Council, ‘Resolution 7/23 - Human Rights and Climate Change’ (2008) A/HRC/RES/7/23.

<sup>56</sup> UN Human Rights Council, ‘Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship Between Climate Change and Human Rights’, (2009) U.N. Doc. A/HRC/10/61 <<http://www.ohchr.org/Documents/Press/AnalyticalStudy.pdf>>.

on human rights and the environment in 2012.<sup>57</sup> An integral part of the Independent Expert's work to date has been analysing the relationship between human rights and climate change.<sup>58</sup> Most recently, the relationship between human rights and climate change has been explicitly recognised under the Paris Agreement, which was the first mention of 'human rights' in a climate change treaty.

Recognition of the linkages between human rights and climate change at the international level reflect the efforts of communities, activists, and climate-vulnerable nations. For example, in 2005 the Inuit people of the Arctic regions of US and Canada along with the Inuit Circumpolar Conference filed a petition in the Inter-American Commission to obtain relief from human rights violations resulting from the impacts of global warming and climate change caused by acts and omissions of the United States.<sup>59</sup> The petition highlights the links between climate change and its impacts on drinking water and river bodies which the Inuit rely upon for fish.<sup>60</sup> Similarly, the international climate justice movement that came together in the early 2000s also put human rights concerns at its core. From its very beginning, the climate justice movement highlighted the concerns of communities in the Global South whose human rights were threatened by climate change, including from fossil fuel production.<sup>61</sup> Governments of small island states were also influential, for example through the Malé Declaration in 2007, which was the first intergovernmental

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<sup>57</sup> UN Human Rights Council, 'Resolution 19/10 - Human Rights and the Environment' (2012) A/HRC/RES/19/10.

<sup>58</sup> In 2016, for example, a special report on 'human rights and climate change' was produced by the Special Rapporteur, see for example: UN Human Rights Council, 'Report of the Special Rapporteur on the Issue of Human Rights Obligation Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment' (2016) A/HRC/31/52.

<sup>59</sup> Inuit Circumpolar Council Canada, 'Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States' (2005) <<https://www.inuitcircumpolar.com/press-releases/inuit-petition-inter-american-commission-on-human-rights-to-oppose-climate-change-caused-by-the-united-states-of-america/>> accessed 1 August 2019.

<sup>60</sup> *ibid* 61–65.

<sup>61</sup> This can be seen in the early influential literature of the climate justice movement, see for example: Kenny Bruno, Joshua Karliner and China Brotsky, *Greenhouse Gangsters vs. Climate Justice* (Transnational Resource and Action Center 1999).

statement that climate change has “clear and immediate implications for the full enjoyment of human rights”.<sup>62</sup> The Malé Declaration was an important precursor to the UN Human Rights Council Resolutions recognising human rights and climate change.<sup>63</sup>

Around the same time, the UN General Assembly passed a resolution on the HRTW that is seen as a ‘watershed’ moment for rights-based activists around the world.<sup>64</sup> The decade previous had seen widespread conflicts over water resources, with governments and corporations often pitted against communities, social movements and civil society activists. Following the General Assembly’s resolution, the UN Human Rights Council adopted, by consensus, a resolution on the human right to safe drinking water and sanitation.<sup>65</sup> Both resolutions were significant in progressing the acceptance of the HRTW as an internationally recognised right.<sup>66</sup>

The developments at the global level in the late 2000s were significant and reflected the growth of rights-based approaches under international law. However, at a domestic level, a number of countries had already recognised the HRTW as well as the human right to a healthy environment.<sup>67</sup> In India, both these human rights have been recognised since 1991.<sup>68</sup> Public interest litigation in India had seen a surge of

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<sup>62</sup> ‘Male’ Declaration on the Human Dimension of Global Climate Change’ (2007) <available from: [http://ciel.org/Publications/Male\\_Declaration\\_Nov07.pdf](http://ciel.org/Publications/Male_Declaration_Nov07.pdf)> accessed 29 August 2019.

<sup>63</sup> John H Knox, ‘The Paris Agreement as a Human Rights Treaty’ in Dapo Akande and others (eds), *Human Rights and 21st Century Challenges: Poverty, Conflict, and the Environment* (1st edn, Oxford University Press 2020).

<sup>64</sup> UNGA, ‘The Human Right to Water and Sanitation’ (2010) A/RES/64/292; Maude Barlow, *Blue Future: Protecting Water for People and the Planet Forever* (New Press, The 2014) 1.

<sup>65</sup> UN Human Rights Council, ‘Resolution 15/9 - Human Rights and Access to Safe Drinking Water and Sanitation’ (2010) A/HRC/RES/15/9.

<sup>66</sup> Sharmila L Murthy, ‘The Human Right(s) to Water and Sanitation: History, Meaning and the Controversy Over Privatization’ (2013) 31 *Berkeley Journal of International Law* 89.

<sup>67</sup> The right to water has been recognised by a number of different countries under their constitutions directly, through court decisions, or legislation. This is discussed further in Chapter Three. At least 150 countries have enshrined environmental protection or the right to a healthy environment in their constitutions, see: United Nations Environment Programme, ‘Environmental Rule of Law: First Global Report’ (UNEP 2019).

<sup>68</sup> *Subhash Kumar v State of Bihar & Ors* [1991] AIR 420 (Supreme Court of India).

rights-based judgements from the Supreme Court in the 1980s and 1990s. The Supreme Court read the HRTW into Article 21, the right to life.<sup>69</sup> Cases around the right to water also concentrated on environmental issues of pollution and scarcity. Notwithstanding this, very little recognition of a HRTW was provided in the legislation and policy that subsequently developed. In other words, the Supreme Court's articulation of the HRTW failed to translate into further legal and policy reforms.<sup>70</sup>

The lack of elaboration on the HRTW in the Indian context is somewhat surprising given the water-related issues described earlier. Moreover, water law and policy has gone through changes in India in some respects. Economic liberalisation in 1991 saw a greater role for private capital in the economy generally. Water policy reforms took place in the late 1990s and 2000s, underlined with a shift to looking at water as an 'economic good' (as opposed to public good) and 'cost-recovery' was an important aspect of water sector activity.<sup>71</sup> Environmental concerns, where included, were largely about improving 'efficiency'. Widespread policy reforms (as opposed to legislative reforms) took place. These reforms were intrinsically linked to the broader structural changes in the economy, as well as broader international policy.

At the same time, some areas of water law have not been reformed for decades or even centuries. For example, the laws around accessing groundwater have remained the same, for the most part, since the 19<sup>th</sup> century despite the significant transformations in climate, technology, society, and the economy that have led to the crisis of today. Riparian laws are largely based on a colonial understanding of the relationship between water, society and broader ecology. As will be explored later, these understandings were different to the material reality of the Indian subcontinent (particularly the binaries between land and water that were embedded in colonial

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<sup>69</sup> *ibid.*

<sup>70</sup> Philippe Cullet, 'Right to Water in India – Plugging Conceptual and Practical Gaps' (2013) 17 *International Journal of Human Rights* 56.

<sup>71</sup> Philippe Cullet and Roopa Madhav, 'Water Law Reforms in India: Trends and Prospects' in Ramaswamy R Iyer (ed), *Water and the Laws in India* (SAGE 2009).

law). Colonial understandings did not also account for the role of socio-ecological processes (such as sedimentation of rivers in South Asia), of the role of climate processes today, as well as the various ways people access and use water today.

The extent of law and policy developments in India mirrors the direction of the HRTW (and water law) in the Global South. The general direction is one of a narrow focus on drinking water access and a narrow conceptualisation of environmental dimensions related to water.

### *1.2.2 A Narrow Interpretation: Human Right to Water and Climate Change*

The HRTW has received an increasing level of acceptance by governments and policymakers around the world; however, its scope and contents have been narrowly interpreted with a focus on solely drinking (and domestic) water access. A laudable aim of the HRTW has been the improvement of access to safe drinking water globally, driven by the World Health Organisation (“WHO”) and the UN agencies. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (“JMP”) has been influential in the Global South through its production of regular estimates of national, regional and global progress on drinking water, sanitation and hygiene since 1990. The goal-oriented nature of satisfying such metrics is useful for policymakers in measuring progress. The JMP provides metrics on whether people have access to ‘improved sources’ of water.<sup>72</sup> This includes piped water, public taps/standposts, tube-wells, but also in some situations, access to bottled water sources.<sup>73</sup>

However, a consequence of this is a narrow focus on merely achieving the JMP’s metrics. Goff and Crow point out the overwhelming focus on drinking water

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<sup>72</sup> Improved water sources are those that have the potential to deliver safe water by nature of their design and construction. These include piped supplies (such as households with tap water in their dwelling, yard or plot; or public stand posts) and non-piped supplies (such as boreholes, protected wells and springs, rainwater and packaged or delivered water).

<sup>73</sup> World Health Organisation (WHO) and United Nations Children’s Fund (UNICEF), ‘Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines’ (WHO/UNICEF 2017) <[https://www.unicef.org/publications/index\\_96611.html](https://www.unicef.org/publications/index_96611.html)> accessed 20 August 2018.

has “muted attention to the wider consideration” of water and its impact on livelihoods and poverty.<sup>74</sup> For example, Rodina, in her research in South Africa, finds that “despite the relatively high number of households in Cape Town with access to water within 200m from home (96.6%) the actual material conditions through which water is accessed are uneven, contentious and highly politicised”.<sup>75</sup>

Where the HRTW has not received sufficiently detailed scope and content through legislation or policy, metrics around ‘access to water services’ are often conflated with the requirement of the HRTW. To be clear, it is not that the JMP itself demands that access to improved sources is the metric for the HRTW. Instead, it reflects a broader trend of a ‘turn to metrics’ in human rights that has occurred over the last two decades.<sup>76</sup> Water (and sanitation) has a long history in quantitative target setting, and while this is not necessarily a bad thing, there are significant drawbacks conflating access to basic drinking water, with the broader issues around basic water access, livelihoods as well as ecological considerations around water. As Rodina states, a narrow HRTW would only have limited success in ensuring that poor and marginalised people have access to water beyond mere survival.<sup>77</sup> She argues that “in order to address the various dimensions of water and its role on diverse livelihoods” there is a need move toward “a broader and more holistic interpretation” of the HRTW.<sup>78</sup>

A related shift in both the HRTW and water law and policy is the conceptualisation of water as an ‘economic good’, and environmental management of

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<sup>74</sup> Matthew Goff and Ben Crow, ‘What Is Water Equity? The Unfortunate Consequences of a Global Focus on “Drinking Water”’ (2014) 39 *Water International* 159.

<sup>75</sup> Lucy Rodina, ‘Human Right to Water in Khayelitsha, South Africa – Lessons from a “Lived Experiences” Perspective’ (2016) 72 *Geoforum* 58, 64.

<sup>76</sup> Malcolm Langford and Sakiko Fukuda-Parr, ‘The Turn to Metrics’ 30 *Nordic Journal of Human Rights* 222; Malcolm Langford and Inga Winkler, ‘Muddying the Water? Assessing Target-Based Approaches in Development Cooperation for Water and Sanitation’ (2014) 15 *Journal of Human Development and Capabilities* 247.

<sup>77</sup> Rodina (n 75) 64.

<sup>78</sup> *ibid.*



water centred upon ‘water use efficiency’.<sup>79</sup> These ideas go hand-in-hand in many ways because it is argued that pricing water will reduce ‘wastage’ and improve the efficiency of water usage.<sup>80</sup> Water policies and climate policies in India, for example, have focussed on improving water use efficiencies in the context of climate change.<sup>81</sup> Efficiency and pricing issues around water are, however, particularly narrow. The efficiency of water use does not necessarily lead to a reduction of total water use, and can even lead to increased consumption of water.<sup>82</sup> Furthermore, a focus on efficiency and pricing does not adequately reflect how water is used, shared, or preserved. As Bond has pointed out, such a framework rarely considers how to account for consumption processes (such as over-consumption by industries, wealthier residents, etc.) and ecosystem preservation.<sup>83</sup>

Today, there is a significant amount of critique of the HRTW.<sup>84</sup> A lively debate has ensued on whether human rights can address issues of water and environmental injustices and inequities. While on the one hand, the focus on access to drinking water has improved in many parts of the world, basic water issues continue to be prevalent. These are compounded with issues faced in a climate-pressed world. The original demands of the HRTW were trying to address questions of social and environmental justice. However, D’Souza argues that the HRTW, as a legal right, became a false promise.<sup>85</sup> It invited the ‘global poor’ to believe that having legal

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<sup>79</sup> Murthy (n 66).

<sup>80</sup> Furthermore, ‘efficiency’ can also be framed as cost-efficiencies. See: Philippe Cullet, ‘The Right to Water in Rural India and Drinking Water Policy Reforms’ in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory Practice and Prospects* (Cambridge University Press 2017).

<sup>81</sup> Trevor Birkenholtz, ‘Assessing India ’ s Drip-Irrigation Boom : Efficiency , Climate Change and Groundwater Policy Change and Groundwater Policy’ (2017) 42 *Water International* 663, 667–668.

<sup>82</sup> Birkenholtz, ‘Assessing India ’ s Drip-Irrigation Boom : Efficiency , Climate Change and Groundwater Policy Change and Groundwater Policy’ (n 81).

<sup>83</sup> Patrick Bond, ‘The “Right to the City” Limits to Rights Talk and the Need for Rights to the Commons’ (2013) 27–28 *Theoria* 42, 46.

<sup>84</sup> Farhana Sultana and Alex Loftus, ‘The Human Right to Water: Critiques and Condition of Possibility’ (2015) 2 *Wiley Interdisciplinary Reviews: Water* 97.

<sup>85</sup> Radha D’Souza, ‘Liberal Theory, Human Rights and Water- Justice: Back to Square One?’ [2008] *Law, Social Justice & Global Development Journal* 3  
<[http://www.go.warwick.ac.uk/elj/lgd/2008\\_1/d'souza](http://www.go.warwick.ac.uk/elj/lgd/2008_1/d'souza)>.

rights to water recognised within the human rights framework would lead to access to water for subsistence. Ultimately, she argues that the human rights framework failed to provide a way to change the structural conditions that caused social and environmental injustices around water.

More generally, regarding human rights and its relationship with climate change, it is evident that human rights today exist alongside other areas of law which may further planetary harm. For example, systems of property rights, contract rights, can effectively maintain a system of planetary exploitation and climate harm. As Baxi notes, there is no “right to planetary loyalty”.<sup>86</sup> Human rights law can often focus solely on human rights law itself and, while carving out space for itself, it may become ineffectual if it fails to challenge the processes that drive climate change and threaten the realisation of many fundamental rights that were long fought. In this context, the UN Human Rights Council Resolutions, referred to earlier, were criticised for proceeding “as if the challenge is to manage the negative consequences of climate change for particular groups, rather than recognise that the enjoyment of all human rights by vast numbers of people is gravely threatened.”<sup>87</sup>

Similarly, the Paris Agreement’s inclusion of a link between human rights and climate change reflects the “low priority” given to human rights at international climate change negotiation. While generating interest in academic scholarship, it is important to contextualise that human rights in the Paris Agreement is largely of normative value, and is only reflected in the Preamble and largely circumscribed to mitigation and adaptation actions (as opposed to the wider delivery of human rights to water, food, and other rights). Accordingly, there have been calls for human rights scholars, lawyers and activists to think and practise creatively and radically in

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<sup>86</sup> Upendra Baxi, ‘Towards a Climate Change Justice Theory?’ (2016) 7 *Journal of Human Rights and the Environment* 7, 22.

<sup>87</sup> UN Human Rights Council, ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (2019) A/HRC/41/39 7.

recreating human rights to meet the economic and social transformations that are needed, or risk human rights being written into oblivion.<sup>88</sup>

### 1.2.3 *Emergent Literature on Human Rights and Climate Change*

In 2010, Humphreys noted a “mutual disinterest” between the human rights and climate worlds.<sup>89</sup> A decade later, this is no longer the case. A large body of literature has developed linking human rights and climate change. This literature has complemented and built upon the literature more generally on human rights and the environment.<sup>90</sup> At a general level, climate change is already undermining the realisation of a broad range of internationally protected human rights.<sup>91</sup> It would be difficult to identify a human right that is not affected by climate change. The vulnerability of those individuals and groups, whose rights protections are already precarious, such as women, children, minority groups, indigenous peoples, and displaced peoples, is of particular importance. The focus on human rights is essential in highlighting the ‘human face’ of climate change because scientific and policy discussions often operate in abstracted discourse and aggregate statistics.<sup>92</sup> Human rights also provide a widely endorsed legal norms, which are already defined and implemented through legal instruments.<sup>93</sup>

The relationship between climate change and human rights has been analysed in several different ways. These are discussed in more depth in Chapter Two but

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<sup>88</sup> *ibid.*

<sup>89</sup> Stephen Humphreys, ‘Introduction: Human Rights and Climate Change’ in Stephen Humphreys (ed), *Human Rights and Climate Change* (Cambridge University Press 2010) 4.

<sup>90</sup> For example: Dinah Shelton, ‘Human Rights, Environmental Rights, and the Right to Environment’ (1991) 28 *Stanford Journal of International Law* 103; WA Shutkin, ‘International Human Rights Law and the Earth: The Protection of Indigenous Peoples and the Environment’ (1991) 31 *Virginia Journal of International Law* 479; Klaus Bosselmann, ‘Human Rights and the Environment: Redefining Fundamental Principles?’ in Brendan Gleeson and Nicholas Low (eds), *Governing for the Environment: Global Problems, Ethics, and Democracy* (St Martin’s Press 2001).

<sup>91</sup> Humphreys, ‘Introduction: Human Rights and Climate Change’ (n 89) 1.

<sup>92</sup> John H Knox, ‘Climate Ethics and Human Rights’ (2014) 5 *Journal of Human Rights and the Environment* 22, 24.

<sup>93</sup> *ibid* 25.

outlined briefly for context here. First, research has examined how human rights are affected by climate change, both in terms of legal violations and more general linkages. Early contributions provided a general framework for how human rights and climate change are linked, for example: drawing connections to how climate change jeopardises human rights; analysing the impacts of climate change on human rights generally; endorsing a human rights framework for evaluating who pays for climate actions; as well discussing how human rights regimes can fill the gaps and challenged under (international) law to deal with climate change.<sup>94</sup> In terms of legal violations, analysis has focused on how the human rights regime (that imposes duties upon states) can be utilised to bring justice for climate harms on individuals who are not citizens of the duty-bearing states.<sup>95</sup> There has also been a focus on how different climate change and human rights regimes can complement each other.<sup>96</sup> The literature has primarily focussed on the international level because of the global nature of climate change.

Second, research has examined how human rights are important in designing and ‘implementing’ climate change mitigation and adaptation actions. The Paris Agreement has framed its carefully worded preambular reference to climate change and human rights to only encapsulate the applicability of human rights in such actions by state parties, narrowing the ability of broader linkages of climate change emissions on human rights.<sup>97</sup>

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<sup>94</sup> Simons Caney, ‘Climate Change, Human Rights and Moral Thresholds’ in Stephen Humphreys (ed), *Human Rights and Climate Change* (Cambridge University Press 2010); Stephen Humphreys, ‘Competing Claims: Human Rights and Climate Harms’ in Stephen Humphreys (ed), *Human Rights and Climate Change* (Cambridge University Press 2010).

<sup>95</sup> Margaretha Wewerinke-Singh, *State Responsibility, Climate Change and Human Rights Under International Law* (Hart Publishing 2019) chs 2–7; Sumudu Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (Routledge 2015) 266–290.

<sup>96</sup> See for example: Edward Cameron and Marc Limon, ‘Restoring the Climate by Realizing Rights: The Role of the International Human Rights System’ (2012) 21 *Review of European Community & International Environmental Law* 204; Siobhan McInerney-Lankford, Mac Darrow and Lavanya Rajamani, ‘Human Rights and Climate Change: A Review of International Legal Dimensions’ (2011).

<sup>97</sup> UNFCCC, ‘Decision 1/CP.21, Adoption of the Paris Agreement’ (2016) FCCC/CP/2015/10/Add.1 preamble.

Third, there has also been an interest in how to integrate climate considerations into specific rights. For example, ‘greening’ socio-economic rights<sup>98</sup>, emphasising the importance of procedural rights<sup>99</sup>, as well as advocating for an international ‘right to a healthy environment’<sup>100</sup>.

Finally, there have been critical interrogations of the relationship between human rights and climate change, as well as human rights and the environment more generally.<sup>101</sup> These contributions have been significant in examining the embedded assumptions in (i) human rights; (ii) human rights and its relationship with the environment; and (iii) the law more generally that underpins the realisation of human rights. Critical contributions in this group are generally more theoretical, grappling with whether human rights and law in its current form can deal with (and how it has contributed to) the scale of climate change, earth systems breakdown, and the Anthropocene. At the same time, these approaches have remained mainly abstract from the workings of law and policy on the ground.

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<sup>98</sup> Mac Darrow, ‘Climate Change and the Right to Water’ in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017); Olivier De Schutter and others, ‘Climate Change and the Human Right to Adequate Food’ (2010) 319 *Journal of Human Rights and the Environment* 607.

<sup>99</sup> Svitlana Kravchenko, ‘Procedural Rights as a Crucial Tool to Combat Climate Change’ (2010) 38 *Georgia Journal of International and Comparative Law* 613; Andrea Schapper, ‘Climate Justice and Human Rights’ (2018) 32 *International Relations* 275.

<sup>100</sup> Burns Weston and David Bollier, ‘Toward a Recalibrated Human Right to a Clean and Healthy Environment: Making the Conceptual Transition’ (2013) 4 *Journal of Human Rights and the Environment* 116; Sumudu Atapattu, ‘The Right to a Healthy Environment and Climate Change’ in John H Knox and Ramin Pejan (eds), *The Human Right to a Healthy Environment* (Cambridge University Press 2018).

<sup>101</sup> See for example: Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44); Louis J Kotzé, ‘The Anthropocene, Earth System Vulnerability and Socio-Ecological Injustice in an Age of Human Rights’ (2019) 10 *Journal of Human Rights and the Environment* 62; Anna Grear, ‘Towards “Climate Justice”? A Critical Reflection on Legal Subjectivity and Climate Injustice: Warning Signals, Patterned Hierarchies, Directions for Future Law and Policy’ (2014) 5 *Journal of Human Rights and the Environment* 103; Anna Grear, ‘Human Rights and the Environment: A Tale of Ambivalence and Hope’ in DE Fisher (ed), *Research Handbook on Fundamental Concepts of Environmental Law* (Edward Elgar Publishing 2016); Evandne Grant, Louis J Kotzé and Karen Morrow, ‘Human Rights and the Environment: In Search of a New Relationship. Synergies and Common Themes’ (2013) 3 *Oñati Socio-Legal Series* 953; Sam Adelman, ‘Rethinking Human Rights: The Impact of Climate Change on the Dominant Discourse’ in Stephen Humphreys (ed), *Human Rights and Climate Change* (Cambridge University Press 2010).

#### *1.2.4 The need for a broader analysis: the human right to water and climate change*

In summary, the HRTW has been narrowly interpreted with an overwhelming focus on drinking and domestic water, without adequate consideration of the multiple ways that people experience water stress. As will be shown, this is particularly important in the context of climate change. While international law recognises climate change and its links to human rights, including how human rights are threatened by climate change, there remains a gap in elaborating how human rights can be protected and realised in a climate-pressed world.

Meanwhile, the laws around water that underpin the realisation of the HRTW also have gaps in incorporating the socio-ecological dimensions of climate change. How water is shared, distributed and preserved is particularly important in this context. There has been a narrow focus on efficiency and pricing that has mostly been done to support the economic paradigm dominant over the last three decades. These trends reveal themselves as the HRTW, while increasingly accepted, today sits alongside laws that otherwise allow planetary harms.

Accordingly, the HRTW needs a broader analysis. There is a need to examine how climate change impacts the HRTW, the role of the laws and policies that underpin the HRTW, and if the HRTW needs to be reconceptualised in a climate context. The brief discussion above illustrates the many challenges human rights face in a climate context. While a vast range of academic literature has examined ‘human rights and climate change’ in the last decade, this literature has, for the most part, examined these at the international level as well as concentrated mainly on human rights ‘generally’, as opposed to specific rights such as the HRTW. This research, therefore, tries to address these gaps and challenges. India makes an excellent case study in this context because like other countries in the Global South, it is at the forefront of climate issues. Moreover, the complex, multifaceted hydro-climatic impacts in India, described earlier, intersecting with issues of poverty, development, social exclusion, and economic growth illustrate how several different aspects of water and climate issues need to be examined.

### 1.3 Framing the Research: Methodological Approach & Research Questions

This thesis utilises a socio-legal approach to examining the laws and policy around climate change and the HRTW. A socio-legal approach is one that embraces disciplines and subjects concerned with the law, the social effect of law and legal systems, the influences of social, political and economic factors on them, and a wide range of research methods.<sup>102</sup> Socio-legal studies are an interdisciplinary alternative to traditional doctrinal studies of law. Socio-legal approaches can be described as looking at law “in the context” that it operates within.<sup>103</sup> Inter-disciplinarity is often an important component of much of socio-legal research, though not necessarily synonymous.<sup>104</sup> Socio-legal approaches are popular in examining both questions of environmental law and human rights law. To examine the research questions in this research, outlined below, I draw upon perspectives from political ecology and human geography are drawn upon to inform both the theoretical and methodological approaches of the research. In this sense, the research sits within the broader framework of socio-legal approaches to law.

This section outlines the research questions examined in this thesis. The questions influence the choice of methodology used in the research. Accordingly, this section also outlines how socio-legal approaches have been utilised in human rights and environmental law research. As the research draws on political ecology approaches to water and climate, a brief background to political ecology is provided. I then discuss the reasons for my methodological choice before outlining how the methodology was used through the research. Specifically, as fieldwork was an essential part of the case studies, an overview of how, where, and why fieldwork was done is provided.

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<sup>102</sup> Reza Banakar and Max Travers (eds), *Law and Social Theory* (2nd edn, Hart Publishing 2013).

<sup>103</sup> Sally Wheeler and Phil Thomas, ‘Socio-Legal Studies’ in David J Hayton (ed), *Law’s future(s)* (Hart 2002).

<sup>104</sup> Sarah Blandy, ‘Socio-Legal Approaches to Property Law Research’ (2014) 3 *Property Law Review* 166.

### *1.3.1 Research Questions*

The overarching question that this thesis examines is how the realisation of the HRTW is affected by climate change. It examines this issue by looking at the laws and policies in India, particularly through four case studies. Several related sub-questions follow from the main research question.

- i. How do ideas of ‘justice’ interact with how the human right to water is realised in a climate context?
- ii. To what extent is the human right to water, and the laws and policies that underlie its realisation, able to meet the challenges of climate change from a justice context?
- iii. How does the human right to water need to be reformed or broadened in a climate-pressed world?

### *1.3.2 Socio-Legal and Interdisciplinary Approaches in Examining Human Rights and Environment*

Socio-legal and interdisciplinary approaches are a popular research method for examining questions of human rights and environmental law. McInerney-Lankford argues that it is vital that human rights legal scholars go beyond doctrine and examine empirics of law, including the practical ramifications and actual impact of human rights in social, economic, institutional and political terms.<sup>105</sup> A socio-legal approach allows researchers to go beyond taking it for granted that merely enacting human rights into law is a positive thing. In other words, socio-legal approaches can allow us to go beyond merely arguing in favour of ‘more human rights’ or ‘better implementation’ of human rights in the context of climate change. Rather, a socio-legal method opens up a space to analyse how human rights materialise ‘on the ground’, interacting with various social, economic, political, and ecological dimensions. For example, Hellum uses a socio-legal approach to explore questions

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<sup>105</sup> Siobhan McInerney-Lankford, ‘Legal Methodologies and Human Rights Research: Challenges and Opportunities’ in Bård A Andreassen and Hans-Otto Sano (eds), *Research Methods in Human Rights* (Edward Elgar 2017).



of human rights and water laws in Zimbabwe.<sup>106</sup> Her work looks closely at the interplay between the HRTW, national water laws and community-based water norms. Hellum's methodological choices, drawing on law and anthropology and carrying out localised case studies, allow her to reveal how different processes interact in the realisation of human rights.<sup>107</sup> She argues that while Zimbabwean legislation recognises the HRTW, its local realisation depends on relations between neighbours, local authorities, that go beyond what is immediately apparent from reading the Zimbabwean Water Act that guarantees a right to water.<sup>108</sup>

Questions on environmental law fundamentally cross-disciplinary boundaries and require researchers to work with an understanding of a range of different disciplines.<sup>109</sup> Recent research has shown the benefits of examining questions of water governance through a socio-legal lens. For example, Boer and Others, examining hydropower and water governance in the Mekong Delta, utilise a socio-legal approach to bring alive how the delta is a "contested space".<sup>110</sup> As with other socio-legal approaches, they reject the idea that the delta can be seen as a "naturally occurring phenomena" that awaits legal provision.<sup>111</sup> They assert that a river basin is more than just a phenomenon that require closer contact with law and lawyers. Instead, the river basin is a battleground itself for contending modes of legal consciousness, where different 'laws', norms, regulatory practises, and techniques are influenced by a wide range of practises and agents that need to be examined.<sup>112</sup> Similarly, inter-disciplinary and socio-legal approaches have been used to analyse

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<sup>106</sup> Anne Hellum, 'How to Study Human Rights in Plural Legal Contexts' in Bård-Anders Andreassen, HO Sano and Siobhán McInerney-Lankford (eds), *Research Methods in Human Rights: A Handbook* (Edward Elgar Publishing 2017).

<sup>107</sup> *ibid.*

<sup>108</sup> *ibid* 456.

<sup>109</sup> Elizabeth Fisher, 'Back to Basics: Thinking About the Craft of Environmental Law Scholarship' in Pedersen, Ole W. (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (Cambridge University Press 2018) 36.

<sup>110</sup> Ben Boer and others, *The Mekong: A Socio-Legal Approach to River Basin Development* (Routledge 2016).

<sup>111</sup> *ibid* 41.

<sup>112</sup> *ibid* 43.

water legislation and climate vulnerability in Pakistan<sup>113</sup>, water disputes in India<sup>114</sup>, and perceptions of water rights in England<sup>115</sup> to bring alive how law contests with other phenomena and co-produces differentiated outcomes. Fieldwork and qualitative interviews are a common method used to better understand how these processes interact ‘on the ground’. For example, Hellum interviews women's non-governmental organisation staff, chiefs, sub-chiefs, headmen and elected local councillors, as well as women of different socio-economic classes in examining the HRTW for poorer women in Zimbabwe.<sup>116</sup>

Socio-legal approaches are also important for how environmental law contends with important questions in the Anthropocene. Kotze argues that “a re-imagination and re-conceptualisation of environmental law” may be necessary where environmental law scholarship has to transcend traditional disciplinary boundaries.<sup>117</sup> Environmental legal scholarship is today tasked with re-examining the very assumptions and knowledge systems it relies upon. The Anthropocene brings “front and centre” the tensions and knowledge divisions between, and within, natural and social sciences.<sup>118</sup> Assumptions in the way research and analysis contend with interactions between social, economic, and political processes and the biophysical systems of the planet are recast.<sup>119</sup> Law mediates behaviour and relationships between humans and non-human environments. The separation between the human and non-human environment, or between nature and society, and other fundamental

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<sup>113</sup> Daanish Mustafa, *Water Resource Management in a Vulnerable World: The Hydro-Hazardscapes of Climate Change* (IBTauris 2013) 47–69.

<sup>114</sup> Radha D’Souza, ‘At the Confluence of Law and Geography: Contextualising Inter-State Water Disputes in India’ (2002) 33 *Geoforum* 255.

<sup>115</sup> Bettina Lange and Mark Shephard, ‘Changing Conceptions of Rights to Water? - An Eco-Socio-Legal Perspective’ (2014) 26 *Journal of Environmental Law* 215.

<sup>116</sup> Hellum (n 106) 459–451.

<sup>117</sup> Louis J Kotzé, ‘Reflections on the Future of Environmental Law Scholarship and Methodology in the Anthropocene’ in Ole W Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (Cambridge University Press 2018) 152.

<sup>118</sup> Eduardo S Brondizio and others, ‘Re-Conceptualizing the Anthropocene: A Call for Collaboration’ (2016) 39 *Global Environmental Change* 318, 319.

<sup>119</sup> *ibid.*

assumptions of the world, embedded in our analysis of law and policy need to be re-examined in the context of the Anthropocene. Integrating different disciplines is a compelling way to deliver radical and dramatic regulatory interventions that are necessary.<sup>120</sup> In many ways, the Anthropocene becomes a clarion call for new interdisciplinary and collaborative research agendas. Recent environmental law scholarship has been experimenting with radically different methodologies to questions of environmental law in the context of such urgency.<sup>121</sup>

Nevertheless, this is not to say that the methodological choices in this thesis are because of research trends that are ‘in vogue’. Vinuales warns that legal scholars should not turn to interdisciplinary methodologies at the expense of the core skill-sets of lawyers, because of short-lived ‘turns’ in research methodology trends.<sup>122</sup> There is still much scepticism about the interdisciplinary turn, including in environmental law research. Bodansky voices scepticism about how the blurred boundaries of what constitutes “environmental” when examining environmental issues can be beneficial for lawyers.<sup>123</sup> There are also reasons to be wary of pitfalls over the quality of scholarship when legal scholars try to draw upon disciplines that are outside their own.<sup>124</sup> However, as Fisher states, while there are pitfalls and limitations to interdisciplinarity, an overarching approach should be to think through ‘why’ a particular method is utilised.<sup>125</sup> Fischer argues that the application of method is “not a mechanical enterprise” and one must show fidelity to the material they are dealing with and the research questions being posed.<sup>126</sup> In other words, the point is not to use any particular method as a ‘default’ that needs to be artificially adhered to; rather the

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<sup>120</sup> Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44).

<sup>121</sup> See for example: Andreas Philippopoulos-Mihalopoulos and Victoria Brooks (eds), *Research Methods in Environmental Law: A Handbook* (Edward Elgar Publishing 2017).

<sup>122</sup> JE Viñuales, ‘A Concise Research Agenda for Environmental Law’ [2018] Brill Open Law 1, 3.

<sup>123</sup> Daniel Bodansky, *The Art and Craft of International Environmental Law* (paperback edn, Harvard University Press 2011) 11.

<sup>124</sup> Ole W Pedersen, ‘The Limits of Interdisciplinarity and the Practice of Environmental Law Scholarship’ (2014) 26 *Journal of Environmental Law* 423.

<sup>125</sup> Fisher, ‘Back to Basics: Thinking About the Craft of Environmental Law Scholarship’ (n 109) 36.

<sup>126</sup> *ibid* 38.

choices need to be derived from the questions posed and the materials the research engages with.

### *1.3.3 Political Ecology of Water and Climate Change*

Before discussing the methods used, a brief background on political ecology is necessary to explain why it was utilised in this research. Political ecology is a broad disciplinary approach that aims to understand the complex relations between nature and society. In adopting this approach, political ecology challenges the disciplinary boundaries of social and ecological sciences. This was initially through introducing political economy into environmental narratives.<sup>127</sup> A critical intervention of political ecology was to break the population determinism that explained environmental degradation as caused primarily by a rising human population, in relation to ecological capacity.<sup>128</sup> By inserting power, politics, economics and other factors into this narrative, it disrupted this linear explanation.

Political ecologists have successfully revealed how water and climate stresses have uneven impacts on societies and environments. For example, political ecologists have illustrated how climate impacts affect social structures that mediate individual and community level vulnerability.<sup>129</sup> Pelling illustrates how vulnerability to flooding in Guyana is a product of colonial development and planning laws, which allocated housing by race and class.<sup>130</sup> Such vulnerability has continued through neo-liberal development programmes that have failed to democratise governance and recalibrate class-based power relations.<sup>131</sup> With regard to water scarcity, political ecologists have consistently critiqued the ‘naturalness’ of scarcity and how it is used to create alarm

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<sup>127</sup> Ravi Baghel, *River Control in India: Spatial, Governmental and Subjective Dimensions* (Springer International Publishing 2014) 41.

<sup>128</sup> Paul Robbins, *Political Ecology: A Critical Introduction* (Wiley Blackwell 2011) 14.

<sup>129</sup> Trevor Birkenholtz, ‘Network Political Ecology: Method and Theory in Climate Change Vulnerability and Adaptation Research’ (2012) 36 *Progress in Human Geography* 295.

<sup>130</sup> Mark Pelling, ‘The Political Ecology of Flood Hazard in Urban Guyana’ (1999) 30 *Geoforum* 249.

<sup>131</sup> *ibid* 256–258.

and thus divert attention from the extremely skewed social distribution of water.<sup>132</sup> Mehta, for example, has shown how ‘naturalness’ of water scarcity has been used to drive infrastructural responses, such as dams, as an alleviation mechanism, rather than the underlying injustices of the political economy.<sup>133</sup> The persistent factors that political ecologists have revealed are how water scarcity can often be a crisis of distribution and ecological degradation from systemic and structural processes, leading to differential exposure from hydro-climatic events for some populations, based on various interacting processes and power structures such as class, caste, or gender.<sup>134</sup>

The injustices of water access and distribution have been the starting point for work on the political ecology of water.<sup>135</sup> Through various approaches, political ecology has explained the multiple factors that enmesh water relations. These critiques have three themes. First, critiquing environmentally deterministic readings of water scarcity and insisting that there is attention towards issues of distribution and power. Second, interrogating the acceptance of purely technical solutions to water problems. Third, critiquing the policy fixes of reflexive approaches which insert marketisation, participation, water management, good governance and other managerial approaches. Such fixes, often popular with policymakers, can appear to increase political engagement, but serve to re-enforce existing power relations.

#### *1.3.4 Methods used in this research*

Accordingly, a purely doctrinal research method was unfit to answer the research questions outlined earlier. The research required a contextual understanding of the everyday experiences and challenges faced by both rights-holders and duty-bearers (in relation to the HRTW) in the context of climate change. Thus, a socio-

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<sup>132</sup> Mustafa (n 113).

<sup>133</sup> Lyla Mehta, *The Politics and Poetics of Water: Naturalising Scarcity in Western India* (Orient Longman 2005) 238–276.

<sup>134</sup> Birkenholtz, ‘Network Political Ecology: Method and Theory in Climate Change Vulnerability and Adaptation Research’ (n 129) 300.

<sup>135</sup> Alex Loftus, ‘Rethinking Political Ecologies of Water’ (2009) 30 *Third World Quarterly* 953.

legal approach was used that examined law in its broader context, particularly relying on political ecology and human geography to understand the relationship of climate, water and society. Political ecology provided an ideal framework for understanding how the relationship between rights, water and climate justice could be examined. The main research question concerns how the realisation of the human right to water is affected by climate change. Political ecology provides a framework to understand why such realisation is uneven, with a rich literature on the socio-politics of the environment. In answering the research questions, this thesis combines an interdisciplinary literature review, with analysis of legal and policy text and fieldwork.

The thesis begins with developing a conceptual framework of water and climate justice, drawing on interdisciplinary research from political ecology. This conceptual framework informs an understanding of the human right to water and its realisation. Accordingly, an analysis of the HRTW and its multiple dimensions in a climate context are explored, through analysing law and policy documents at the international and domestic level and also issues and concerns that have not been explicitly recognised under the law (but are relevant to the framework of ‘justice’ developed).

Fieldwork was carried out because the legal and policy texts and available secondary literature were not sufficient to understand and explain the operation of law and policy, various interacting processes and factors that are relevant in the realisation of the right to water in a climate context in India. There are significant issues, for example, regarding the implementation of the right, laws and policies, and understanding how various actors operate. Fieldwork was carried out through four case studies across two different states.

The thesis then breaks into four case studies. Each case study was chosen to examine a variety of ‘climatic’ phenomena and processes that are prevalent in India and globally. This includes sea-level rise, coastal erosion, droughts and floods. Initially, a case study was also included around a Himalayan town (Darjeeling, West Bengal), to bring in aspects of glacial melt. However, due to protracted political violence in the region at the time, this case study was abandoned. Financial and time constraints during fieldwork meant it was not practically possible to do another

Himalayan case study. Finally, the thesis returns to examining the HRTW drawing upon the theoretical, doctrinal, and empirical work of the preceding chapters, reflecting on ways the HRTW can be broadened.

1.3.5 *Fieldwork Locations and Approach*



Fig. 1: Map of Fieldwork Locations

Table 1: Fieldwork Locations and Hydro-Climatic Issues

State	Region/District of Case Study	Hydro-climatic Issues
West Bengal	Sundarbans (24 South Paraganas District)	Sea level rise, cyclones, coastal zone management, groundwater depletion
	Lower Damodar Valley (Burdwan District)	River flooding, hydropower, groundwater depletion
Rajasthan	Jodhpur District	Droughts, groundwater depletion
	Jaipur District	Droughts, rural to urban water transfers

The fieldwork for this thesis was carried out between January and August 2017. Selected districts in two states, Rajasthan and West Bengal, were the sites for fieldwork. These two states provide varied climatic conditions, water issues, and socio-political contexts. Rajasthan is known for being a water-scare and drought-prone state. Meanwhile, West Bengal is classified as a ‘water-rich’ state, particularly with groundwater and several rivers flowing through the state. However, as will be discussed, West Bengal has significant issues with river flooding, environmental flows of rivers, groundwater scarcity based on geography, salination and arsenic. At the same time, West Bengal has regions like the Sundarbans that are one of the most ‘climate vulnerable’, ‘ecologically sensitive’ regions in South Asia. Many of the issues examined in the case studies, such as urbanisation, hydro-power development, cut across state and national boundaries providing lessons to other regions, particularly in the Global South.

In each state, two case studies were carried out. Initially, districts were identified that had particular hydro-climatic issues. Case study locations were chosen based on (i) desk-based research on issues of hydro-climatic stress in the state; (ii) observations during fieldwork. For example, while carrying out fieldwork in the Jodhpur district in Rajasthan, the issues in Jaipur district were brought up by individuals interviewed and this lead to further investigation of issues in Jaipur.



Jodhpur and Jaipur were the two districts in Rajasthan were selected for fieldwork. Jodhpur is among the areas in Rajasthan that experience drought most severely.<sup>136</sup> The district is also at a stage of groundwater development that has exceeded 100%.<sup>137</sup> Jaipur, on the other hand, presented a different set of issues. While drought was also an issue here, both groundwater and surface water were present. However, the higher economic growth around Jaipur city brings these water sources under extreme stress.

In West Bengal, two districts, Burdwan and South 24 Paraganas, were selected. However, a more appropriate division would be to consider two regions. The first is the Lower Damodar Valley region that spans three different districts. Most of the fieldwork carried out was in the Burdwan district; though impacts of floods in neighbouring districts (that were more severe) were also explored. As the issues in districts downstream from the river were essential to the overall case study, it was clear that artificially adhering to one district was not sufficient. Moreover, because West Bengal is a smaller, more densely populated state compared to Rajasthan, confining case studies to individual districts was less appropriate. The second region is the Sundarbans. While it is a part of the South 24 Paraganas district, the Sundarbans is distinct in its own right given its importance as World Heritage site, biosphere reserve and its deltaic nature.

The fieldwork aimed to collect qualitative data to understand opinions and perspectives, as well as challenges faced by both rights-holders and duty-bearers in realising the HRTW in a climate context. In each state and district, I initially carried out desk research of state and district level policies, plans, and secondary literature (academic articles, newspaper articles) to identify and understand local water, environment and climate issues. I then mapped and identified relevant government departments and agencies involved in the implementation of different aspects of the rights.

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<sup>136</sup> Government of Rajasthan, 'Rajasthan State Action Plan on Climate Change' (2010) 29.

<sup>137</sup> *ibid* 48.

Interviews were carried out in a semi-structured format. The types of different actors interviewed were: (i) government officials at the state, district and local (village) level; (ii) representatives from NGOs and activists working on water, climate and related issues in the fieldwork areas; and (iii) where possible, individuals in the community through small focus groups. Government officials included both elected representatives (at a local level) and the state bureaucracy. Relevant departments were identified in each case study and efforts were made to interview relevant senior and mid-level officials. It was not possible across all departments. The principal purpose of interviewing NGOs and activists was to gain critical reflections of their experiences of local issues ‘on the ground’. In order to avoid ‘narrative capture’, in each state, several different NGOs and activists were interviewed. NGOs also assisted with fieldwork in other ways; for example, in Western Rajasthan, two different NGOs were used to visit villages that were in sparsely located areas and to arrange accommodation at their rural offices. NGOs also assisted with setting up focus group discussions and gaining community access. Alternatively, in villages where focus group discussions were not possible, individual interviews were carried out as appropriate. All interviewees are anonymised in this thesis, and a select list of interviews conducted (those most relevant in informing the written thesis) is provided in Appendix One.

At all times, an effort was made to interview a cross-section of society, including women, farmers, lower caste and minorities. All interviews were triangulated with secondary literature, such as official reports, surveys, academic literature on the regions, and news articles. Finally, as I am not conversant in Hindi, a local research assistant was used in Rajasthan. A research assistant was organised through the International Environmental Law Research Centre in Delhi. I am proficient in Bengali; therefore, all fieldwork in West Bengal was carried out alone.

### *1.3.6 Limitations of this research*

It is important to acknowledge that there are several limitations to the research in this thesis. First, the case study approach allowed the thesis to examine a breadth of issues to illustrate the role of law and policy, interacting with other processes, in

mediating the realisation of the HRTW hydro-climatic justice. However, in each case study, there were many other processes that were not discussed. One of the limitations of a study that attempts to draw on how different processes interact in a ‘lived environment’ is that it is simply not possible to study all interacting factors and processes. For example, one limitation here is examining the various socio-cultural processes around water and how such processes interact with laws and policies on the ground. The research does examine issues of gender and caste. However, it does not examine, for example, spiritual or religious values over water or the environment.

Second, there are limits on the material gathered in the field. My own positionality as a researcher had an impact on the types of issues examined in the case studies. For example, unlike anthropologists and political ecologists who can carry out extended ethnographic fieldwork, the method used depended on shorter visits to fieldwork sites (particularly in order to cover four sites). This prevented, for example, including cultural aspects and processes referred to above. Furthermore, my background (i.e. as an Indian who grew up overseas, associated with an overseas university, as well as from ‘the city’ examining rural areas) has its challenges in gaining access, being cognisant of biases in responses being given to suit particular narratives.

Third, the examination of one specific country (India) is also a limitation because of the global nature of climate change. Chapter One outlined the reasons for choosing India and how the research findings may apply to other countries in the Global South. However, it is acknowledged that the issues discussed here, and conclusions drawn, should only be done so with careful consideration of the various processes that are specific to different hydro-social contexts.

Finally, in recent years, there has been a significant interest in post-human, eco-centric analysis of human rights and environmental law.<sup>138</sup> These perspectives have now translated into law and policy, as Courts have recognised the ‘rights of

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<sup>138</sup> See for example: David R Boyd, *The Rights of Nature: A Legal Revolution That Could Save the World* (ECW Press 2017); Astrida Neimanis, ‘Alongside the Right to Water, a Posthumanist Feminist Imaginary’ (2014) 5 *Journal of Human Rights and the Environment* 5.

nature', including to water bodies in India.<sup>139</sup> On the other hand, this research has taken a more anthropocentric view of human rights. Though specific concerns around ecology, preservation of water is given due concern, for example, through expanding the human right to water to multiple uses that include recognition of 'ecological uses' (see Chapter Three, Chapter Seven), and the public trust doctrine and common heritage bring in a clear ecological (see Chapter Seven). However, unlike the 'rights of water', the analysis here has been about the '*human right to water*'. The concerns around poverty, development, inequality 'on the ground', as well as the possibility of eco-centric approaches providing scope for reform under the legal and political context in India, have driven reasons for this approach and focus.<sup>140</sup> However, it is acknowledged that such approaches could be explored in future research that examines the human right to water in a climate context.

### 1.3.7 Research Contribution

This thesis has three main contributions. First, the research contributes towards broadening the conceptualisation of the HRTW in the context of hydro-climatic change. Chapter Seven, in particular, suggests some ways forward for the HRTW, drawing on the findings of this research. Second, the research contributes to the emerging literature on water and climate change law in India, at a much-needed time. While the thesis analyses several areas of law, through examining interactions, the research provides scope for future legislative and policy reforms. Third, the research contributes to the literature on human rights and climate change, combining theoretical analysis of the relationship with grounded, empirical and legal analysis through the case study of India, a country with multiple hydro-climatic issues in the Global South. In this way, the research contributes through providing a more specific

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<sup>139</sup> *Mohd Salim v State of Uttarakhand & others* [2017] High Court of Uttarakhand Writ Petition (PIL) No.126 of 2014.

<sup>140</sup> For example, despite the case of *Mohd Salim v Stat of Uttarakhand & others*, above, being significant for detaching from a purely anthropocentric approach, in fact a close reading of the judgement show that the Court entrusted the river's personality back to the state, who was the source of polluting activities and reason for the litigation itself. This reflects the ad-hoc and problematic nature of the judgement.

analysis of the relationship between human rights and climate change, which is a research gap in the current literature.

## **1.4 Chapter Outline**

This thesis has three parts. Part One introduces the overarching conceptual and legal framing of the thesis. A conceptual framing is outlined in Chapter Two that is drawn upon throughout the remainder of the thesis. The conceptual framework examines ‘hydro-climatic’ justice drawing upon political ecology of water and climate change. Chapter Two also analyses the literature on human rights and climate change and the conceptual justifications for the human right to water. Chapter Three then analyses different dimensions of the human right to water in the context of hydro-climatic justice. Accordingly, dimensions of how the right to water is currently framed in law and policy frameworks and dimensions beyond the current framing are outlined.

Part Two focuses on India, as the overarching case study of this thesis. Chapter Four examines the positive law framework of the human right to water in the context of hydro-climatic justice in India. This chapter maps law, policy and institutional framework for realising the right to water in India. It serves as a ‘bridge’ for Chapter Five and Chapter Six that examine four different case studies across the two states of India. Chapter Five looks at issues of floods, hydropower, sea-level rise in the context of the HRTW in West Bengal. Chapter Six focuses on Rajasthan, where the case studies explore issues of groundwater depletion, drought, urbanisation and water conservation. Common themes and reflections are drawn together at the end of each chapter.

Part Three consists of the final substantive chapter of the thesis, Chapter Seven, and a concluding chapter. Chapter Seven reflects on both Part One and Part Two to examine the third research question on how the HRTW needs to be reformed or extended in a climate-pressed world. Finally, the concluding Chapter Eight, ties together the major themes of the thesis, reflects on the contribution of this research, and suggests areas for potential further research.

## **PART II: LEGAL AND CONCEPTUAL FRAMEWORK**

# **CHAPTER 2.**

## **Hydro-Climatic Justice and the Human Right to Water: Connecting Conceptual Streams**

Water and climate issues are primarily about justice and rights. Such a claim has been the clarion call for activists around the world who aim to put a ‘human face’ to climate change to transform depoliticised discussions around the science, economics, and management of water and climate. A burgeoning literature on theories and forms of ‘water justice’, ‘climate justice’, ‘human rights’, and ‘the relationship between human rights and climate change’ has informed and been informed by these cries for justice and rights. That justice narratives are central to questions of climate and water is not a new idea. Environmental justice has a long and vibrant history, and climate and water justice are built upon environmental justice theories and practices. Furthermore, human rights are closely linked justice claims.

The relationship between human rights and climate and water justices manifest in different ways, for example (i) the importance of a rights-based approach to climate change actions are seen as a way to further justice claims; (ii) the impacts of climate change (for example, increasing extreme weather events) and decisions around water (for example, decisions around the distribution of water) can produce injustices and bring into focus a number of human rights that are affected. This thesis examines the realisation of the HRTW in the context of climate change through a justice framework. This chapter specifically examines what this justice framework encompasses and its interactions with the HRTW.

As will be explained, the justice framework outlined here considers both normative claims of justice and process-based explanations of justice (and injustice). Drawing on the latter, it is argued that while normative definitions of ‘*how things ought to be*’ are important, it is also important to analyse ‘*why things are the way they are*’. To do this, teasing out how different processes that interact to produce and reproduce (in)justice are critical.

This chapter outlines a framework for hydro-climatic justice that will inform this thesis in examining the HRTW. As the term ‘hydro-climatic’ denotes, this chapter considers water and climate issues together through a justice framework that is outlined below. Literature on climate change, water and environmental justice are drawn upon, as well as the more comprehensive scholarship of political ecology and geography. Political ecology has always had strong ties to understandings of justice, even if it does not always explicitly lay these out.<sup>141</sup> Interestingly, while there is extensive scholarship on water and climate justice, the two discussions are often kept separate despite water being integral to how climate change materialises.<sup>142</sup> Drawing on the framework of hydro-climatic justice, the second half of this chapter looks at human rights and the relationship between human rights and climate change. Then goes on to examine justifications for a HRTW.

While rights-based approaches to climate change have grown in the last ten years, there remain several underlying tensions and challenges. There are several issues in linking climate change and rights, such as attribution and causality of climate change. More fundamentally, critical approaches argue that human rights are narrow and individualistic. These critiques are analysed in section 2, however, the challenge for human rights (in particular the right to water) in the context of climate change is to reframe and to be informed by an understanding of hydro-climatic

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<sup>141</sup> Ryan Holifield, ‘Environmental Justice and Political Ecology’ in Tom Perreault and Gavin Bridge (eds), *The Routledge Handbook of Political Ecology* (Routledge 2015).

<sup>142</sup> For a scientific understanding of the linkages, see: BE Jimenez Cisneros and others, ‘Freshwater Resources’ in CB Field and others (eds), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, vol 1 (2014).

justice. Through analysing the HRTW from such a framework, we can begin to tease apart the many processes that drive injustices and begin to think of new ways to expand, reframe, and reform the HRTW.

## 2.1 Constructing a Hydro-Climatic Justice Framework

Water and climate justice have developed from the literature and activism around environmental justice. Environmental justice is the intellectual and political base that water and climate justice lie upon, and hence is of importance in developing the ‘hydro-climatic’ justice framework outlined here. The concept of environmental justice is multifaceted and utilized by academics, activists and practitioners in many fields. Early literature on environmental justice came from the USA, analyzing issues of race, class and industrial production.<sup>143</sup> But others also highlighted its roots in struggles in the Global South.<sup>144</sup> In this chapter, the work of three prominent environmental justice scholars - Keuhn<sup>145</sup>, Schlosberg<sup>146</sup> and Walker<sup>147</sup> - are drawn upon in categorizing a framework of hydro-climatic justice.

The starting point is Walker’s three elements of environmental justice. Walker outlines that framings of environmental justice are concerned with:

- (i) normative claims about justice or *how things ought to be*;
- (ii) claims outlining evidence or *how things are*, and
- (iii) claims about process or *why things are how they are* (which the normative to the evidence).

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<sup>143</sup> For example: Robert D Bullard, ‘Race and Environmental Justice in the United States’ (1993) 18 Yale Journal of International Law 319; Susan L Cutter, ‘Race, Class and Environmental Justice’ (1995) 19 Progress in Human Geography 111.

<sup>144</sup> Ramachandra Guha and Juan Martínez Alier, *Varieties of Environmentalism: Essays North and South* (Earthscan Publications 1997).

<sup>145</sup> Robert R Kuehn, ‘A Taxonomy of Environmental Justice’ (2000) 30 Environmental Law Reporter 10681.

<sup>146</sup> In particular: David Schlosberg, ‘Reconceiving Environmental Justice: Global Movements And Political Theories’ (2004) 13 Environmental Politics 517; David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford University Press 2007); David Schlosberg and Lisette B Collins, ‘From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice’ (2014) 5 Wiley Interdisciplinary Reviews: Climate Change 359.

<sup>147</sup> Gordon P Walker, *Environmental Justice* (Routledge 2012).



These three elements are interrelated and critical to claims of justice. The first element describes theories of justice (such as distributive justice) that outline claims of ‘how things ought to be’ in the world. The second element, evidences the injustice, demonstrating how a situation gives rise to socio-ecological harm or inequality. This chapter does not provide any further explanation of evidence. In this thesis, evidence of water and climate injustices are provided in Chapter One (that provided a global and national overview of climate and water stress) and Chapter Five and Six, that detail injustices in the case study sites. Finally, the third element concerns process or *why things are how they are*. Process is an integral aspect of hydro-climatic justice and its connection to rights and law. To understand injustices, we must interrogate the role of law in society and its interactions with social, political, economic and ecological processes. To do this, this chapter discusses the role of political ecology as an analytical and theoretical framework to examine hydro-climatic injustices.

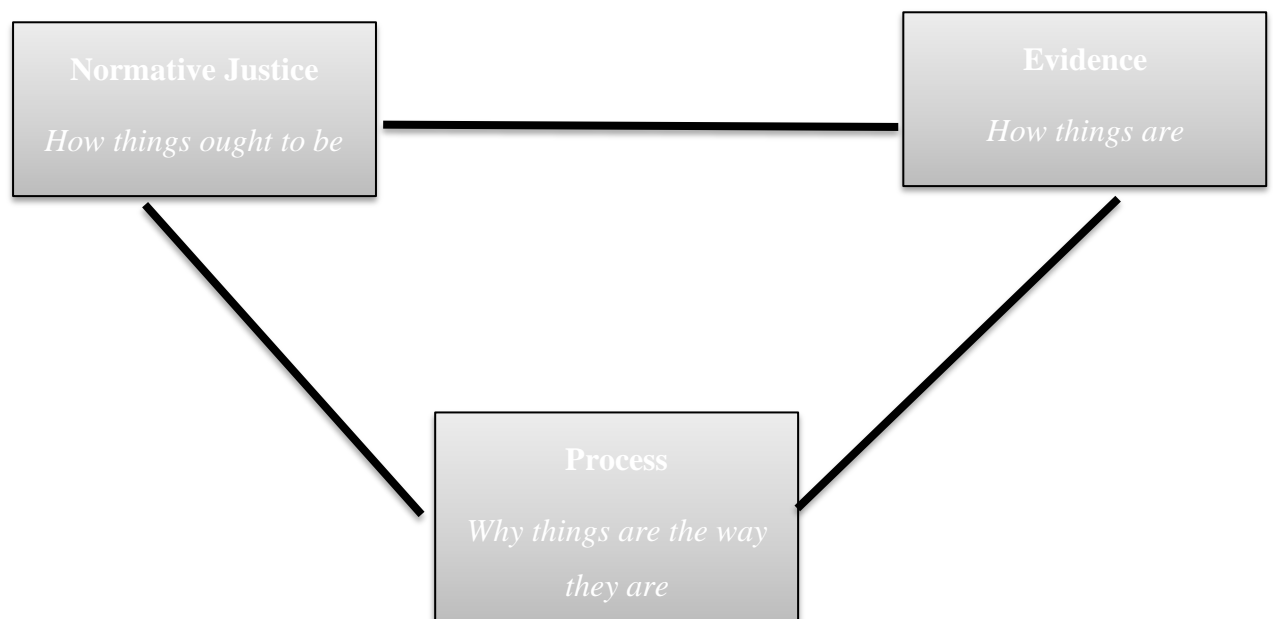


Figure 2: Three elements of environmental justice claim making.  
Source: Gordon P Walker, *Environmental Justice* (Routledge 2012) 40.

### 2.1.1 Normative Claims of Justice

As stated, the first element, *how things ought to be*, is about normative claims of justice. In this chapter, a four-part categorisation of normative justice is used.<sup>148</sup> These are distributive justice, procedural justice, corrective justice, and recognition. These categories are useful to observe and identify injustices, as well as make claims for justice.

#### 2.1.1.1 Distributive Justice

A consistent feature of environmental justice definitions is the presence of distributive justice. Distributional theories of climate justice are concerned with the just distribution of climate risks vis-à-vis the causes of climate change. For instance, the argument that developing countries do not have the same burdens to act against climate change as developed countries due to development status, historical responsibility and per capita emissions.<sup>149</sup> Furthermore, recent distributional justice scholarship considers developing per capita systems of emissions sharing<sup>150</sup>, or other mechanisms for how future ‘just’ distributions of carbon budgets can be formulated<sup>151</sup>. Beyond the mitigation burden, distributive climate justice has also been a basis for the distribution of the costs of adaptation and loss and damage from climate change.

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<sup>148</sup> This categorisation is adapted from the Robert Keuhn’s four-party categorisation of justice. However, Keuhn’s fourth category ‘social justice’ is not used here. Keuhn’s conception of social justice has several overlaps with Schlosberg’s idea of ‘recognition’, that is the fourth category used here, and the idea of explanations of ‘why’ injustice occurs through examining structural processes. Here, a political ecology framework is instead used to examine these explanations of structural injustice. Schlosberg’s idea of recognition, and political ecology framework provide a richer analytical toolbox to draw upon here, and thus builds upon Keuhn’s formulation of social justice, that he himself at the time termed “nebulous”. See: Kuehn (n 145); Schlosberg, ‘Reconceiving Environmental Justice’ (n 146).

<sup>149</sup> Sunita Narain and Anil Agarwal, *Global Warming in an Unequal World: A Case of Environmental Colonialism* (Centre for Science and Environment 1991).

<sup>150</sup> Peter Singer, *One World Now: The Ethics of Globalization* (rev edn, Yale University Press 2016).

<sup>151</sup> Catriona McKinnon, ‘Climate Justice in a Carbon Budget’ (2015) 133 *Climatic Change* 375; Olga Alcaraz and others, ‘Distributing the Global Carbon Budget with Climate Justice Criteria’ (2018) 149 *Climatic Change* 131.

The distribution of water has also been an essential part of water justice discourses. Distributive justice as a normative underpinning for inter-sectoral allocation of water can be an important way to thwart conflicts over water, for instance.<sup>152</sup> One tenant of this form of justice can be to ensure that there is a minimum amount of distributional equity, for example, through providing disadvantaged groups with a minimum level of allocated water.<sup>153</sup> Distributional equity claims may also extend to ‘ecological’ or ‘non-human’ water uses, such as recognising environmental flows, or the provision of water for livestock.<sup>154</sup> However, such claims are more often made to maintain the integrity of the source of the water body rather than because the water body has a distributive claim.

Integral to understanding distributive justice from an environmental and climate context is the idea of intergenerational justice.<sup>155</sup> The basic premise of intergenerational justice is simply a duty upon every generation to pass the earth on in at least as good condition as we received it in.<sup>156</sup> In other words, distribution of planetary ‘resources’ crosses generational boundaries, as the overuse by one generation affects distribution to future generations.

There is a direct link here to the concept of rights, being a right of (current) and future generations to demand this and a correlating duty to uphold this.<sup>157</sup> The concept of intergenerational justice is based on the notion that the earth is not ‘owned’

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<sup>152</sup> Philippe Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (Oxford University Press 2009) 206; Philippe Cullet, Lovleen Bhullar and Sujith Koonan, ‘Regulating the Interactions Between Climate Change and Groundwater: Lessons From India’ (2017) 42 *Water International* 646.

<sup>153</sup> John M Whiteley, Helen Ingram and Richard Warren Perry (eds), ‘Water and Equity in a Changing Climate’, *Water, Place, and Equity* (The MIT Press 2008) 16.

<sup>154</sup> Forum for Policy Dialogue on Water Conflicts in India, ‘Water Entitlements and Allocations for Basic Needs, Environment, Livelihoods and Socio-Cultural Needs: A Framework for Preventing and Managing Water Conflicts’.

<sup>155</sup> Burns Weston, ‘Climate Change and Intergenerational Justice: Foundational Reflections’ (2008) 9 *Vermont Journal of Environmental Law* 375; Edith Brown Weiss, ‘In Fairness to Future Generations and Sustainable Development’ (1992) 8 *American University International Law Review* 19.

<sup>156</sup> Weiss (n 155) 21; Whiteley, Ingram and Perry (n 153) 28.

<sup>157</sup> Weston (n 155) 380.

by any particular generation, and there is a duty of ‘no harm’ that means that one generation should not misuse the planet. ‘No harm’ does not, however, mean that we must leave the planet in a pristine state. Humans are continuously in the process of using resources and producing new socio-ecological environments. Accordingly, intergenerational justice advocates must devise different schemes to account for ‘how much’ of a footprint on the planet is legitimate. For instance, Brown Weiss puts forward three principles being conservation of options, quality, and access to planetary resources.<sup>158</sup> Page argues that we need to preserve the planet to enable future persons to retain “the same substantive freedoms to be healthy, well-fed, and well clothed that their ancestors possessed”.<sup>159</sup> However, critical questions remain of how these limits (of planetary use) are defined, how particular schemes, policies, actions within the principles of intergenerational justice benefit or disadvantage, different actors within and between generations.<sup>160</sup>

#### 2.1.1.2 *Procedural Justice*

Second, procedure is an important aspect of justice. Procedural justice is about fair processes in decision making, as opposed to only considering the outcome of the decision.<sup>161</sup> It is recognised widely as an important aspect of environmental justice. For example, articulations of environmental justice by states often focus on procedural justice, such as through principles of public participation, access to environmental information, and formal equality.<sup>162</sup> The issues have important

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<sup>158</sup> Weiss (n 155) 22–23.

<sup>159</sup> Edward Page, *Climate Change, Justice and Future Generations* (Edward Elgar 2006) 70.

<sup>160</sup> Tim Forsyth, ‘Climate Justice Is Not Just Ice’ (2014) 54 *Geoforum* 230, 232.

<sup>161</sup> Kuehn (n 145) 10688.

<sup>162</sup> See for example: US Environmental Protection Agency, ‘Environmental Justice’ (*US EPA*, 2014) <<https://www.epa.gov/environmentaljustice>> accessed 22 March 2020; Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters 1998 447, article 1.

overlaps with human rights law and have become particularly relevant in environmental law through environmental impact assessments.<sup>163</sup>

However, procedural justice is more than ‘process’. There are substantive aspects of how these processes are carried out that are important. Participation, for instance, needs to pay adequate attention to the consideration of the relative vulnerabilities, cultural considerations and other contextual factors. Questions of procedural justice have been central to both climate and water justice claims. For example, in India participatory watershed management has become a popular form of climate change adaptation. However, studies have shown that participatory projects can end up produced injustices based upon exclusion and failing to account for historically embedded inequities, taking into account inequalities between ‘participants.’<sup>164</sup> The links between procedure and other forms of justice are important. ‘Fair’ decision making procedures are a pre-condition for other forms of justice (such as distributive justice). Moreover, procedural justice (in the form of access to remedies) is often a necessity for corrective justice, or to ensure recognition (discussed below).

#### 2.1.1.3 *Corrective Justice*

Corrective justice is an important part of environmental justice and not surprisingly, often cited by legal commentators regarding issues of justice. For example, in relation to climate justice, the basic premise is to hold historic polluters need to account. Burkett introduces the notion of ‘climate reparations’, based upon an effort to assess the harm of past greenhouse gas emissions from major polluters and

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<sup>163</sup> Sumudu Anopama Atapattu, ‘Justice for Small Island Nations: Intersections of Equity, Human Rights, and Environmental Justice’ in Randall Abate (ed), *Climate justice: case studies in global and regional governance challenges* (Environmental Law Institute 2016) 308.

<sup>164</sup> Amita Baviskar, ‘The Dream Machine: The Model Development Project and the Remaking of the State’ in Amita Baviskar (ed), *Waterscapes: The Cultural Politics of a Natural Resource* (Permanent Black 2007); Saurabh Gupta, *Politics of Water Conservation Delivering Development in Rural Rajasthan, India* (Springer International Publishing 2016); Chandni Singh, ‘Is Participatory Watershed Development Building Local Adaptive Capacity? Findings from a Case Study in Rajasthan, India’ (2018) 25 *Environmental Development* 43.

use that as a basis to transfer resources to the climate-vulnerable.<sup>165</sup> Corrective justice approaches are a normative underpinning for climate litigation strategies that seek to hold historic polluters, such as fossil fuel companies to account, as well as efforts to build ‘loss and damage’ mechanisms in international forums. Corrective justice is also a facet of water justice. Though not on the same global scale, corrective justices claims arise often in cases of water pollution, where victims seek compensation from polluting entities.

#### *2.1.1.4 Recognition*

Finally, environmental injustices can occur through a lack of recognition of individuals or communities from institutional subordination or delegitimising cultural views.<sup>166</sup> This final category of normative forms of justice has its roots in social justice literature. Fraser, identifies that social justice issues require ‘both’ distribution and recognition and that neither alone is sufficient.<sup>167</sup> For example, she cites how gender injustice is both about the unequal division of labour along gender lines, as well as the ‘misrecognition’ of women due to institutionalized androcentrism.<sup>168</sup> She points out that questions of social justice thus must address both the distributional and recognition challenges. Drawing on Fraser, among others, Schlosberg brings the idea of ‘recognition’ as a central element of environmental and climate justice.<sup>169</sup>

Recognition is important for both climate and water issues. Cultural considerations, for example, have become a vital aspect of climate adaptation projects. Misrecognition of cultural dimensions are evidenced to lead to ‘mal-adaptative’ results.<sup>170</sup> That is, adaptation actions have been unsuccessful where recognition of

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<sup>165</sup> Maxine Burkett, ‘Climate Reparations’ (2009) 10 Melbourne Journal of International Law 1, 14.

<sup>166</sup> Schlosberg, ‘Reconceiving Environmental Justice’ (n 146).

<sup>167</sup> Nancy Fraser, ‘Social Justice in the Age of Identity Politics: Redistribution, Recognition, and Participation’ (Tanner Lectures on Human Values, Stanford University, 30 April - 2 May 1996).

<sup>168</sup> *ibid* 17.

<sup>169</sup> Schlosberg, ‘Reconceiving Environmental Justice’ (n 146).

<sup>170</sup> See for example: W Neil Adger and others, ‘Are There Social Limits to Adaptation to Climate Change?’ (2009) 93 Climatic Change 335; W Neil Adger and others, ‘Cultural Dimensions of Climate

gender, race, class, caste, cultural values or other factors are not included.

Recognising gendered divisions of labour, gender roles and gendered vulnerability have been important facets in framing a gender perspective to climate justice.<sup>171</sup> In relation to water, particularly in South Asia, the recognition of caste and gender are integral from a justice perspective. Zwarteveen, for example, identifies the masculinities in water governance in South Asia and how these impact policy and the implementation of policy.<sup>172</sup> Others have examined the lack of participation of lower caste communities in water related activities.<sup>173</sup>

Recognition is a core aspect of justice, such that justice cannot be dispensed through such providing distribution, correction of procedure.<sup>174</sup> For instance, a policy purporting fair distribution of water to indigenous communities, without also recognising their cultural values of water, or facilitating participation processes without making these culturally appropriate are ultimately inadequate. Justice is required not just to tackle unjust distribution or a lack of recognition by themselves, but to understand how these two are tied together and are produced and reproduced in political and social processes.<sup>175</sup>

### 2.1.2 *Process: from 'how things should be' to 'why things are how they are'*

The above sections have explained normative forms of justice and injustice. But, as explained earlier, it is also vital to understand *why* injustices occur. This thesis uses a political ecology frame to examine questions of water and climate justice. As

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Change Impacts and Adaptation' (2013) 3 Nature Climate Change 112; Thoko Kaime (ed), *International Climate Change Law and Policy: Cultural Legitimacy in Adaptation and Mitigation* (Routledge 2016).

<sup>171</sup> Geraldine Terry, 'No Climate Justice without Gender Justice: An Overview of the Issues' (2009) 17 Gender and Development 5.

<sup>172</sup> Margreet Zwarteveen, 'Questioning Masculinities in Water' in Mihir Shah and PS Vijayshankar (eds), *Water: growing understanding, emerging perspectives* (Orient BlackSwan 2016).

<sup>173</sup> Singh, 'Is Participatory Watershed Development Building Local Adaptive Capacity? Findings from a Case Study in Rajasthan, India' (n 164).

<sup>174</sup> Schlosberg, 'Reconceiving Environmental Justice' (n 146) 528.

<sup>175</sup> *ibid.*

Robbins remarks, “political ecology stories are stories of justice and injustice”.<sup>176</sup> Political ecology is a powerful tool to explain the ‘production’ of injustices. For example, in examining procedural injustice, political ecology provides a rich literature that demonstrates ‘how’ participatory mechanisms have often been a top-down mechanism that continues to exclude marginalised communities and can in fact reinforce the position of powerful groups.<sup>177</sup> Often, the work is grounded in fieldwork, exploring different processes that come together and explain differentiated outcomes. This approach thus enables analysis to go beyond just stating (or evidencing) an injustice, but analysing why that injustice occurs.<sup>178</sup>

#### 2.1.2.1 *Understanding process using Political Ecology: climate change and the hydro-social cycle*

Political ecologists have a long history of examining and climate issues. In recent years, political ecologists examining water (in)justices have paid particularly close attention the co-constitution of water injustices through social, technological, ecological and political processes.<sup>179</sup> An important analytical contribution has been the ‘hydro-social cycle’ (in contrast to the hydrological cycle) to illustrate how water is a socio-ecological process, and water (and water injustices) cannot be seen separate

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<sup>176</sup> Paul Robbins, *Political Ecology: A Critical Introduction* (2nd edn, Wiley Blackwell 2012) 87.

<sup>177</sup> Frances Cleaver, ‘Paradoxes of Participation: Questioning Participatory Approaches to Development’ (1999) 11 *Journal of International Development* 597; David Mosse, *The Rule of Water: Statecraft, Ecology, and Collective Action in South India* (Oxford University Press 2003); Uma Kothari, ‘The Case for Participation as Tyranny’ in Bill Cook and Uma Kothari (eds), *Participation: the New Tyranny* (Zed Books 2001).

<sup>178</sup> Walker (n 147) 71.

<sup>179</sup> See for example: Maria Kaika, ‘The Political Ecology of Water Scarcity: The 1989-1991 Athenian Drought’ in Nikolas C Heynen, Maria Kaika and Erik Swyngedouw (eds), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism* (Routledge 2006); Jessica Budds, ‘Whose Scarcity?: The Hydrosocial Cycle and the Changing Waterscape of La Ligua River Basin, Chile’ in Michael K Goodman, Maxwell T Boykoff and Kyle T Evered (eds), *Contentious Geographies: Environment, Meaning, Scale* (Ashgate 2008); Farhana Sultana, ‘Water, Technology, and Development: Transformations of Development Technonatures in Changing Waterscapes’ (2013) 31 *Environment and Planning D: Society and Space* 337; Rutgerd Boelens and others, ‘Hydrosocial Territories: A Political Ecology Perspective’ (2016) 41 *Water International* 1.



from social processes across space and time.<sup>180</sup> As Swyngedouw states, “there is a close correlation between the transformations of, and in, the hydrological cycle at local, regional and global levels on the one hand and relations of social, political, economic and cultural power on the other”.<sup>181</sup> Water flows through landscapes and dams, between embankments, in drains, is bored through pumps, falls upon cities and villages, connects places, spaces and people.<sup>182</sup> These interactions, between the material physical properties of water, technologies around water, and humans have a profound impact on how water is distributed, altered, polluted, and so on. Moreover, social relations, economic relations, and other relationships, often prescribed through law and policy, play an important part in this ‘hydro-social’ terrain.

The emphasis for the ‘hydro-social cycle’ is the cyclicity of water, as it travels through different domains, and changes in use, management, and socio-political organisation. Likewise, the term ‘waterscape’ has been used to describe these intertwined relations.<sup>183</sup> Similar to viewing a landscape, in a waterscape “hardly any river basin, hydrological cycle, or water flow has not been subjected to some form of human intervention or use; not a single form of social change can be understood without simultaneously addressing and understanding the transformations of and in the hydrological process”.<sup>184</sup> Such a waterscape is an “outcome of a process of production in which both nature and society are fused together in a way that renders them inseparable”.<sup>185</sup>

Utilising this analytical frame, political ecologists have demonstrated how water injustices occur, exposing and disentangling various interacting processes. For

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<sup>180</sup> Jamie Linton and Jessica Budds, ‘The Hydrosocial Cycle: Defining and Mobilizing a Relational-Dialectical Approach to Water’ (2014) 57 *Geoforum* 170.

<sup>181</sup> Erik Swyngedouw, ‘The Political Economy and Political Ecology of the Hydro-Social Cycle’ [2009] *Journal of Contemporary Water Research and Education* 56, 56.

<sup>182</sup> Boelens and others (n 179) 3.

<sup>183</sup> Erik Swyngedouw, ‘Modernity and Hybridity: Nature, Regeneracionismo, and the Production of the Spanish Waterscape, 1890–1930’ (1999) 89 *Annals of the Association of American Geographers* 443.

<sup>184</sup> *ibid* 444.

<sup>185</sup> *ibid* 461.

example, Kaika, examines the droughts in Athens in the 1990s.<sup>186</sup> She argues that droughts were not primarily the direct outcome of a prolonged dry period (or purely a lack of rain) but instead of the interactions between the available water resources and transformations in its use through economic, political and cultural water uses.<sup>187</sup> However, the state's policy fixes were based upon a discourse of 'naturalised' physical water scarcity in the region. In other words, the rainfall deficit was mobilised to signify water scarcity and justify large hydro projects. Little attention was paid to other (social and ecological) factors that in fact impeded water access.

Others have drawn attention to technology. Loftus, for example, demonstrates the role of a water technology (water meter) and how the water meter has become a source of power and dominance over the lives of the poor in South Africa.<sup>188</sup> From a justice perspective, his analyses demonstrates how injustices are produced and reproduced through processes of neoliberal economics (and the desire for water cost-recovery), and technological fetishism (around the meter) that manifest in everyday injustices that people.

Political ecologists have also looked at the role of law and regulation. Mustafa explores the role of powerful local elite and government actors in mediating how water is shared and sustained in Pakistan.<sup>189</sup> He pays close attention how the operation of local water law is affected by its interactions with geographical processes, historic social relations, meteorological factors, and a number of other socio-ecological processes. For example, the practice of cutting water canals (to take water), or allowing water to flow through canals, and the regulation of these practices were driven by power relations between local actors and the state bureaucracy, as well as other factors like physical geography and geology of the region. Mustafa carefully traces how laws and regulations work on the ground, what action was permitted or

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<sup>186</sup> Kaika (n 179).

<sup>187</sup> Maria Kaika, 'Constructing Scarcity and Sensationalising Water Politics: 170 Days That Shook Athens' (2003) 35 *Antipode* 919, 954.

<sup>188</sup> Alex Loftus, 'Reification and the Dictatorship of the Water Meter' (2006) 38 *Antipode* 1023.

<sup>189</sup> Daanish Mustafa, *Water Resource Management in a Vulnerable World: The Hydro-Hazardscapes of Climate Change* (IBTauris 2013) 47–68.

sanctioned, drawing attention to how these ‘non-legal’ processes affect the operation of the law.<sup>190</sup> Accordingly, what he shows is how justice and injustices around water are produced by a number of different processes that interact.

Climate processes are infused into this hydro-social cycle, allowing us to examine the production and reproduction of hydro-climatic (in)justice.<sup>191</sup> Taylor provides an illustrative example of how climate processes interact in the hydro-social cycle.<sup>192</sup> He examines the impacts of droughts in the Deccan Plateau of India. First, a lack of rain creates a general ‘surface water’ scarcity (rivers and ponds). Increasingly, with water shortages in rivers and ponds, communities begin to extract as much groundwater as they can, to meet their water needs. However, such extraction is not equal. Those with more land and capital are able to drill deeper. The extraction undermines the production of fodder for cattle (a major source of livelihood for small farmers), which otherwise utilises this groundwater. Distressed small farmers, who are unable to draw the groundwater they used to, are forced to sell cattle to wealthier merchants and landowners. Moreover, these elite groups are often the same ones that have extracted groundwater. As Taylor shows, those who have access to capital can purchase the technology and gain significant power through not only depleting sources of their neighbours but also selling water at a high cost. Thus, in this messy terrain of water scarcity, he examines how the question of whether one does or does not have water, is blurred between hydrological, climatic or social processes. Moreover, he shows how, in his example, a drought can become an extremely profitable and exploitative situation for certain groups. The misallocation of water

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<sup>190</sup> Mustafa (n 189).

<sup>191</sup> Surprisingly, climate processes have not been infused into the hydro-social framework too often to date. Some recent examples, include: Megan Mills-Novoa and others, ‘Bringing the Hydrosocial Cycle into Climate Change Adaptation Planning: Lessons from Two Andean Mountain Water Towers’ (2017) 107 *Annals of the American Association of Geographers* 393; BG Mark and others, ‘Glacier Loss and Hydro-Social Risks in the Peruvian Andes’ (2017) 159 *Global and Planetary Change* 61. Furthermore, Danish Mustafa put forward the idea of the ‘hydro-hazardscape’ that comes close to creating a hydro-social framework that accounts for climate concerns. See: Mustafa (n 189).

<sup>192</sup> Marcus Taylor, *The Political Ecology of Climate Change Adaptation: Livelihoods, Agrarian Change and the Conflicts of Development* (Routledge 2014).

sees inequitable relations around water and creates significant injustice, rights-based issues around who has and who does not have access to water.

Taylor's work is an example of 'political ecology of climate adaptation', where he examines how various processes interact and produce and reproduce (climate and water) injustices. Similarly, climate adaptation policies interact with localised power structures, perpetuating injustices. For example, Sovacool shows how in climate adaptation projects in Bangladesh, injustices at different levels occur through processes of 'enclosure, exclusion, encroachment and entrenchment'.<sup>193</sup> He demonstrates how, for instance, exclusionary practices occur from a national to local scale. This ranges from national level planning (who is included in planning adaptation), to local scale where, for example, after a disaster and flooding, local elites can exploit the situation to encroach, appropriate land and entrench these power structures. While this demonstrates a procedural injustice and misrecognition, Sovacool's political ecology approach draws in different explanatory processes (such as the political economy at different scales) to bring attention to *how* exactly the injustices are perpetuated.<sup>194</sup>

Water and climate justice are thus a manifestation of these broader relations and processes.<sup>195</sup> Processes of capital accumulation, transformations of water and technology and so on. The interactions between these processes ultimately decide questions of who does or does not have access to water. This analytical lens means, in examine questions of water and climate justice, we first examine power geometries, that structure highly differentiated environments of access to water in the context of climate change. Through tracing these processes, we can then begin to engage with

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<sup>193</sup> Benjamin K Sovacool, 'Bamboo Beating Bandits: Conflict, Inequality, and Vulnerability in the Political Ecology of Climate Change Adaptation in Bangladesh' (2018) 102 *World Development* 183.

<sup>194</sup> *ibid* 192.

<sup>195</sup> Erik Swyngedouw, *Social Power and the Urbanisation of Waters: Flows of Power* (Oxford University Press 2004).

what a particular actor does or address laws that underpin rights issues.<sup>196</sup> Thus, this frame allows us to understand ‘why’ hydro-climatic injustices occur, going beyond simply identifying an injustice or making a claim for justice.

#### 2.1.2.2 *Repoliticising water and climate justice*

Accordingly, one of the main contributions of process-based explanations of injustice are to reveal the contested and political nature of water and climate issues. A hydro-social framework reveals how social processes, such as governance and economics, intertwine with hydrological and climate processes, in the production of uneven water relations. This is significant, because water and climate problems have often been framed as ‘natural’ problems, that require purely technical and depoliticised solutions.<sup>197</sup> However, such framings tend to overlook the contestations, conflicts and power relations that mediate alterations and flows of water that are ultimately responsible for how climate and water injustices are produced. For instance, through reallocating, commodifying, overexploiting water, different actors benefit at the expense of others, from both a social and environmental viewpoint.<sup>198</sup>

Hydro-climatic issues have often been framed (and solutions have thus come from) a naturalised physical water scarcity paradigm. Naturalised framings often produce policy solutions based on better management, or technological solutions. For example, putting forward ideas of ‘stakeholder management’. As political ecologists have pointed out, these framings and solutions overlook the very political and social nature of the contestations around water. Managerial framings have been criticised for

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<sup>196</sup> Swyngedouw, ‘The Political Economy and Political Ecology of the Hydro-Social Cycle’ (n 181) 57.

<sup>197</sup> Margreet Z Zwarteveen and Rutgerd Boelens, ‘Defining, Researching and Struggling for Water Justice: Some Conceptual Building Blocks for Research and Action’ (2014) 39 *Water International* 143, 144; Leila M Harris and others, ‘Water Justice: Key Concepts, Debates and Research Agendas’ in Ryan Holifield, Jayajit Chakraborty and Gordon Walker (eds), *Handbook of Environmental Justice* (1st edn, Routledge 2018).

<sup>198</sup> Zwarteveen and Boelens (n 197); Dik Roth and others, ‘Water Governance as a Question of Justice: Politics, Rights, and Representation’ in Rutgerd Boelens, Tom Perreault and Jeroen Vos (eds), *Water Justice* (1st edn, Cambridge University Press 2018).

depoliticising questions around water (and also climate).<sup>199</sup> Zwarteveen and Boelens state that “the act of relegating phenomena to the realms of nature -naturalisation – is a well-known and much-used strategy to depoliticise water problems, placing contentious questions of distribution outside of the domain of public debate”.<sup>200</sup>

A hydro-social framework, on the other hand, ‘re-politicises’ water and climate, to tease out how “specific combinations and entanglements of environmental and sociopolitical relationships produce (re) distributions of water”.<sup>201</sup> Indeed, one of the major tasks of the justice movements have been to politicised abstract discussions about the environment. As Baxi states, the necessary task of climate justice is to “rethink and politicise (even polarise) the previously depoliticised”.<sup>202</sup> He further states that “rethinking and re-politicisation” are the “twin overriding imperatives” of both climate justice and social change.<sup>203</sup> Water justice, like climate justice, has been a way to challenge the reductionism of water policies.<sup>204</sup> It has become increasingly clear that water scarcity and inadequate access to drinking water around the world is rarely related to a lack of absolute freshwater but rather “rooted in power, poverty and inequality”.<sup>205</sup> Thus, to examine water and climate issues, it is necessary to attention

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<sup>199</sup> Erik Swyngedouw, ‘Depoliticized Environments: The End of Nature, Climate Change and the Post-Political Condition’ (2011) 69 *Royal Institute of Philosophy Supplement* 253; Erik Swyngedouw, ‘UN Water Report 2012: Depoliticizing Water’ (2013) 44 *Development and Change* 823; Karin Aggestam, ‘Depoliticisation, Water, and Environmental Peacebuilding’ in Ashok Swain and Joakim Öjendal (eds), *Routledge Handbook of Environmental Conflict and Peacebuilding* (Routledge 2018).

<sup>200</sup> Zwarteveen and Boelens (n 197) 149.

<sup>201</sup> Roth and others (n 198) 48.

<sup>202</sup> Baxi, ‘Towards a Climate Change Justice Theory?’ (n 86) 8.

<sup>203</sup> *ibid.* The imperative of politicising the climate change debate beyond depoliticised consensus based decision making and science has also been made by others. See: Forsyth (n 160); Erik Swyngedouw, ‘Climate Change as Post-Political and Post-Democratic Populism’ (2009).

<sup>204</sup> See for example the dispersed justice struggles in Bolivia, India and the USA: A Dwinell and M Olivera, ‘The Water Is Ours Damn It! Water Commoning in Bolivia’ (2014) 49 *Community Development Journal* i44; CR Bijoy, ‘Kerala’s Plachimada Struggle: A Narrative on Water and Governance Rights’ (2006) 41 *Economic and Political Weekly* 4332; Drew Philp, ‘No Water for Poor People: The Nine Americans Who Risked Jail to Seek Justice’ *The Guardian* (London, 20 July 2017) <<https://www.theguardian.com/us-news/2017/jul/20/detroit-water-shutoffs-marian-kramer-bill-wylie-kellermann>> accessed 10 December 2018.

<sup>205</sup> United Nations Development Programme (ed), *Human Development Report 2006 - Beyond Scarcity: Power, Poverty and the Global Water Crisis* (Palgrave Macmillian 2006) 2.

to the many local to global socio-ecological processes that affect water and climate.<sup>206</sup> A hydro-social framework provides an appropriate analytical lens to examine ‘how’ injustices arise.

### *2.1.2.3 Colonialism, Neoliberalism, Inequality and Hydro-Climatic Processes*

The hydro-social framework outlined above involves an examination of multi-scalar processes across time and space. In other words, an examination of both historical, contemporary, transnational, global, local and glocal processes that interact in producing the water and climate issues. As will be outline in the chapters that follow, processes of colonialism, neoliberalism and inequality (particularly around gender and caste) are integral in the issues discussed. It is worth outlining briefly here how these processes interact in producing justice and injustice, and the continuities and discontinuities between these processes.

First, the role of colonialism in water and climate can be seen in the legal frameworks that govern water and climate issues. This is both reflected in the discourses and ideas that underpin the contemporary law - such as the separation between land and water, groundwater and surface water, and ultimately nature and society – and water legislation that exists continuously from the 19<sup>th</sup> century.<sup>207</sup> The knowledge underpinnings of the law, and the law itself, as will be shown, have a profound impact on relations between different institutions, communities and ecologies that ultimately mediate questions such as who has or does not have water.

Second, in recent decades, the role of neoliberalism in water and climate governance has been highlighted by a number of authors.<sup>208</sup> Neoliberal approaches to

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<sup>206</sup> Gupta, ‘Sharing Our Water: Inclusive Development and Global Water Justice in the Anthropocene’ (n 38) 261.

<sup>207</sup> These points are expanded upon in Chapter 4, below.

<sup>208</sup> See for example: Jessica Budds, ‘Power, Nature and Neoliberalism: The Political Ecology of Water in Chile’ (2004) 25 *Singapore Journal of Tropical Geography* 322; Trevor Birkenholtz, ‘Full-Cost Recovery: Producing Differentiated Water Collection Practices and Responses to Centralized Water

water build upon the legacies of colonialism. For example, colonial riparian law instituted a binary separation between land and water, that was linked to improving revenue collection and as a method of accumulation for imperial governments.<sup>209</sup> The governance of water on the basis of ‘productivity’, ‘efficiency’ and in the interests of capital plays a central part in both colonialism and neoliberalism.

Third, these processes come together and interact with other processes, such as gender and caste relations, to reproduce justice and injustice. For example, rules around access and use of groundwater, based on colonial laws, provide large amount of relational power to landowners. Economic growth, urbanization, and other processes related to neoliberalism can increase demand for water, particularly in a climate context. This creates the conditions for unchecked exploitation for water sources based on such laws, enriching the possibilities of hydro-climatic injustice through the depletion of shared water sources by landowners. These processes (re) produce injustices, entrenching gender and caste hierarchies in different ways, and create new relations. Ultimately, as will be shown, as these processes interact, it is difficult to clearly delineate (without looking at the specifics) the exact continuities and discontinuities between these different processes.

Moreover, political ecologists would argue that a hydrosocial approach demands the opposite. Social, ecological, political and economic processes (across space and time) should be seen in a dialectical, fluid manner, such that as these processes interact, they produce new relations, contexts that we can study.<sup>210</sup> The process-based lens demands that we understand why injustices occur through studying these processes through the contextual and material realities on the ground.

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Networks in Jaipur, India’ (2010) 42 *Environment and Planning A* 2238; Kathleen O’Reilly and Richa Dhanju, ‘Hybrid Drinking Water Governance: Community Participation and Ongoing Neoliberal Reforms in Rural Rajasthan, India’ (2012) 43 *Geoforum* 623.

<sup>209</sup> Amites Mukhopadhyay, *Living with Disasters: Communities and Development in the Indian Sundarbans* (Cambridge University Press 2016) 73–93.

<sup>210</sup> Linton and Budds (n 180) 173.



Hence, later case studies analyse water and climate justice manifesting through many different multi scalar processes that interact, to different degrees in various situations. Indeed, the point here is to examine how these processes interact (in particular the role of law and policy) in producing and (re)producing justice and rights issues or, in showing us ‘why things are the way things are’.

### *2.1.3 Unique Challenges of Water and Climate Justice*

The above discussion has often referred to environmental, climate and water justice inter-changeably. However, it is important to recognize that climate and water justice have distinct and critical challenges, such that they have developed into sub-fields of justice themselves.

Theories of climate justice often begin from the seemingly obvious assertion that climate change was not produced, nor will it materialise, equally amongst humans and non-humans. Climate injustices occur at the global, national and local level. However, the causes, effects, and agents are dispersed and fragmented, making it difficult to pin down propagators and victims in traditional justice narratives. The unique and existential threats of climate change have been a source of concern for those thinking about theories of climate justice. For example, Gardiner argues that climate change represents the ‘perfect moral storm’, with the convergence of several independently ‘bad’ storms that present substantial obstacles to our ability to make the hard choices to address climate change.<sup>211</sup> These storms are the genuinely global character of climate change, the intergenerational nature and climate change occurring in a socio-political context where there is not robust theory and adequate institutional settings to deal with the challenges.

For Gardiner, several factors make the challenges of climate change unique and mean we continue to make ‘bad decisions’. These include:

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<sup>211</sup> Stephen M Gardiner, ‘A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption’ (2006) 15 *Environmental Values* 397.

- i. Dispersed causes and effects of climate change - emissions from one geographical location can be felt in a completely different location and also over different time periods. In addition, the skewed vulnerabilities that see more impoverished communities at the most risk.
- ii. Fragmentation of agency – No single agent or activity is responsible for the causes of climate change. Instead, the source of climate change is located deep in the infrastructure of current human civilisation, including the very essence of the fossil fuel led economic growth system that currently dominates society.
- iii. Institutional and Scientific Gaps - Lack of global governance to properly enforce sanctions across scale and scientific uncertainty about the precise magnitude and distribution of effects, particularly at the national level.

For Gardiner, these challenges mean that we continue to make the wrong decisions around climate change, and it leads to a level of moral corruption. For example, no particular generation, country or social group fully experience the scale of impacts of its activities. So, it chooses not to take action. This also reflects the slow, uneven progress of climate change at both international and domestic level (including dealing with fundamental question of distributive justice) and the historic difficulty for corrective forms of justice to breakthrough into adequate strategies for litigation.<sup>212</sup>

While other environmental injustices, such as biodiversity loss, or pollution, also exhibit many of these characteristics for Gardiner, what is distinct in that the sheer scale of climate change and the inherent nature of some of these factors make it stand out as the ‘perfect moral storm’. Indeed, the scale of climate change has been pointed out as a key distinguishing factor between climate justice and environmental justice.<sup>213</sup> Climate justice requires attention to both (in)justice between states, and

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<sup>212</sup> Albeit in recent years there has been a surge of climate litigation. See: Geetanjali Ganguly, Joana Setzer and Veerle Heyvaert, ‘If at First You Don’t Succeed: Suing Corporations for Climate Change’ (2018) 38 Oxford Journal of Legal Studies 841.

<sup>213</sup> Walker (n 147) 184–185.

(in)justice inside states. Unlike the more localised concerns of environmental justice literature, climate justice must always pay attention to these dual factors.

There are also distinct challenges associated with water. While water injustices are local in effect (such as pollution, contamination, and scarcity), local and global scales are intrinsically linked. The most apparent link is the impacts of changes in the hydrological cycle. The hydrological cycle is ‘global’ but connects local water use to global processes. Cumulative local water uses impact the global water cycle. Furthermore, local issues that affect water use and flows are embedded in global and local socio-ecological processes (such as infrastructure, or polluting activities that are embedded in global investment and activity).<sup>214</sup>

The materiality of water as a ‘flowing’ resource is also an important factor. For instance, Bakker has demonstrated how water’s fluidity can prevent it from being receptive to particular economic and governance structures, such as being able to be in complete private control.<sup>215</sup> The material structure, composition and agency of water can also affect how it transforms when reacting with other elements and processes, such as toxins or greenhouse gases. For example, the interactions between climate processes and ground and surface water are not the same, as there are often significant lag times between how subsurface water reacts to climate variability.<sup>216</sup> Thus, the material elements of water can also be a factor in how water and climate interact, how water is governed, and who has or does not have water (distributional questions).

The distinct challenges of climate change and water justices stemming from their unique global, intergenerational aspects, the bio-physical materiality of water, as well as the idea of the Anthropocene which challenges our traditional understandings

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<sup>214</sup> Gupta, ‘Sharing Our Water: Inclusive Development and Global Water Justice in the Anthropocene’ (n 38).

<sup>215</sup> Karen J Bakker, *An Uncooperative Commodity: Privatizing Water in England and Wales* (Oxford University Press 2004).

<sup>216</sup> Zhuoheng Chen, Stephen E Grasby and Kirk G Osadetz, ‘Relation Between Climate Variability and Groundwater Levels in the Upper Carbonate Aquifer, Southern Manitoba, Canada’ (2004) 290 *Journal of Hydrology* 43.

of separation between ‘nature’ and ‘society’ force us to examine ‘how’ injustices occur.

#### *2.1.4 Summary*

To summarise, this chapter has shown that a justice framework can be broken into three different parts. First, claims about normative justice, or how things ought to be. We can use these theories to both make claims for different configurations and relations around water and climate, and also identify where injustices occur. Second, evidence of justice and injustice, which was not discussed in depth here but will be demonstrated in later chapters. For the purposes of this thesis, this would be evidence of HRTW issues in a climate context. Third, and crucially, understanding why injustices occur through process-based claims of justice. As outlined above, a political ecology framework is used here to argue that the materialisation of hydro-climatic (in)justices are relational, contextual and involve multiple socio-ecological processes that come together. This ‘hydro-social’ approach to justice, seeks to examine and analyse the processes that give rise of (in)justices. Later chapters will use this understanding to elaborate on how legal and political processes intertwine with climatic and hydrological processes in the production of (in)justices that affect the HRTW. In other words, later chapters seek to reveal what processes drive unequal, unjust, control over and access to water in the context of climate change? Furthermore, how are these processes contingent and intertwined? Insights from political ecology, described above, have illustrated how close attention to the hydro-social cycle can allow us to examine the power geometries that produce unjust and unequal socio-ecological environments. Accordingly, through such an understanding of hydro-social justice, we can begin to understand why, in the context of a HRTW, the rights of some are realised over the rights of others.

## **2.2 Human Rights and Hydro-Climatic Justice**

Building upon the framework of justice outlined above, as well as the broader discussions on the Anthropocene, this section discusses the emerging inquiries into the linkages between climate change and human rights. Human rights are a vital tool

in mediating hydro-climatic justice. However, there are several critical issues with a narrow conceptualisation of human rights, including in how human rights and climate change are often linked. These conceptual difficulties can prevent rights from achieving a subversive role against the production of hydro-climatic injustices. Despite these critiques, the practical and political possibilities of human rights mean that they need to remain a relevant tool for justice. The HRTW, it is argued, needs to be informed by an understanding of how unequal and unjust hydro-social environments are produced. In other words, informed by an understanding of hydro-climatic justice.

### *2.2.1 Human rights and climate change: emergent approaches*

As the introductory chapter discussed, the links between human rights and climate change have become an emerging topic of focus over the last ten years.<sup>217</sup> At an international institutional level, the linkages have been recognised through a series of resolutions from the UN Human Rights Council, as well as preambular recognition in the Paris Agreement.<sup>218</sup> ‘Human rights and climate change’ has been a recent field of inquiry. However, at a broader level “human rights and the environment” has a longer history dating back to the Stockholm Declaration in 1972.<sup>219</sup> The two can be said to be complementary, as climate change can be considered a subset to the broader question of the linkages between human rights and the environment.

Given the historic role of human rights in battles against racial, gender, economic and social injustice, the role of human rights in the context of climate change seems an obvious one. Adelman argues that framing climate change through a

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<sup>217</sup> See for example: Stephen Humphreys (ed), *Human Rights and Climate Change* (Cambridge University Press 2010); Edward Cameron, ‘Human Rights and Climate Change: Moving from an Intrinsic to an Instrumental Approach’ (2010) 38 Georgia Journal of International and Comparative Law 673; Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95); Cameron and Limon (n 96); John H Knox, ‘Human Rights Principles and Climate Change’ in Cinnamon Carlarne, Kevin Gray and Richard Tarasofsky (eds), *The Oxford Handbook of International Climate Change Law* (Oxford University Press 2015). But also beyond scholarship:

<sup>218</sup> UNFCCC (n 97) preamble.

<sup>219</sup> UN General Assembly, ‘United Nations Conference on the Human Environment’ (1972) A/CONF.48/14/Rev.1.

rights-based lens links the rise of emissions to issues of human dignity, equality and suffering, thus arousing empathy and compassion for an issue where impacts are not readily apparent and human agency can be obscured.<sup>220</sup> Human rights are also seen as having a ‘trumping effect’ that elevates it compare to other concerns that are not human rights.<sup>221</sup> The juridical elevation of human rights sees them as ideal tools to challenge the worst effect so climate change.<sup>222</sup> Furthermore, the moral powers of human rights can have a ‘compliance pull’ for other laws (such as water and environmental laws).<sup>223</sup> Accordingly, the dominant juridical and public discourse on rights is a reason for its used in climate change litigation suits around the world.<sup>224</sup>

More broadly, the link between human rights and climate change has been considered in different ways. First, research has examined how human rights are affected by climate change, both in terms of legal violations and more general linkages. Early contributions provided a general framework for how human rights and climate change are linked. For example, drawing connections to how climate change jeopardises human rights; analysing the impacts of climate change on human rights generally; endorsing a human rights framework for evaluating who pays for climate actions; as well as how human rights regimes can fill the gaps and challenged under (international) law to deal with climate change.<sup>225</sup> In terms of legal violations, analysis has focused on how the human rights regime (that imposes duties upon states) can be utilised to bring justice for climate harms (on individuals who are not citizens of the duty-bearing states).<sup>226</sup> There has also been a focus on how the

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<sup>220</sup> Sam Adelman, ‘Human Rights and Climate Change’ [2014] Legal Studies Research Paper Series (University of Warwick) 1, 5.

<sup>221</sup> Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44).

<sup>222</sup> *ibid.*

<sup>223</sup> Alexandre Charles Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff Publishers 2007) 38.

<sup>224</sup> Jacqueline Peel and Hari M Osofsky, ‘A Rights Turn in Climate Change Litigation?’ (2018) 7 *Transnational Environmental Law* 37.

<sup>225</sup> Caney (n 94); Humphreys, ‘Competing Claims: Human Rights and Climate Harms’ (n 94).

<sup>226</sup> Wewerinke-Singh (n 95) chs 2–7; Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 266–290.

different climate change and human rights regimes can complement each other.<sup>227</sup>

The literature has primarily focussed on the international level, because of the global nature of climate change.

Second, research has examined how human rights are important in designing and implementing climate change mitigation and adaptation actions. For instance, the Barro Blanco dam in Panama was built as a climate mitigation project under the Clean Development Mechanism. Its construction has had a significant and ongoing impact on indigenous population's rights to life, land and culture.<sup>228</sup> Research has examined how a rights-based approach can provide pathways to justice, although the struggle continues as the project nears completion.<sup>229</sup> Similarly, in relation to rights-based approaches to climate adaptation Christoplos and McGinn analyse the extent to which rights-based approaches have been integrated into climate change adaptation actions by NGOs working in Cambodia.<sup>230</sup> They argue that that such approaches have the potential to overcome the narrow technical approaches to adaptation that have become popular. At the same time, they recognise and illustrated how external rights-based approaches adopted by NGOs have been applied in a narrow and limited way, thus largely shying away from the transformative action that is needed. Here, commentators have drawn in justice arguments too. For instance, Schapper argues that "human rights can bridge the gap between normative climate justice claims and empirical climate justice practices".<sup>231</sup> Hall and Weiss argue that human rights law

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<sup>227</sup> See for example: Cameron and Limon (n 96); McInerney-Lankford, Darrow and Rajamani (n 96).

<sup>228</sup> Tracy Barnett, 'Panama Meeting on Human Rights, Environmental Issues Sows Hope and Disappointment' *Intercontinental Cry* (8 April 2017) <<https://intercontinentalcry.org/panama-meeting-human-rights-environmental-issues-sows-hope-disappointment/>> accessed 5 August 2019.

<sup>229</sup> Wolfgang Obergassel and others, 'Human Rights and the Clean Development Mechanism: Lessons Learned from Three Case Studies' (2017) 8 *Journal of Human Rights and the Environment* 51; Beatriz Felipe Pérez and others, 'Rethinking the Role of Development Banks in Climate Finance: Panama's Barro Blanco CDM Project and Human Rights' (2016) 12 *Law Environment and Development Journal* 1.

<sup>230</sup> Ian Christoplos and Colleen McGinn, 'Climate Change Adaptation from a Human Rights Perspective: Civil Society Experiences in Cambodia' (2016) 43 *Forum for Development Studies* 437.

<sup>231</sup> Schapper (n 99) 277.

has a central role in adaptation actions to avoid injustice that may cause an “adaptation apartheid”.<sup>232</sup>

Third, there has also been an interest in how to integrate climate considerations into specific rights, such as the right to water<sup>233</sup> or the right to food<sup>234</sup>. Darrow has carried out a comprehensive analysis of how climate change will impact the HRTW under international law. He outlines how the right to water can be integrated into international climate change policy.<sup>235</sup> However, relative to the literature on climate change and human rights at a general level, there have been fewer contributions related to specific human rights. Furthermore, the focus of the literature has also primarily been through international legal instruments.

Finally, there have also been critical interrogations of the relationship between human rights and climate change (as well as human rights and the environment more generally).<sup>236</sup> Such approaches are described more fully below, but in general draw attention to many of the assumptions around ‘humans’ that are embedded in human rights, as well as critique the anthropocentrism of human rights.

### 2.2.2 *Tensions and challenges*

While there has been growing optimism in linking human rights and climate change, developing these linkages has also been met with several underlying tensions and issues. International law and institutions are often the focus for commentators, and this produces its own unique problems. First, establishing a causal link between a

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<sup>232</sup> Margaux J Hall and David C Weiss, ‘Avoiding Adaptation Apartheid: Climate Change Adaptation and Human Rights Law’ (2012) 37 Yale Journal of International Law 309.

<sup>233</sup> Laura Westra, ‘Climate Change and the Human Right to Water’ (2010) 1 Journal of Human Rights and the Environment 161; Darrow (n 98).

<sup>234</sup> Chelsea Smith, David Elliott and Susan H Bragdon, *Realizing the Right to Food in an Era of Climate Change* (Quaker United Nations Office 2015).

<sup>235</sup> Darrow (n 98).

<sup>236</sup> See for example: Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44); Kotzé, ‘The Anthropocene, Earth System Vulnerability and Socio-Ecological Injustice in an Age of Human Rights’ (n 101); Gear, ‘Towards “Climate Justice”?’ (n 101); Gear, ‘Human Rights and the Environment: A Tale of Ambivalence and Hope’ (n 101); Grant, Kotzé and Morrow (n 101); Adelman, ‘Rethinking Human Rights: The Impact of Climate Change on the Dominant Discourse’ (n 101).



rights violation and an environmental condition or circumstance in question.<sup>237</sup> In other words, how does one prove that a violation of a right to water that may be caused by drought is also linked to climate change? Second, accounting for multiple contributing factors to a ‘climate event’.<sup>238</sup> Third, allocating responsibility for future impacts.<sup>239</sup> Fourth, the issue of an absent duty holder when it comes to climate change rights violations. Human rights generally require a duty holder and rights holder of every right. Duty-holders are generally the State or government, and rights-holders are generally citizens of that particular country. Connecting an individual whose rights have been breached to a state-party duty holder is a problem when the causes and effects are global, fragmented and dispersed. For example, as Atapattu outlines, how does one connect citizens of the Maldives, who currently face inundation and breach of multiple human rights due to climate-induced sea-level rise with a duty-holder to those affected rights? In such a situation, it is not fair to hold the state of Maldives liable, as its contributions to climate change have been negligible. To say there are no duty-bearers signifies that the rights violations against the Maldives citizens have no remedy.<sup>240</sup> Connecting duty-bearers with rights-holders has been one of the major issues to date in linking human rights to climate change. Many of these issues are related to climate justice ‘moral storms’ that were discussed earlier in this chapter.

Critical approaches have also drawn attention to fundamental problems that arise in how human rights and law have been conceptualised and operationalised in the last thirty years and whether these can be overcome to challenge the fundamental process that produce hydro-climatic injustices. There are deeply embedded assumptions in law, which are constructed through relational hierarchies, which produce injustices. Gear has argued that the ‘subject’ and ‘object’ of human rights

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<sup>237</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 71.

<sup>238</sup> *ibid.*

<sup>239</sup> *ibid.*

<sup>240</sup> *ibid* 87.

need to be examined.<sup>241</sup> She argues that the ‘subject’ of human rights (and law more generally) has been the disembodied, rationalistic, individual (European/Northern) male. This ‘imagined individual’ that is embedded in law and our wider socio-economic structures has profound implications in the ordering of society. The law privileges a conception of this specific legal subject. Whereas the presumed object is often the ‘environment’, or indigenous peoples.

Ordering of society in this way has been a major contributor to the fossil-fuel led, and corporatist growth patterns of accumulation, that have led to climate crisis and its unevenness in material impacts today. In other words, these antecedent foundations of law mean that human rights don’t adequately challenge the production and reproduction of hydro-climatic injustices. Gear’s critique provides space to critically reflect on human rights themselves, in relation to the environment, rather than take it for granted that ‘more human rights’ are necessarily positive.

Similarly, human rights are criticised for being mouldable to unjust economic paradigms and accordingly insufficient in the battles against environmentally destructive activities, privatisation of natural resources, or enclosures of commons.<sup>242</sup> Rights have been criticised for being compliant with, rather than subversive too, market mechanisms and privatisation of common-pool resources. The HRTW can be narrowly construed to allow for privatisation of water. Courts can also use it as a justification to reallocate water from one community to another while causing a great deal of environmental harm.<sup>243</sup> Baxi notes that in the context of human rights and climate justice, there is “no human right to planetary loyalty”.<sup>244</sup> Human rights, in a capitalist society, ultimately are based around the notions of freedom of property and

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<sup>241</sup> Gear, ‘Towards “Climate Justice”?’ (n 101).

<sup>242</sup> Karen Bakker, ‘Commons Versus Commodities: Debating the Human Right to Water’ [2012] *The Right to Water: Politics, Governance and Social Struggles* 19; Upendra Baxi, *The Future of Human Rights* (2nd ed, Oxford University Press 2006); Baxi, ‘Towards a Climate Change Justice Theory?’ (n 86); Balakrishnan Rajagopal, ‘Pro-Human Rights but Anti-Poor? A Critical Evaluation of the Indian Supreme Court from a Social Movement Perspective’ (2007) 8 *Human Rights Review* 157.

<sup>243</sup> *Narmada Bachao Andolan v Union of India and Others* (2000) 10 SCC 664 (Supreme Court of India).

<sup>244</sup> Baxi, ‘Towards a Climate Change Justice Theory?’ (n 86) 22.

freedom of transaction/contract, that allow the perpetuation of hydro-climatic injustice through entailing a lawful and justified ‘right to harm’ others.

Commentators have also considered the implications of the Anthropocene. For example, Kotze notes that legal institutions have been complicit in causing the Anthropocene.<sup>245</sup> Like Gear, he argues that human rights have been centred upon a human-centred understanding, based on a particular conception of the human. He draws on vulnerability theory to demonstrate that, in the context of the Anthropocene and earth-systems breakdowns, we must ‘decentre’ the human from law (and rights) frameworks, and work with an understanding of the vulnerability of the entire living order (that we currently face). Such an understanding reflects that humans are intrinsically tied to the rest of non-human natures, as well as how vulnerability is now a shared condition between all humans and non-human natures (albeit with radical unevenness based on geographic location, class, caste, gender, race and so on).

Kotze argues elsewhere that rights must shift towards incorporating more eco-centric perspectives, and ultimately find a way to balance safeguarding basic needs (such as water) while “respecting the limits of Earth’s life-supporting systems and the ecological integrity of other species”.<sup>246</sup> Human rights, in their current form, are overly anthropocentric and individualistic to deliver the structural changes required. Inherent in this, as Kotze puts it, is the challenge that human rights have to effectively address questions of justice between humans, generations, and between humans and ‘the environment’.<sup>247</sup> Eco-centric commentators have always emphasised that human rights approach to the environment or climate change, would only perpetuate the values and ethics that have enforced the environmental conditions of today.<sup>248</sup> For example, Handl has critiqued the human rights approaches to environmental issues as

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<sup>245</sup> Kotzé, ‘The Anthropocene, Earth System Vulnerability and Socio-Ecological Injustice in an Age of Human Rights’ (n 101).

<sup>246</sup> Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44) 265.

<sup>247</sup> *ibid* 269.

<sup>248</sup> Bosselmann (n 90).

showing ‘species chauvinism’ due to what is seen as their inherent anthropocentrism.<sup>249</sup> In relation to the HRTW, for instance, it may be that fulfilling the HRTW (for humans) will ironically further degrade the hydrological systems upon which the fulfilment of the right depends on.<sup>250</sup> This species centric approach to right means that the right to water, or the right to environment, centres the human as the dominant subject and other concerns (such as the living rights of non-human natures) are seen as secondary.

### 2.2.3 *The enduring appeal and resilience of rights*

While many of the contributions referred to above are critical of human rights, human rights continue to have an enduring appeal. Even among critical scholars, rather than trying to dismiss human rights, there is a focus on trying to “reimagine” and “reclaim” human rights from narrow, individualistic, and anthropocentric approaches that have been complicit in many ways to the production of the climate crisis.<sup>251</sup> Kotze argues that while human rights has never had to grapple with issues as existential as the fundamental transformations requires in the context of climate change (and the Anthropocene), its allure lies, among other things, in its “ability to transform society, the many socio-political, legal and economic institutions and the manner in which society interacts inter se with the environment”.<sup>252</sup>

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<sup>249</sup> Gunther Handl, ‘Human Rights and Protection of the Environment: A Mildly Revisionist View’ in Antônio Augusto Cançado Trindade (ed), *Human Rights, Sustainable Development and the Environment* (Inter-American Institute of Human Rights 1995) <<https://archivos.juridicas.unam.mx/www/bjv/libros/4/1985/14.pdf>>.

<sup>250</sup> Neimanis (n 138) 8. Also Louis Kotze who has argued that fulfilling the Constitutional Court was correct in South Africa to not rule in favour of a fixed quantitative right to water, to protect socio-ecological systems and inter-generational justice. See: Louis J Kotzé, ‘Phiri, the Plight of the Poor and the Perils of Climate Change: Time to Rethink Environmental and Socio-Economic Rights in South Africa?’ (2010) 1 *Journal of Human Rights and the Environment* 135. And also the comments Woodhouse in this exchange, where he argues against expanding the right to water to livelihood due to scarcity concerns: Melvin Woodhouse and Malcolm Langford, ‘There Is No Human Right to Water for Livelihoods’ (2009) 28 *Waterlines* 5.

<sup>251</sup> Grant, Kotzé and Morrow (n 101).

<sup>252</sup> Kotzé, ‘Human Rights and the Environment in the Anthropocene’ (n 44) 271.

There are several sound reasons to defend its continued application and validity. First, there are pragmatic and practical reasons to continue to work within the rights framework. Such a view has been expressed by Loftus, who although critical of the way the right to water has been expressed to date, maintains its practical use to advance political claims for justice.<sup>253</sup> One of the primary reasons for this is that human rights already enjoy widespread acceptance and understanding in society. Therefore, there is a ‘common sense’ argument to stick with rights, and in many ways, its subversive potential lies in its widespread understanding. Loftus and Angel argue for a “with-against-beyond” approach to human rights, illustrating that there should be critical resistance as well as engagement with rights.<sup>254</sup> Those examining rights in the context of climate change have expressed similar views.<sup>255</sup> Weston and Bollier point out that human rights have particular importance because they have a trumping effect on other legal obligations.<sup>256</sup>

Second, socio-economic rights have played a critical role in struggles for basic resources and human development. Large scale litigation challenges on the right to food or the right to sanitation have delivered successes that may not have been available otherwise.<sup>257</sup> In the regions like South Asia, the lack of developed administrative and quasi-judicial institutions, the lack of effective remedies under environmental legislation, un-responsive government agencies and the relaxation of

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<sup>253</sup> Alex Loftus, ‘Water (in)Security: Securing the Right to Water’ (2015) 181 *Geographical Journal* 350; James Angel and Alex Loftus, ‘With-Against-and-Beyond the Human Right to Water’ (2017) 86 *Geoforum* 206.

<sup>254</sup> Angel and Loftus (n 253).

<sup>255</sup> Anna Grear, ‘Questioning the Constructs: “the Environment” and “(Human) Rights”’ (2016) 7 *Journal of Human Rights and the Environment* 165.

<sup>256</sup> Burns Weston and David Bollier, *Green Governance: Ecological Survival, Human Rights and the Law of the Commons* (Cambridge University Press 2014).

<sup>257</sup> On the Right to Food litigation in India, see: Shareen Hertel, ‘Hungry for Justice: Social Mobilization on the Right to Food in India: Social Mobilization on the Right to Food in India’ (2015) 46 *Development and Change* 72; Lauren Birchfield and Jessica Corsi, ‘Between Starvation and Globalisation: Realising the Right to Food in India’ (2010) 31 *Michigan Journal of International Law* 691. On sanitation: V Venkatesan, ‘Raising a Stink’ *Frontline* (16 May 2014) <<https://frontline.thehindu.com/social-issues/social-justice/raising-a-stink/article5955778.ece>> accessed 22 April 2019.

standing rules to bring public interest litigation as reasons why environmental rights enjoy a prominent platform (particularly through rights-based litigation).<sup>258</sup> Despite the challenges of linking human rights and climate change because of issues such as causality and attribution, it remains an important litigation strategy to push further rights development. In recent years, there has been a mini surge of litigation on human rights and climate change with cases such as *Urgenda v. Government of the Netherlands*<sup>259</sup> and *Leghari v. Federation of Pakistan*<sup>260</sup>. These cases come despite initial setbacks on this type of litigation ten years ago, illustrating an enduring appeal of rights-based litigation on climate change.

Third, human rights have transformed in their nature, scope, and content over the last 50 years. Human rights are often said to have gone through ‘three generations’. The first generation of civil and political rights, a second-generation bringing in socio-economic concerns leading to the right to water, food, and an adequate standard of living, and a third generation of ‘solidarity rights’ that solidarity or collective rights, the right to a healthy environment, or the right to self-determination.

Their content too can be defined and redefined. O’Connell has argued that while there is merit in the critique of rights narrowing radical change, when one looks closely at the practices of social movements and human agency in rights-based activism, it does not necessarily prove a narrowing of claims.<sup>261</sup> For example, he finds that the “Right2Water” struggle in Ireland mobilised both a human rights struggle and a broader campaign against austerity, neo-liberalism and structural causes of injustice.<sup>262</sup> Similarly, Bakker who has been sceptical about the HRTW elsewhere,

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<sup>258</sup> Jona Razzaque, ‘Linking Human Rights, Development, and Environment: Experiences from Litigation in South Asia’ (2007) 18 Fordham Environmental Law Review 587.

<sup>259</sup> *Urgenda Foundation v Kingdom of Netherlands* (C/09/456689 / HA ZA 13-1396, District Court of the Hague, 2015).

<sup>260</sup> *Ashgar Leghari v Federation of Pakistan* (W.P. No. 25501/2015, Lahore High Court Green Bench).

<sup>261</sup> Paul O’Connell, ‘Human Rights: Contesting the Displacement Thesis’ (2018) 69 Northern Ireland Legal Quarterly 19.

<sup>262</sup> *ibid* 14–18.

has still maintained that rights remains necessary and a crucially useful tactic in water justice activism.<sup>263</sup> Like O’Connell, she believes that rights can also be recaptured and interpreted more broadly. Rajagopal, while critiquing the western human rights paradigm, argues that unlocking the transformative or counter-hegemonic potential of the human rights discourse requires to focus on the voices and perspectives of the historically marginalised.<sup>264</sup>

Moreover, for environmental rights, recent insights from post-humanism, new materialism, including the rapid technological advancements, the Anthropocene, and climate change have also seen the advocacy of new forms of rights that transcend old distinctions between ‘human’ and ‘non-human’ natures.<sup>265</sup> These insights have called for a certain level of decentring of the ‘human’ from human rights. In many ways, this reflects a further ‘generation’ of human rights that is developing that once again reflects new challenges and new analytical insights.

#### 2.2.4 *Human rights, climate change and justice*

The relationship of human rights, and specifically the HRTW, in this thesis is examined through the lens of hydro-climatic justice discussed earlier. As described earlier, this involves, justice involves three elements:

- (i) normative claims about justice or *how things ought to be*;
- (ii) claims outlining evidence or *how things are*, and
- (iii) claims about process or *why things are how they are* (which the normative to the evidence).

First, the normative claims of justice, such as distributive justice and recognition, can be advocated through a rights-based claim making. For example, a

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<sup>263</sup> Bakker (n 242) 37–38.

<sup>264</sup> Balakrishnan Rajagopal, ‘The Role of Law in Counter-Hegemonic Globalization and Global Legal Pluralism: Lessons from the Narmada Valley Struggle in India’ (2005) 18 *Leiden Journal of International Law* 345.

<sup>265</sup> Neimanis (n 138); Gear, ‘Human Rights and the Environment: A Tale of Ambivalence and Hope’ (n 101) 241–242.

HRTW that advocates for greater participation (procedural justice) and includes recognition of water provision for different livelihood uses (distributive justice). Second, HRTW is often used to evidence injustices. Fact-finding reports are often the heart of human rights advocacy, outlining breaches of human rights.<sup>266</sup> Applying a human rights lens to the collection of evidence can reveal justice and injustice. Third, process-related claims can reveal why the HRTW is not realised. The hydro-social approach outlined earlier, pays attention to different processes that interact in the production and reproduction of injustices. This provides an analytical lens to examine how HRTW issues arise. For example, to examine why after a flood situation, certain actors are worse off than others. Or to examine social, ecological, legal, political processes that may compound the impacts of climate change, including reflectively examining the role of law and policy in (re) producing sites of injustice and rights issues.

### **2.3 Summary of Chapter**

A framework of hydro-climatic justice was outlined in this chapter. This framework is used in this thesis as a lens, to examine the right to water in the context of climate change. In conceptualising a framework of justice, it was argued that to examine issues of climate change and water, it is important to consider the intertwined processes that produce hydro-social injustices. Human rights and law play an important role in mediating how such processes interact, hence play an integral role in producing and sustaining hydro-social (in)justice.

This chapter also analysed the literature on human rights and climate change. This thesis will build on this literature through examining the right to water through a hydro-climatic justice framework. The relationship between human rights and climate change has seen a fast-emerging literature as well as policy interest. This literature

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<sup>266</sup> Alston and Knuckley state that fact finding is at the “heart of human rights advocacy” with three key goals: (1) ascertaining facts about alleged human rights abuses; (2) determining state responsibility and perhaps also individual responsibility for violations; (3) make recommendations as to reform and reparations. See: Philip Alston and Sarah Knuckley (eds), *The Transformation of Human Rights Fact-Finding* (Oxford University Press 2016) 3–5.



has examined this relationship in different ways; however, several tensions and challenges are present. A key challenge in the context of this research is how the relationship human rights, water, and climate issues are linked. The justice framework outlined in the first part of this chapter provides the approach taken in this thesis. One benefit of this approach is that, by teasing out the various processes that give rise to human rights challenges in a climate context, role of law (and various other processes) in both the production of human rights issues and how it may respond to these issues. This responds, at least in part, to some of the concerns raised by Kotze, Grear and others raise on the complicit nature of law (and rights) in the Anthropocene. Human rights have an enduring appeal because of their ability to act as ‘moral’ and ‘juridical’ trumps. Moreover, their scope and content are defined not just by policy makers, but also by voices for rights-holders, activists, and ‘the suffering’.<sup>267</sup> Once again, the justice framework outlined is relevant, as it provides scope to consider ways the HRTW can be transformed.

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<sup>267</sup> Upendra Baxi, ‘Voices of Suffering and the Future of Human Rights’ [1998] *Transnational Law & Contemporary Problems* 125.

# CHAPTER 3.

## Human Right to Water in the Context of Climate Change: Content, Scope and Linkages

### 3.1 Introduction

Over the last two decades, there has been an emerging discourse and legal recognition of the HRTW that has spanned different jurisdictions from international to domestic. The emergence of the rights-based development since the 1990s, severe water crisis and conflicts in many parts of the world, as well as the commercialisation of water have all contributed to this development. However, in part because of this multifaceted, disjointed and transnational rise of the HRTW, the right to water itself has come to mean “quite different things at different times and in different places”.<sup>268</sup>

The HRTW is recognised under international law as well as many domestic constitutions and laws. The legal status of the HRTW seems more certain than ever. However, despite this, globally, 29% or 2.1 billion people lack access to safe drink water services, meaning water at home, available, and safe.<sup>269</sup> Household use of water is a small fraction of overall water use but remains a daily issue in many parts of the world, leading to the conflicts and injustice explored in the previous chapter. Of course, recognition of human rights does not mean implementation and compliance. However, as Rodina explores in her work on South Africa, there is a broader issue of

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World Health Organisation and UNICEF, ‘Progress on Drinking Water, Sanitation and Hygiene’ (2017) <<https://washdata.org/report/jmp-2017-report-launch-version0>> accessed 24 November 2017.

<sup>268</sup> Farhana Sultana and Alex Loftus (eds), *The Right to Water: Politics, Governance and Social Struggles* (Earthscan 2012) 9.

<sup>269</sup> World Health Organisation and UNICEF, ‘Progress on Drinking Water, Sanitation and Hygiene’ (2017) <<https://washdata.org/report/jmp-2017-report-launch-version0>> accessed 24 November 2017.

state and policy institutions proclaiming successes in fulfilling the right to water, the official statistics showing high levels of water service delivery, with the ground reality of urban citizens in daily struggles to access potable water.<sup>270</sup>

Furthermore, actors can have contending interpretations of the HRTW. The definition of the HRTW by the state, as well as international organisations and professional NGOs, will often have the state as a central focal point for the delivery of the right to water.<sup>271</sup> On the other hand, for many social movements, the HRTW can be much broader with demands of greater democratic participation and control, and linkages to other rights such as food, housing, and environment. The definition adopted by most states and policymakers, however, has seen a narrowing of the right into purely bureaucratic and technical forms.

Accordingly, this chapter analyses the recognition of the HRTW, and its scope and contents as recognised under law and policy frameworks. It also analyses the linkages to other human rights and dimensions of the HRTW within the broader hydro-climatic justice framework. The chapter also illustrates the gaps and challenges in how the HRTW is currently framed. Importantly, the HRTW is linked to several other human rights and social and environmental dimensions. These will be analysed drawing on the justice framework discussed in Chapter Two. The broader linkages made here are essential in providing the scope and content of the right in an integrated and comprehensive way.

This chapter has two sections. The first section discusses the recognition of the HRTW in law and policy frameworks. The section draws attention to the linkages with climate change. Both domestic and international law and policy will be discussed herein, illustrating how the right has developed, as well as its widespread recognition.

Section two then analyses different dimensions of the HRTW in the context of hydro-climatic justice. The starting point is the multiple uses of water. As the

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<sup>270</sup> Rodina (n 75).

<sup>271</sup> Angel and Loftus (n 253) 206–207.

previous chapter outlined, analysing the HRTW through a hydro-climatic justice perspective entails recognising the role of different actors, geographies, processes and power structures and contextualising how these interact and operate in allocating water for different uses. This section, therefore, begins with looking at the different uses of water and how the HRTW recognises these uses. Section two then analyses specific issues related to water and climate change, including recognition of inequalities and power structures through gender and caste, the impact of economic and governance processes through privatisation, and the role of participation from a rights-based perspective. Finally, the extra-territorial elements of the HRTW are analysed, drawing attention to the multiple scales of how climate change materialises.

### **3.2 Recognition of the HRTW in the context of climate change**

Since the late 1970s, the HRTW has been articulated in international and domestic laws and policies.<sup>272</sup> In recent years, the HRTW has been increasingly invoked in Courts around the world, gaining recognition in Constitutions and legislation.<sup>273</sup> Jurisprudence on the HRTW has developed through international, regional and national laws and policies. All three levels are significant in discussing the right because the normative and juridical foundations of the right have often developed together.

In recent years, international law has provided clear recognition of the HRTW.<sup>274</sup> Furthermore, domestic laws have long recognised the right. In India, the HRTW has been recognised for nearly three decades, and the jurisprudence has developed in

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<sup>272</sup> UN Water Conference, 'Report of the UN Water Conference, Mara Del Plata 14-25 March 1977' (1977) E/CONF.70/29.

<sup>273</sup> Malcolm Langford and Anna FS Russell, 'Introduction: The Right to Water in Context' in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017) 4–6.

<sup>274</sup> UN Committee on Economic Social and Cultural Rights, 'General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant)' (2002) E/C.12/2002/11; Catarina de Albuquerque, 'Water and Sanitation Are Human Rights. Why Does It Matter?' in Laurence Boisson de Chazournes, Christina Leb and Mara Tignino (eds), *International Law and Freshwater: Multiple Challenges* (Edward Legar Publishing 2013).

a distinct way to the international rights context.<sup>275</sup> Birchfield and Coris note that India's human rights jurisprudence has shown confidence in its sovereignty to recognise human rights and develop these rights through its norms, rules and institutions.<sup>276</sup> Domestic rulings by the Supreme Court of India on the HRTW have also been cited by Courts in other countries in developing their human rights jurisprudence.<sup>277</sup> Indian Courts have also borrowed language from international law and policy norms, including other domestic courts. For example, the development of the public trust doctrine in India has referenced American jurisprudence.<sup>278</sup> A much-publicised decision handed down by the Uttarakhand High Court to grant rights to the Yamuna rights borrowed heavily from legal developments in New Zealand that same week.<sup>279</sup> Recognition of the human right to a healthy environment in India also developed with reference to international declarations such as the Stockholm declaration.<sup>280</sup> Thus, the development of the right has occurred through cross-pollination of human rights and environmental jurisprudence from different scales. Accordingly, this chapter discusses national, international and regional jurisprudence around the development of the HRTW in the context of climate change.

In considering the HRTW in the context of climate change, several other human rights are also relevant, most importantly, the human right to a healthy environment. The Right to a healthy environment has been recognised in India and several other countries.<sup>281</sup> The relevance of the human right to a healthy environment

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<sup>275</sup> *Subhash Kumar v State of Bihar & Ors* (n 68).

<sup>276</sup> Birchfield and Corsi (n 257).

<sup>277</sup> *Rabia Bhuiyan MP v Ministry of Local Government and Rural Development & Ors* (2007) 59 DLR (AD)

<sup>278</sup> Melissa K Scanlan, 'A Comparative Analysis of the Public Trust Doctrine for Managing Water in United States and India' in Alistair Rieu-Clarke, Andrew Allan and Sarah Hendry (eds), *Routledge Handbook of Water Law and Policy* (Routledge 2017) 30.

<sup>279</sup> *Mohd. Salim v State of Uttarakhand & others* (n 139).

<sup>280</sup> *RLEK Dehradun v State of UP* [1987] Supreme Court of India Order of Dec 18, 1986, 359 AIR [19]; *MCMehra v Union of India* [1988] AIR 1037 (Supreme Court of India) [4].

<sup>281</sup> For example: Constitution of South Africa 1996 Article 27. The right to a healthy environment has been explicitly incorporated in legislation in more than 100 countries. See: David R Boyd, 'Catalyst for

is that it can fulfil a role of bringing coherence and strengthening the application of other human rights, such as water, food, privacy, housing and sanitation, towards their inherent link to the environment in the context of climate change.<sup>282</sup> Indeed, many see the right to a healthy environment as an essential (though not sufficient) human rights tool in combating climate change.<sup>283</sup> However, to date, the right is not recognised under international law.

The HRTW is also intrinsically linked to the right to food, the right to livelihoods, as well as other rights such as health, life and housing. At the international level, the right to water has often been referred to alongside the right to food. For example, the Convention on the Rights of a Child that requires States parties to combat disease and malnutrition “through the provision of adequate nutritious foods and clean drinking water”.<sup>284</sup> Importantly, in much of the global South, the provision of water for growing food is tied to livelihoods. Small-scale and subsistence-level farming is a critically important function in the rural economy and rural livelihoods. Provision of water for such activity thus links to a broader window of rural development, poverty reduction, human dignity and rights to an adequate standard of living.<sup>285</sup> Thus, rights to water, food, and livelihoods (as well as the broader right to a healthy environment) need to be considered as interdependent. Apart from the conceptual linkages, from a legal standpoint, human rights are universal, interdependent and indivisible.<sup>286</sup> Human rights do not operate in a vacuum; they do naturally overlap in subject matter and application. Accordingly, these linkages will be analysed throughout this chapter.

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Change’ in John H Knox and Ramin Pejan (eds), *The Human Right to a Healthy Environment* (Cambridge University Press 2018) 18–23.

<sup>282</sup> Atapattu, ‘The Right to a Healthy Environment and Climate Change’ (n 100) 265.

<sup>283</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95); Rebecca Bratspies, ‘Do We Need a Human Right to a Healthy Environment?’ (2015) 13 Santa Clara Journal of International Law 31.

<sup>284</sup> Convention on the Rights of the Child 1989 Art. 24, para. 2.

<sup>285</sup> Horman Chitonge, *Beyond Parliament: Human Rights and the Politics of Social Change in the Global South* (Brill Nijhoff 2015) 7–11.

<sup>286</sup> UNGA, ‘Vienna Declaration and Programme of Action’ (1993) A/CONF.157/23 para 5.

### 3.2.1 Domestic law and the human Right to water: linkages to climate change

The HRTW is recognised under domestic law in a variety of ways. First, some countries have recognised the HRTW expressly in their constitutions.<sup>287</sup> Second, like in India, several countries have recognised the right through the Courts reading it into an existing human right in their constitution.<sup>288</sup> Third, in some countries, the right has not been recognised under constitutional law. However, specific legislation or policy has provided some recognition for the right. For example, in Sri Lanka, the National Policy on Drinking Water confirms access to water as an inalienable right of its people.<sup>289</sup> Finally, in some cases, sub-national governments have expressly recognised the HRTW. For example, the Legislative Assembly of the North West Territories in Canada declared that “all people have a fundamental human right to water that must be recognised nationally and internationally, including the development of appropriate institutional mechanisms to ensure that these rights are implemented.”<sup>290</sup> Table 2 below provides some further examples of how specific countries have recognised the right.

Table 2 Recognition of the Human Right to Water in Domestic Law

<b>Express Constitutional Recognition of the HRTW</b>	
Example Countries	Provisions
Kenya	Article 43 Every person has the right – (d) to clean and safe water in adequate quantities

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<sup>287</sup> For example: Constitution of the Plurinational State of Bolivia 2009 Art 16; Constitution of South Africa s 27.

<sup>288</sup> For example: Constitution of Colombia 1991 does not recognise the right to water explicitly, but it has been recognised under the right to environment, under article 79. see also: M Belén Olmos Giupponi and Martha C Paz, ‘The Implementation of the Human Right to Water in Argentina and Colombia’ (2015) 15 *Anuario Mexicano de Derecho Internacional* 323.

<sup>289</sup> Ministry of Water Supply & Drainage (Sri Lanka), ‘National Drinking Water Policy’ (2001) s 6 <[http://www.waterboard.lk/web/index.php?option=com\\_content&view=article&id=82:policies&catid=33:organization&Itemid=440&lang=en](http://www.waterboard.lk/web/index.php?option=com_content&view=article&id=82:policies&catid=33:organization&Itemid=440&lang=en)> accessed 8 March 2020.

<sup>290</sup> Northwest Territories, Legislative Assembly, “Motion 20-15(5): Right to Water” in *Hansard*, 15th Assembly, 5th Sess, Day 34 (5 March 2007) at 1168-69 (Hon Paul Delorey).

South Africa	Section 27 (1) Everyone has the right to have access to — (b) sufficient food and water
Bolivia	Article 16 I. Every person has the right to water and food.
<b>Judiciary reading HRTW into existing Constitutional Rights</b>	
Example Countries	Example Cases
India	In <i>Subash Kumar v State of Bihar</i> , AIR 1991 SC 420 (Supreme Court of India, Judgement of 9 January 1991), at para [7]:  “(…) The right to live is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution-free water and air for the full enjoyment of life. If anything endangers or impairs that quality of life in derogation of laws, a citizen has a right to have recourse to Article 32 of the Constitution for removing the pollution of water or air which may be determinantal to the quality of life (…).”
Colombia	Several cases in the Constitutional Court have recognised the human right to water as part of the broader “right to the environment” enshrined in Article 79.  For example, in Judgement No. T-244/1993 the Court stated:  “ <i>In constitutional matters, the guarantee of the right to life includes in its essential core, protection against any act that threatens that right immediately. And the threat, likewise, can be demonstrated with the imminence of the damage that can be caused to the lives of those who inhabit this path due to the lack of water, which is demonstrated in the process and has been recognized by the competent officials</i> ” (translation via Google Translate)
<b>Recognition through legislation or policy</b>	
Example Countries	Legislation or Policy
Angola	National Water Law 2002 (unofficial translation)  “Art. 9. - Principles of water management (1) Water management is governed by the following principles: a) The right of citizens and collective entities to water; (...) i) The complementarity of the water supply with the residual liquid sanitation;”
Sri Lanka	National Policy on Drinking Water 2007 “Water is a vital resource, indispensable to life, and essential for overall economic and social development of a country. In Sri Lanka, access to water is considered an inalienable right of its



	people...”
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In the Indian context, as mentioned, the Constitution does not expressly provide for a HRTW. However, Courts have recognised the right to water for several decades through reading it into Article 21, that guarantees a fundamental right to life.<sup>291</sup> The Courts in India were the first to give explicit recognition for the HRTW. In 1985, the Supreme Court of India recognised a Right to a Healthy Environment, which included “undue affection” of water, and the environment.<sup>292</sup> Then, in 1991, the Court stated that the right to life “is a fundamental right...and it includes the right of enjoyment of pollution-free water”.<sup>293</sup> The Courts have also derived the right from Article 47 of the Constitution, which outlines a duty of the State to raise the level of nutrition and standard of living and improve public health.<sup>294</sup>

Thus, the HRTW is recognised in the Indian legal framework. Importantly the links with the Right to a Healthy Environment are also expressly made by the judiciary. Arguably, this link provides a bridge for ecological concerns around the exploitation of water resources to be examined.

### 3.2.2 *Recognition under international and regional law*

International law has also recognised the HRTW. There is no express recognition under the two most comprehensive global human rights treaties, the International Convention on Civil and Political Rights (“ICCPR”) and the International Convention on Economic, Social and Cultural Rights (“ICESCR”). However, the HRTW was interpreted a part of the right to an adequate standard of

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<sup>291</sup> The right was recognised by the Kerala High Court in 1990, as part of the right to life (Article 21) (*Attakoya Thangal v Union of India* (1990) 1 KLT 580 (High Court of Kerala).) and by the Supreme Court in *Subhash Kumar v State of Bihar & Ors* (1991) 1 SCC 598.

<sup>292</sup> *Rural Litigation & Entitlement Kendra v State of Uttar Pradesh* [1985] AIR 652 (Supreme Court of India).

<sup>293</sup> *Subhash Kumar v . State of Bihar & Ors* (n 24).

<sup>294</sup> *Hamid Khan v State of MP* [1997] AIR 191 (Madhya Pradesh High Court).

living and the right to food (Article 11 and 12 of the ICESCR) by the Committee on Economic, Social and Cultural Rights (“Committee”) in adopting General Comment 15.<sup>295</sup> The Committee acts as the most authoritative source of law for interpreting the obligations for State parties under the treaty, although general comments are not binding.<sup>296</sup> Beyond this, several human rights treaties have also recognised the HRTW in a specific form. For example, the Convention on the Rights of a Child, includes a right to water as part of a broader right to the highest attainable standard of health.<sup>297</sup> The UN General Assembly and the Human Rights Council has also adopted resolutions firmly recognising the HRTW.<sup>298</sup> Although there are some objections, it is now increasingly recognised that a HRTW is an international human right, through a combination of the different instruments and widespread state practice and acceptance.

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The links between the HRTW and climate change are also expressed through international treaty mechanisms. The Committee on the Elimination of Discrimination against Women, under CEDAW, has expressly recognised the importance of guaranteeing the HRTW during disasters.<sup>300</sup> Similarly, as Chapter One outlined, the Human Rights Council has, on several occasions, emphasised the linkages between

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<sup>295</sup> UN Committee on Economic Social and Cultural Rights (n 274).

<sup>296</sup> There is some debate about the legal weight and importance of the General Comment, see for example: Stephen Tully, ‘A Human Right to Access Water? A Critique of General Comment No. 15’ (2005) 23 *Netherlands Quarterly of Human Rights* 35. However, General Comments are generally seen as authoritative guides on implementation on particular obligations under their respective treaties, having legal weight. See: Malcolm Langford, ‘Ambition That Overleaps Itself? A Response to Stephen Tully’s Critique to the General Comment on the Right to Water’ (2006) 24 *Netherlands Quarterly of Human Rights* 433; Kerstin Mechlem, ‘Treaty Bodies and the Interpretation of Human Rights’ [2009] *Vanderbilt Journal of Transnational Law* 905.

<sup>297</sup> Convention on the Rights of the Child article 24.

<sup>298</sup> UNGA, ‘The Human Right to Water and Sanitation’ (n 64); UN Human Rights Council, ‘Report of the Human Rights Council on Its Fifteenth Session’ (2010) A/HRC/15/60.

<sup>299</sup> Catarina de Albuquerque, ‘Water and Sanitation Are Human Rights. Why Does It Matter?’ in Laurence Boisson de Chazournes, Christina Leb and Mara Tignino (eds), *International Law and Freshwater: Multiple Challenges* (Edward Legar Publishing 2013) 57.

<sup>300</sup> CEDAW, ‘Statement of the CEDAW Committee on Gender and Climate Change’ (2009) CEDAW 44th Session para 72.

human rights and climate change.<sup>301</sup> The HRC has emphasised that “the adverse effects of climate change have a range of implications...for the enjoyment of...the right to safe drinking water and sanitation”.<sup>302</sup>

### **3.3 Analysing the Scope and Contents of the HRTW in the context of Hydro-Climatic Justice**

The discussion above has illustrated the widespread recognition of the HRTW. The more contentious issues remain regarding the scope and content of the right and what this means considering the complex challenges of climate change. Accordingly, Sultana and Loftus note that the HRTW means “quite different things at different times and in different places”.<sup>303</sup> While there has been content provided at the international level, discussed further below, this has not always translated into domestic action. As Cullet notes concerning India, several practical and conceptual gaps exist in the legal framework for the HRTW.<sup>304</sup> Practical and conceptual gaps also exist in relation to the links between the HRTW and climate change, both at the international and domestic level. For example, Darrow has pointed out that the HRTW has largely been missing from integration into climate change planning, including in adaptation plans submitted at the international level.<sup>305</sup>

As the previous chapter outlined, access to water is a contested process between different uses and groups. Climate processes not only disrupt current hydrological assumptions but materialise and produce rights issues through the many interacting social and ecological dimensions. This section illustrates the extent to

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<sup>301</sup> A list of resolution on ‘human rights and climate change’ by the HRC is available on: OHCHR, ‘HRC Resolutions on Human Rights and Climate Change’ (*Office of the United Nations High Commissioner for Human Rights*, 2019) <<https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRCAction.aspx>> accessed 6 April 2019.

<sup>302</sup> UN Human Rights Council, ‘Resolution 29/15 - Human Rights and Climate Change’ (2015) A/HRC/RES/29/15 preamble.

<sup>303</sup> Farhana Sultana and Alex Loftus (eds), *The Right to Water: Politics, Governance and Social Struggles* (Earthscan 2012) 9.

<sup>304</sup> Cullet, ‘Right to Water in India – Plugging Conceptual and Practical Gaps’ (n 70).

<sup>305</sup> Darrow (n 98) 216.

which law and policy has defined the scope and content of the HRTW. The discussion is not exhaustive, as others have already provided detailed work on the legal scope and content of the HRTW.<sup>306</sup> Instead, here, broader themes around how the law has defined the HRTW, in the context of water and climate justice, are analysed.

Accordingly, this section provides an analysis of the legal scope and content of the HRTW determined at international and domestic levels, with a focus on India. It will also draw attention to the linkages between different dimensions and processes that interact in producing HRTW issues from a water and climate justice perspective.

Thus, examining the multiple contestations over water and the extent to which the HRTW, in its current form, has recognises these dimensions and identify gaps and challenges.

### *3.3.1 Multiple uses of water: drinking, domestic and livelihood uses of water*

A starting point for this discussion is the multiple uses of water that underpin the different contestations. As chapter 2 analysed, viewing the HRTW justice perspective entails recognising the role of different actors, geographies, processes and power structures and contextualising how these interact and operate in allocating water for different uses. Water is a vital source of life for human and non-human natures and as such has several uses. Humans use water for drinking, bathing, sanitation, cooking, cleaning. It is also a vital part of human activities such as gardening, livestock, prawn and fish farming, producing energy, growing food (irrigation water), as well as of cultural and religious importance. Freshwater has a vital role in the lives of non-human natures, whether animals and birds, or more complex plants and broader ecosystems conflicting interests.<sup>307</sup> Human rights can play an essential role in empowering and mediating the struggles and contestations between different uses. In this research, ‘drinking’ water is understood as water consumed personally for hydration, ‘domestic’ water is used for sanitation, household

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<sup>306</sup> Inga T Winkler, *The Human Right to Water: Significance, Legal Status and Implications for Water Allocation* (Hart Publishing Limited 2012).

<sup>307</sup> Budds (n 179) 63.

purposes (cooking and cleaning), whereas ‘livelihood’ water is water used for productive livelihood activities that are at a subsistence level, such as farming, fishing, or raising livestock.

The HRTW under both international and domestic law has general agreement that it covers drinking and domestic household use. In India, case law on the HRTW has had a critical focus on pollution-related issues.<sup>308</sup> India has significant and critical issues of water pollution, causing health and environmental related problems.<sup>309</sup> Thus, a justified emphasis has been on providing safe drinking and domestic water, but also keeping water bodies “pollution-free”.<sup>310</sup> The impacts of climate change, intertwined with other processes, potentially exacerbate the risks of pollution and the scientific community have consistently made this link.<sup>311</sup>

Under international law, General Comment 15 has provided the most comprehensive definition for the content of the HRTW. General Comment 15 has defined the right as entitling every one ‘to sufficient, safe acceptable, physically accessible and affordable water’. General Comment 15 has identified the content of the HRTW as including the right to maintain existing water supplies, the right to be free from interference, arbitrary disconnections, or contaminations of water supplies. This definition has been influential, particularly for academics and international development policy. In terms of the uses of water, personal and domestic uses of water are recognised, which “ordinarily include drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene”.<sup>312</sup>

Accordingly, in implementing the right, both at the international and domestic level, there has been primarily a focus on drinking water, as well as a limited range of

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<sup>308</sup> *Subhash Kumar v State of Bihar & Ors* (n 68); *Hamid Khan v State of M.P* (n 294).

<sup>309</sup> *Water Aid* (n 33) 9.

<sup>310</sup> *Vellore Citizens Welfare Forum v Union Of India & Ors* (1996) 5 SCC 647 (Supreme Court of India); *MC Mehta v Kamal Nath & Ors* (1997) 1 SCC 388 (Supreme Court of India).

<sup>311</sup> BC Bates and others, ‘Climate Change and Water’ [2008] Climate change and water <[https://www.ipcc.ch/publications\\_and\\_data/\\_climate\\_change\\_and\\_water.htm](https://www.ipcc.ch/publications_and_data/_climate_change_and_water.htm)> accessed 20 May 2018; Jimenez Cisneros and others (n 142).

<sup>312</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 12.

domestic uses. As Chapter One stated, international organisations such as the WHO and UNICEF, have primarily focus on drinking water, with an emphasis on metrics of access to water.<sup>313</sup> While on the one hand, this is much-needed as drinking and domestic water is of primary importance to life, this is a particularly myopic view in light of how hydro-climatic relations produce injustices.

There have been strong arguments that the HRTW should specifically include livelihood uses of water, recognising the significance of water to people's daily lives.<sup>314</sup> This is particularly because of its links with the human right to food, health and the environment. The expansion of the right in this way would recognise the daily struggles of people in the contestation for water and try to alleviate this hardship.<sup>315</sup> As discussed earlier, the right to water, the right to food and right to livelihoods are intrinsically linked. All three rights are recognised in the Indian context. Accordingly, livelihoods in this context usually refer to water for subsistence-level farming, or other uses such as fishing, raising livestock, and artisan-based livelihoods.<sup>316</sup>

The links between water for drinking, domestic use, food and livelihoods are observed through how individuals and communities access to water on the ground and the fiction of providing water for only one particular use. For example, a common source of water like a public tap, or a public pond, is often used for both domestic and productive livelihood activities, regardless of whether these uses were considered in the design of the water services.<sup>317</sup> This inevitably causes conflict, trade-offs, injustices, and HRTW issues. For example, where individuals or households have to choose between drinking less water (at the determinant of health) or growing food or

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<sup>313</sup> Goff and Crow (n 74) 161.

<sup>314</sup> KJ Joy and others, 'Life, Livelihoods, Ecosystems, Culture: Entitlement and Allocations of Water for Competing Uses' (Forum for Policy Dialogue on Water Conflicts in India 2011) <<http://www.environmentportal.in/files/file/Entitlements-and-allocation-of-water-for-competing-uses.pdf>> accessed 1 February 2018; Woodhouse and Langford (n 250); Ralph P Hall, Barbara Van Koppen and Emily Van Houweling, 'The Human Right to Water: The Importance of Domestic and Productive Water Rights' (2014) 20 Science and Engineering Ethics 849; Goff and Crow (n 74).

<sup>315</sup> Goff and Crow (n 74) 167–168.

<sup>316</sup> Hall, Van Koppen and Van Houweling (n 314) 850.

<sup>317</sup> *ibid* 859–860.

contestations between different users sharing the same water source. Government piped water scheme often are designed based on a per-litre drinking and domestic water provision based on a census of a community. It is difficult to account for the fact that social and economic relations may not guarantee that the water is used for these uses. Individuals themselves, if they receive water, may choose to ration water differently. Of course, this is not an issue of ‘choice’, but instead reflects the struggle for livelihoods is such an integral element to rural life in the Global South. For example, in the Sundarbans in West Bengal, a critical issue observed during fieldwork was the lack of freshwater for rural development. Rural development workers interviewed often spoke of the lack of “common sources of water” that in their view could provide domestic and drinking water, but also provide multiple livelihood benefits that could raise food security and the ability to adapt and transform lives in the context of climate change.<sup>318</sup>

Hall and Others have argued that a rights-based approach that recognises both domestic and productive water needs can provide much-needed benefits, including poverty alleviation, food security, gender equity, health, reduced vulnerability and livelihood diversification.<sup>319</sup> Such an approach aligns with the broader ‘capabilities approach, that provides a normative approach for the HRTW.<sup>320</sup> Drawing on the capabilities approach, Jepson et al. argue that the right to water needs to reflect the ability of individuals, households and communities navigating hydro-social relations to secure safe and affordable water in ways that support the sustained development of human capabilities and wellbeing in their full breadth and scope.<sup>321</sup> In other words, the recognition of livelihood water uses becomes essential in increasing the capabilities that the HRTW aims to develop. Securing water for livelihoods is

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<sup>318</sup> Interview with Field Officer, PRASARI (Gosaba, West Bengal, 29 August 2017).

<sup>319</sup> Hall, Van Koppen and Van Houweling (n 314).

<sup>320</sup> Lyla Mehta, ‘Water and Human Development’ (2014) 59 *World Development* 59; Wendy Jepson and others, ‘Advancing Human Capabilities for Water Security: A Relational Approach’ (2017) 1 *Water Security* 46.

<sup>321</sup> Jepson and others (n 320) 48.

relational phenomena that rights-holders have to navigate around water, climate and society.

The emphasis on drinking water and domestic water has been critiqued for turning the HRTW into a technocratic, box-ticking exercise.<sup>322</sup> Often, crude measures of “improved water sources” (those that, by nature of their design and construction are said to have the potential to deliver safe water) are used by the WHO and UNICEF policy guidelines as the stand-alone proxy for satisfying the HRTW.<sup>323</sup> However, as Langford points out, this does not tell us whether such water is regular, affordable, culturally acceptable and sustainable.<sup>324</sup> It also hides the relational inequalities and issues that arise in accessing water, such as those concerning gender and caste. While such implementation, benchmarking and monitoring standards work easily for policy and law frameworks, they are also problematic in meeting the broader objectives of a HRTW from a justice perspective.

That is not to say that all jurisdictions have adopted such narrow definitions. Some national jurisdictions in the Global South have considered a broader meaning of ‘domestic use’. For example, in Malawi, the Water Resources Act 2013 recognises human consumption, livestock use, irrigation of a subsistence garden and watering a subsistence fishpond as “domestic use” of water.<sup>325</sup> In Zimbabwe, the Water Act 1998 defines “primary purposes” in relation to water, to include household needs, animals and bricks to build houses.<sup>326</sup> Accordingly, national jurisdictions do differ in their interpretation of what can fall under domestic or primary uses of water in their coverage of the right to water.

Indeed, while General Comment 15 prioritises drinking and domestic water use, it is possible to interpret General Comment 15 in a broader context. For instance,

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<sup>322</sup> Langford and Fukuda-Parr (n 76); Angel and Loftus (n 253) 208.

<sup>323</sup> Langford and Fukuda-Parr (n 76) 232.

<sup>324</sup> Woodhouse and Langford (n 250) 6–8.

<sup>325</sup> Water Resources Act No 2 2013 s 2(1) (Malawi).

<sup>326</sup> Water Act 1998 s 2(1) (Zimbabwe).



General Comment 15 also mentions, referring to the ICESCR, that individuals should not be deprived of their means of subsistence and that State parties “should ensure that there is access to water for subsistence farming and for securing the livelihoods of indigenous peoples”. Hellum, for example, points out that in other General Comment’s to the ICESCR, the cultural context of defining the contents of a right has been emphasised.<sup>327</sup> Thus, there is scope to argue for contextualised interpretation that could include, for example, the need for water for growing food in rural areas. Hall et al. have argued for a broad interpretation of General Comment 15, stating that while drinking and domestic use should be prioritised under the HRTW, States do have an obligation to go further and recognise other uses of water.<sup>328</sup> Whether General Comment 15 can be interpreted in this way is of less concern here. It is more noteworthy that the HRTW has not generally been interpreted in this way and instead it has arguably narrowed the scope of the HRTW through its more central focus on drinking and domestic water use.<sup>329</sup>

### 3.3.2 *Ecological, Environmental and Climatic “Uses”*

The inherent relationship between delivering the HRTW, protecting and sustaining water sources and the broader ecosystem has meant that rights campaigners have also advocated to specifically recognise the ecological “use”<sup>330</sup> of water as

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<sup>327</sup> Anne Hellum, ‘Engendering the Right to Water and Sanitation: Integrating the Experience of Women and Girls’ in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017) 315.

<sup>328</sup> Hall, Van Koppen and Van Houweling (n 314) 856.

<sup>329</sup> This is reflected through the way the right is represented by international agencies and NGOs. See for example: OHCHR, UN Habitat and WHO, ‘The Right to Water’ (2010) Fact Sheet No 35 <<https://www.ohchr.org/documents/publications/factsheet35en.pdf>> accessed 11 May 2019; UNICEF, ‘The Rights to Safe Water and to Sanitation’ (UNICEF 2014) <[https://www.unicef.org/media/files/Current\\_Issues\\_Paper-\\_The\\_Rights\\_to\\_Safe\\_Water\\_and\\_Sanitation.pdf](https://www.unicef.org/media/files/Current_Issues_Paper-_The_Rights_to_Safe_Water_and_Sanitation.pdf)> accessed 11 May 2019; Oxfam International, ‘Access to Clean Water Is a Fundamental Human Right’ (*Oxfam International*) <<https://www.oxfam.org/en/rights-crisis/access-clean-water-fundamental-human-right>> accessed 11 May 2019.

<sup>330</sup> ‘Use’ is a problematic term in this context, as it leads to further questions around who defines such use and how such use is calculated, potentially appearing as overly anthropocentric.

another category of the multiple uses of water and dimensions of the HRTW.<sup>331</sup> For example, the Forum on Water Conflicts in India, an activist and campaign group, argues that while ‘basic needs’ are to be privileged under the HRTW, there needs to be space also for ‘water for ecosystem needs’. They emphasise the protection of environmental flows. In the context of climate change, such considerations are imperative. As Brooks states “the short-term gains from withdrawing too much of the water required by ecosystems (or withdrawing it too frequently) will soon be lost to long-term, and perhaps permanent, damage to the very services that support the population and their livelihoods”.<sup>332</sup>

Groundwater resources, for example, serve as an essential source of drinking water in India. Groundwater is also a more resilient water source than surface water. In a study of the effects of intense rainfall in tropical countries, often seen as an important climate change trend, Jasechko and Taylor found that such rainfall strongly favours the renewal of groundwater resources.<sup>333</sup> However, excessive exploitation of groundwater can undermine this recharge. The protection of groundwater resources based on the HRTW thus becomes critical. To put it another way, a rights-based approach can be used to argue that rules that mediate the exploitation of groundwater recognise the importance in the use of groundwater, and to enable sufficient water is maintained for the HRTW.

Under international law, such an obligation is weak. General Comment 15 puts a soft requirement that state parties “should” adopt “comprehensive and integrated” strategies and programmes to ensure that there is “sufficient and safe water for present and future generations”.<sup>334</sup> This includes obligations around pollution control and assessing the impacts of “actions that may impinge upon water

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<sup>331</sup> Joy and others (n 314).

<sup>332</sup> David B Brooks, ‘Human Rights to Water in North Africa and the Middle East: What Is New and What Is Not; What Is Important and What Is Not’ (2007) 23 *International Journal of Water Resources Development* 227, 234.

<sup>333</sup> Scott Jasechko and Richard G Taylor, ‘Intensive Rainfall Recharges Tropical Groundwaters’ (2015) 10 *Environmental Research Letters* 124015.

<sup>334</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 28.

availability and natural-ecosystems watersheds”.<sup>335</sup> Sustainable Development Goal 6, that provides for ensuring “availability and sustainable management of water and sanitation for all” provide some further political and normative impetus for how the HRTW is to be read.<sup>336</sup> However, the language and legal status of the SDGs is not specific enough to translate to human rights standards.<sup>337</sup> Another prospective development is through the recognition of a human right to the environment under international law, if that ever happens. Such recognition may provide scope for more significant normative extension of the HRTW towards the formal recognition of ecological uses and value.<sup>338</sup> However, to date, the HRTW has primarily focussed on the provision of drinking and domestic water, without drawing attention to the broader environmental and climatic questions. A stronger basis for the recognition of the linkages between water and ecosystems remains a gap in the HRTW as it currently exists under international law.

Domestic law does provide some examples of the scope for the recognition of environmental dimensions and linkages, leaving aside implementation issues for the moment. South Africa, Bolivia, along with India, provide three pertinent examples. South Africa recognises both the HRTW and the human right to a healthy environment under its Constitution.<sup>339</sup> The interlinked nature of these rights means that there is a responsibility on the state to ensure that water is conserved and

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<sup>335</sup> *ibid.*

<sup>336</sup> Owen McIntyre, ‘International Water Law and SDG 6: Mutually Reinforcing Paradigms’ in Duncan French and Louis J Kotzé (eds), *Sustainable Development Goals: Law, Theory and Implementation* (Edward Elgar 2018) 187.

<sup>337</sup> John H Knox, ‘Human Rights, Environmental Protection, and the Sustainable Development Goals’ (2015) 24 *Washington International Law Journal* 517.

<sup>338</sup> The work of the Special Rapporteur on the Human Right to Water and the Special Rapporteur on Human Rights and the Environment is worth noting here. The Special Rapporteur on the Human Right to Water has called “sustainability” a human rights principle, stating that water must be provided in a way that “respects the natural environment”. (UNGA, ‘Report of the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation’ (2013) A/HRC/24/44 paras 18–23.)

<sup>339</sup> Constitution of South Africa ss 24 and 27.

protected and that there is sufficient access to water for human use.<sup>340</sup> One example of the interlinked nature of the HRTW and the right to a healthy environment is through the public trust doctrine in South Africa's water law and policy.<sup>341</sup> For example, South African government policy has dictated that the public trust doctrine entails obligations on the government to first, meet the basic water needs of citizens; second, protect both water and environment itself through an "ecological reserve" for water; and third, respect downstream users of river water.<sup>342</sup>

On the other hand, there is a perceptible tension between basic human uses and so-called environmental uses. For example, in the *Mazibuko* case in South Africa, the Constitutional Court heard an appeal regarding the provision of a quantity of free water (42 litres) that the Court of Appeal had revised down from the High Court's original quantity (50 litres).<sup>343</sup> In the context of increasing water set aside for personal consumption, the Plaintiff's may have chosen to not remind the Court of the requirements of the ecological reserve and public trust, for fear that every litre for the ecological reserves is a litre less for the residents.<sup>344</sup> But, this was a false trade-off. Litigation strategy aside, the public trust doctrine (read within a rights framework) would mean that while the ecological reserve is recognised, there is also an equitable distribution of water.<sup>345</sup> As Takacs states, "water managers cannot simply mismanage the [majority of the water] resource and respond that the remaining water is all the water that is "available."<sup>346</sup> In other words, there would need to be an examination of

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<sup>340</sup> Kotzé, 'Phiri, the Plight of the Poor and the Perils of Climate Change: Time to Rethink Environmental and Socio-Economic Rights in South Africa?' (n 250) 145.

<sup>341</sup> David Takacs, 'South Africa and the Human Right to Water: Equity, Ecology and the Public Trust Doctrine' (2016) 34 Berkeley Journal of International Law 55, 79.

<sup>342</sup> Department of Water Affairs and Forestry, 'White Paper on a National Water Policy for South Africa' (Department of Water Affairs and Forestry 1997); see also: Loretta Feris, 'The Public Trust Doctrine and Liability for Historic Water Pollution in South Africa' (2012) 8 Law, Environment and Development Journal 1, 14.

<sup>343</sup> *Mazibuko, Lindiwe et al v City of Johannesburg, et al* (2009) 4 SA 1 (Constitutional Court of South Africa).

<sup>344</sup> Takacs (n 341) 91.

<sup>345</sup> *ibid* 90–97.

<sup>346</sup> *ibid* 96.

both equity and ecology with an attempt to balance these considerations.<sup>347</sup> However, what this does exhibit is the visible tension between such uses for judges and policymakers. It also illustrates how “access to” water often remains the preferred interpretation of the HRTW, as opposed to the “provision of” water, even though provisioning free water may be the only way to meet the very basic needs of individuals.

A different avenue to link ecological concerns and the HRTW is through an eco-centric rights approach. Bolivia has recognised the ‘right of mother earth’, giving a “right to preservation of the quality and composition of water to sustain life systems and their protection with regards to contamination, for renewal of the life of Mother Earth and all its components”.<sup>348</sup> Bolivia’s rights of nature create the possibility that decisions around water have to intrinsically consider the rights of the water body themselves against the broader human rights paradigm. In struggles and contestations for water, such claims ‘by water bodies’ themselves to would be to demand flow, replenishment, for their own interests. While several practical questions remain, in terms of standing, representation for non-human natures, from a broader justice perspective, there are significant possibilities worth further consideration.

In the Indian context, both the Right to a Healthy Environment and the HRTW are recognised under the Constitution under the right to life (Article 21). The Right to a Healthy Environment is often invoked in pollution-related water cases, preventing, for example, industrial pollution into water bodies.<sup>349</sup> Beyond the pollution link, integrating these two rights in a broad manner that specifically recognises ecological flows, groundwater conservation and protection has been limited. There are ways forward that are discussed in later chapters. One of these is the Public Trust Doctrine. The Supreme Court commented that the “public trust doctrine in our country, it would

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<sup>347</sup> Kotzé, ‘Phiri, the Plight of the Poor and the Perils of Climate Change: Time to Rethink Environmental and Socio-Economic Rights in South Africa?’ (n 250) 138.

<sup>348</sup> Law 071 of the Plurinational State of Bolivia 2010.

<sup>349</sup> *Vellore Citizens Welfare Forum v Union Of India & Ors* (n 310).

appear, has grown from Article 21 of the Constitution”.<sup>350</sup> Takacs has suggested that the Indian judiciary has put the public trust doctrine “in service” of constitutionally-guaranteed environmental rights, bolstering the demands on the government to advance the HRTW on a commons-based platform. There are reasons to be cautious here, unlike Takacs, because the judiciary itself has been inconsistent in applying principles like equity and sustainability in its assertion of rights.<sup>351</sup>

A critical challenge that emerges is the difficulty in providing an easily applicable requirement of water for ecological uses to meet the HRTW. As mentioned earlier, policymakers often prefer a defined metric, for example, ‘70 litres of drinking water per capita per day’. However, in the case of ecological and environmental requirements, this is not possible for several reasons. First, there are still major gaps in research on the volumes of water that need to be left in the ecosystem for sustainable and healthy ecosystems. On environmental flows, for example, in countries like India in the Global South, these aspects of work are still in their infancy. The rapid pace of climate change and climate breakdown mean that such work needs to be prioritised. Second, the complexity of socio-ecological interactions from a local to global level, it is impossible for such an easily applicable metric. Instead, legally defined and applicable principles become vital to recognising ecological values and maintaining ecological integrity. At a more local level, *in situ* conservation of river, lake, wetland, estuary is one way forward.<sup>352</sup> As Brooks outlined, this requires broader regulatory and institutional oversight, democratic participation, research and experimentation, none of which is straightforward.<sup>353</sup> It is here that principles such as public trust, common heritage, and other ‘commons’ based principles can broaden the HRTW.

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<sup>350</sup> *MI Builders Private Ltd v Radhey Shyam Sahu* [1999] AIR 2468 (Supreme Court of India).

<sup>351</sup> Philippe Cullet, ‘A Meandering Jurisprudence of the Court’ in Mayur Suresh and Siddharth Narrain (eds), *The Shifting Scales of Justice: The Supreme Court in Neo-liberal India* (Orient BlackSwan 2014).

<sup>352</sup> Brooks (n 332) 234.

<sup>353</sup> *ibid* 235–237.

### 3.3.3 *Equality: the need to incorporate gender and caste dimensions*

Existing inequalities and power structures mediate how contestations around different water uses materialise. If struggles for access to water are, as the UNDP states, “rooted in power, poverty and inequality”, it follows that human rights and their corollary laws and policies must account for these relations.<sup>354</sup> Moreover, as the previous chapter outlined, recognition of different communities, cultural values and voices, are an integral element to questions of water and climate justice.<sup>355</sup> In the Indian context, two relational inequalities caste and gender, are vitally important in the context of water and climate justice. Accordingly, this section analyses how gender and caste considerations are accounted for in the HRTW framework.

Gender defines the socially constructed identities, roles and responsibilities of women and men and the relationship between them. It does not refer to women or men specifically, but the way our behaviour and identity is shaped by a process of socialisation, which happens as a result of cultural, religious, economic, institutional and other processes.<sup>356</sup> Unequal gender relations are embedded in society and can determine access and control to resources, endowments and decision making. Gendered dependence on natural resources and divisions of labour produce a different level of vulnerability that vary across different contexts.<sup>357</sup> In the rural Global South, women have a disproportionate burden of responsibilities around water. Women are often the collectors of household domestic water, in addition to carrying out tasks that have an integral water dimension such as cooking, washing, looking after children, the elderly and sick.<sup>358</sup> Sanitation dimensions also bring particular elements that are

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<sup>354</sup> United Nations Development Programme (n 205) 2.

<sup>355</sup> David Schlosberg, ‘Climate Justice and Capabilities: A Framework for Adaptation Policy’ (2012) 26 *Ethics & International Affairs* 445.

<sup>356</sup> Sarah Ahmed, ‘Gender and Integrated Water Resources Management’ in Kuntala Lahiri-Dutt and Robert J Wasson (eds), *Water First: Issues and Challenges for Nations and Communities in South Asia* (SAGE Publications 2008) 187.

<sup>357</sup> see generally: Agarwal (n 30).

<sup>358</sup> Ahmed (n 356).

bound with water.<sup>359</sup> Women are also often using water for growing household food through kitchen gardens, or in coastal areas with small-scale aquaculture.

An example of these inequities was observed during fieldwork in the Sundarbans region in West Bengal (discussed further in Chapter Five). Women in the coastal villages of Mousini Island spent up to 8 hours of the day immersed in salty water collecting and sorting prawn seedlings as a livelihood activity.<sup>360</sup> In addition to this, women had the primary responsibilities for collecting freshwater, at times walking up to 30 minutes each way, several times a day, to fetch such water. During times of water stress in the dry seasons, women interviewed complained of the additional time burden of having to wait for water. Women face difficult decisions around allocating water for different tasks. Because of rising sea levels, heavy rain, and flooding women have to often walk through muddy and flooded areas, in heavy rain, or in some cases the sea itself, to collect water. This presents added dangers in daily lives and livelihoods of women.

The literature on water, climate and gender has illustrated how women are more vulnerable to climate change.<sup>361</sup> It also emphasises women's roles in adaptation, resilience, and climate strategies. In other words, it would be a mistake to conclude that women are passive victims. Nor should women be essentialised, as some authors have, as having a natural innate relationship with water and the environment.<sup>362</sup> These representations are unhelpfully fix women in static positions. While women may have a particularly important role as stewards, this not because of some pre-given relationship with the environment. Instead, as Agarwal has argued, where women are

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<sup>359</sup> UN Water, 'Gender, Water and Sanitation: A Policy Brief' (2006) <[http://www.un.org/waterforlifedecade/pdf/un\\_water\\_policy\\_brief\\_2\\_gender.pdf](http://www.un.org/waterforlifedecade/pdf/un_water_policy_brief_2_gender.pdf)> accessed 16 March 2018.

<sup>360</sup> Uvarshi Sarkar, 'From River to Plate: The Journey of the Sundarbans Tiger Prawn' *People's Archive of Rural India* (1 November 2017) <<https://ruralindiaonline.org/articles/from-river-to-plate-the-journey-of-the-sundarbans-tiger-prawn>> accessed 4 November 2019.

<sup>361</sup> See for example: Sultana (n 32); Ray-Bennett, 'The Influence of Caste, Class and Gender in Surviving Multiple Disasters' (n 32); Lahiri-Dutt, 'Large Dams and Changes in an Agrarian Society: Gendering the Impacts of Damodar Valley Corporation in Eastern India' (n 32).

<sup>362</sup> Ecofeminists like Vandana Shiva have argued that women have a special relationship with nature. See: Vandana Shiva, *Staying Alive: Women, Ecology and Survival in India* (Kali for Women 1988).



“closer” to the natural environment (including through the collection of water, fuel and fodder), this is based upon gendered divisions of labour, as well as distributions of property and power.<sup>363</sup>

Moreover, gender issues intertwine with other power structures, and an intersectional lens is particularly important in examining water and climate injustices. For example, in relatively better-off households in Mousini Island, women were not walking long distances for water, nor engaged in prawn seed farming. Class, caste, and other forms of injustice, thus intersect with gendered power structures. This is not to undermine the importance of gender or make the issue class-determinative (other forms of gendered relations continued to perpetuate around water in wealthier households in different ways). Instead, it is essential to concentrate on the material lives and realities of how gender relations, water and climate injustices can vary according to several interacting processes of power and inequality.

An intersectional analysis provides a context to also examine questions around water, climate, caste and gender. Historically, water-related structures in India, such as wells and ponds, were constructed based on caste. Caste-based discrimination has meant that upper caste groups discriminate against lower caste groups in accessing water based on ritual purity. For example, if an upper-caste person’s water source is touched by a person from a lower caste, it could be considered contaminated. Even if groups are sharing the same water source, practice can dictate that lower-caste communities have a lower priority of rights. During times of water scarcity, these injustices exacerbate.<sup>364</sup> Though practices have changed over time, these issues are

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<sup>363</sup> Agarwal (n 30) 146.

<sup>364</sup> Dalit Boy Denied Water from Hand Pump, Drowns While Drinking from Well’ <https://www.hindustantimes.com/> (9 March 2016) <<https://www.hindustantimes.com/bhopal/dalit-boy-not-allowed-water-from-school-hand-pump-drowns-while-drinking-from-well/story-9KLdKKDT9BazWAPy56ZxDP.html>> accessed 16 March 2018; ‘Dalit Woman Denied Water Access, Husband Digs Own Well in Drought-Hit Maharashtra Village’ *The Indian Express* (8 May 2016) <<http://indianexpress.com/article/india/india-news-india/dalit-woman-denied-water-access-husband-digs-own-well-in-drought-hit-maharashtra-village-2790466/>> accessed 16 March 2018; Hannah Johns, ‘Stigmatisation of Dalits in Access to Water and Sanitation in India’ <[http://idsn.org/wp-content/uploads/user\\_folder/pdf/New\\_files/UN/HRC/Stigmatization\\_of\\_dalits\\_in\\_access\\_to\\_water\\_sanitation.pdf](http://idsn.org/wp-content/uploads/user_folder/pdf/New_files/UN/HRC/Stigmatization_of_dalits_in_access_to_water_sanitation.pdf)> accessed 16 March 2018.

still prominent in India today. During fieldwork in Rajasthan, a Project Director of established NGO in the region, explained that “caste issues are common. Dalits may not get access to water taps; they have to go to different sources. It is a big problem. Same with traditional ponds, which are often segregated”.<sup>365</sup> For a low-caste woman, twin injustices are present. Research has illustrated how during times of climate disasters, gender and caste relations multiply and this web of woes produces new sites of hydro-climatic injustice.<sup>366</sup> Thus, caste, gender, and poverty are intersecting forms of injustice that the HRTW must respond to.

The question of caste is also relevant because Indian environmental politics has a long history of looking at environmental issues through a casteist lens.<sup>367</sup> Mukul Sharma describes water as a “source of power” used as “a traditional medium for exclusion of Dalits in overt and covert ways”.<sup>368</sup> He also points out how such power has denied Dalit “narratives and knowledge of water”.<sup>369</sup> Dominant narratives around water and the environment in India have been infused with nostalgic and romanticised accounts of traditional knowledge of water bodies, community-based systems, and decentralised natural resource management.<sup>370</sup> In the context of water and climate change, such interventions are often made as climate change adaptation activities and policy prescriptions, for example, around community-based watershed management and rainwater harvesting.<sup>371</sup>

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<sup>365</sup> Interview with Project Manager, CECEODEN (Jaipur, Rajasthan 6 September 2017).

<sup>366</sup> Nibedita S Ray-Bennett, ‘Multiple Disasters and Policy Responses in Pre- and Post-Independence Orissa, India’ (2009) 33 *Disasters* 274; Nisha Onta and Bernadette P Resurreccion, ‘The Role of Gender and Caste in Climate Adaptation Strategies in Nepal: Emerging Change and Persistent Inequalities in the Far-Western Region’ (2011) 31 *Mountain Research and Development* 351.

<sup>367</sup> Mukul Sharma has called this “eco-casteism”, the relationship between environment and caste which has shaped the history of India. See: Sharma (n 24).

<sup>368</sup> *ibid* 162.

<sup>369</sup> *ibid*.

<sup>370</sup> *ibid* 163.

<sup>371</sup> For example, India’s Nationally Determined Contribution to the UNFCCC emphasises such activity as an adaptation action, as does India’s National Action Plan on Climate Change. Multilateral Funding is also provided for such activity, for example: Adaptation Fund, ‘Climate Proofing of Watershed Development Projects in the States of Tamil Nadu and Rajasthan’ (*Adaptation Fund*, 2015)

Without adequate interrogation from a gender and caste lens, embedded local power structures are reinforced.<sup>372</sup> Villages and communities are not innately democratic or egalitarian and can be deeply authoritarian spaces. Communities are also not homogeneous and are composed of conflicting and cooperating segments of ethnic, religious, caste, class and gender categories.<sup>373</sup> Laws and policies operating around HRTW and climate change must contend with these multifaceted challenges.

International and domestic human rights law has responded to these issues mainly through the principles of equality and non-discrimination, but also more recently through participation. The gender dimensions of the HRTW are relevant under CEDAW, which stipulates that state parties shall ensure women “enjoy adequate living conditions, particularly in relation to [...] water supply”. The CEDAW Committee has also observed the need for gender responsive human rights approaches to climate change, including that state parties shall consider the unique role of women in climate change planning.<sup>374</sup> The CEDAW Committee has also examined the intersectional issue of caste and gender in India, recommending that India adopts comprehensive anti-discrimination legislation that prohibits discrimination on all grounds.<sup>375</sup> Recognising the HRTW, the CEDAW Committee has also recommended that India needs to strengthen efforts to secure access to water for rural women, abolish traditional practices that prevent rural women from inheriting and acquiring land, in particular for Dalit women who face multiple barriers in accessing justice.<sup>376</sup> Under the ICESCR, General Comment 15 also prescribes that

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<<https://www.adaptation-fund.org/project/climate-proofing-of-watershed-development-projects-in-the-states-of-rajasthan-and-tamil-nadu/>> accessed 12 October 2018.

<sup>372</sup> Kothari (n 177).

<sup>373</sup> Maithreyi Krishnaraj, ‘Women and Water: Issues of Gender, Caste, Class and Institutions’ (2011) 46 *Economic & Political Weekly* 37, 38.

<sup>374</sup> CEDAW (n 300); Committee on the Elimination of Discrimination against Women, ‘General Recommendation No. 37 on Gender-Related Dimensions of Disaster Risk Reduction in the Context of Climate Change’ (2018) CEDAW/C/GC/37.

<sup>375</sup> Committee on the Elimination of Discrimination against Women, ‘Concluding Observations on the Combined Fourth and Fifth Periodic Reports of India’ (2014) CEDAW/C/IND/CO/4-5.

<sup>376</sup> *ibid* 32–34.

special attention must be given to women and minority groups.<sup>377</sup> The work of the UN Special Rapporteur on HRTW and Sanitation is also noteworthy in pushing the agenda on these issues through issuing reports that provide normative content for countries to include in their legislation and policies.<sup>378</sup>

In the Indian context, the Constitution of India recognises equality before the law and prohibits discrimination on the basis “religion, race, caste, sex, place of birth or any of them”.<sup>379</sup> Reflecting on the history of caste and water, the Constitution prohibits not only the State but also private parties from discriminatory practises and limiting access to public wells, tanks, and bathing *ghats*.<sup>380</sup> Article 17 of the Constitution also absolves “untouchability”, thus also prohibiting private parties from its practice. Accordingly, the recognition of an HRTW as a fundamental right in India, along with these constitutional rights provide a minimum level of protection and recognition to Dalits and women.

However, beyond this minimum level, there has been very little recognition of how gender and caste aspects are incorporated in implementing the HRTW. The leading cases on the HRTW and human right to a healthy environment in India have not provided much normative content on gender and caste either. Moreover, climate and water policy have also mainly been gender and caste blind.<sup>381</sup> The growth of participatory approaches to water (and more generally to natural resource

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<sup>377</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 16.

<sup>378</sup> UNGA, ‘Report of the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation’ (2016) A/HRC/33/49.

<sup>379</sup> Constitution of India 1950 Article 15.

<sup>380</sup> Constitution of India 1950 Article 15(b)

<sup>381</sup> The National Action Plan on Climate Change recognises that the severity of the impacts of climate change have a gendered dimension. However, state climate change plans have largely been gender blind. See also: Alternative Futures and Centre for Budget and Governance Accountability, ‘Climate Change Adaptation in Four Indian States: The Missing Gender Budgets’ (2014) 1 <<http://www.cbgaIndia.org/wp-content/uploads/2017/03/Climate-Change-Adaptation-and-Gender-Budgeting-Policy-Brief.pdf>> accessed 16 April 2019. On the missing links between gender, caste and water policies see: Tanusree Paul, ‘Viewing National Water Policies through a Gendered Lens’ (2017) 52 *Economic & Political Weekly* 76; Deepa Joshi, ‘Caste, Gender and the Rhetoric of Reform in India’s Drinking Water Sector’ in Mihir Shah and PS Vijayshankar (eds), *Water: Growing Understanding, Emerging Perspectives* (Orient BlackSwan 2016).

management) in the last 20 years provides an urgent need to ensure caste and gender dimensions are integrated into HRTW frameworks. Participatory approaches emphasise small-scale, decentralised community-based approaches that on the one hand, provide an opportunity for greater involvement of women, Dalits, tribals and minorities. On the other hand, inclusion is not guaranteed and particularly dependant on existing local power structures. Configurations of participatory approaches that may be less democratic, for example, where a community project's participation is based on the ability of participants to contribute financially, or through land ownership, or some other metric provide scope for further injustices. Moreover, one of the key criticisms of participatory approaches has been that they have often been designed to depoliticise water relations.<sup>382</sup> This depoliticisation works towards maintaining embedded power structures. As the previous chapter discussed, a justice-based approach demands the repoliticisation of water and climate relations.

In sum, there is much scope for caste and gender dimensions to be integrated into the understanding of the HRTW. The invisibility of gender and caste perpetuates injustices. These themes will be further explored the following chapters through examining the legal framework in India and empirical case studies of how caste and gender operate on the ground.

### *3.3.4 Privatisation: recognising the links with human right to water and hydro-climatic change*

Since the 1990s, the promotion of the private sector has seen lively debates around the privatisation of water in both the Global South and North. In the context of the Global South, private sector participation has often come as a conditionality to

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<sup>382</sup> Baviskar (n 164); Swyngedouw, 'Depoliticized Environments: The End of Nature, Climate Change and the Post-Political Condition' (n 199).

loans and development packages by multilateral and regional development banks, such as the World Bank. Resistance to such privatisation has also been strong, perhaps most visibly in the case of the Cochabamba “water wars” in Bolivia.<sup>383</sup> Notably, resistance has often been expressed in the language of human rights.<sup>384</sup> There has been a lot written around human rights, privatisation and water, particularly on the computability of rights with privatisation.<sup>385</sup> This is beyond the scope of this sub-section to review; rather, this sub-section examines the relationship and linkages between privatisation, the HRTW and climate change. These linkages, as will show, are present through looking at how water is allocated and reallocated. However, they have often not been incorporated into the discussions, and law and policy frameworks, around the HRTW.

Broadly defined, privatisation is a process through which the private sector becomes increasingly, or entirely, responsible for activities traditionally performed by government, including many that are explicitly designed to ensure the realisation of human rights.<sup>386</sup> For example, the full scale or partial transfer of public utilities to private actors, the involvement of the private sector in discrete aspects of water service or production, to the marketisation of water sector (such that public sector utilities must act on ‘cost recovery’ models) and the liberalisation of water sector (to

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<sup>383</sup> Nina Laurie and Carlos Crespo, ‘Deconstructing the Best Case Scenario: Lessons from Water Politics in La Paz–El Alto, Bolivia’ (2007) 38 *Geoforum* 841; Manuel de la Fuente, ‘The Water War in Cochabamba, Bolivia: Privatization Triggers an Uprising’ (2003) 23 *Mountain Research and Development* 98.

<sup>384</sup> Malcolm Langford, ‘Privatisation and the Right to Water’ in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017) 463.

<sup>385</sup> Bakker has argued that framing water as a human right is not the best way to counter privatisation because the HRW is compatible with private sector participation. She argues that it is in fact sloppy to assert that human rights are a counter to private property rights. Rather, a commons-based framing is more appropriate. Nevertheless, she has also reflected that as a “strategy” rights-talk can be an important counter-narrative to privatisation. See: Bakker (n 242). There is a lively debate on this topic, see: Farhana Sultana and Alex Loftus (eds), *The Right to Water: Politics, Governance and Social Struggles* (Earthscan 2012). For wider literature on privatisation and the human right to water, see: Maude Barlow, *Blue Gold: The Fight to Stop the Corporate Theft of the World’s Water* (New Press 2002); Murthy (n 66).

<sup>386</sup> UNGA, ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (2018) A/73/396 para 82.

allow for competition). Sangameswaran identified three key arguments that are put forward in favour of privatisation.<sup>387</sup> First, that the state is unable to provide water adequately, and the private sector is better placed to deliver this service. Second, the scale of investment required into water infrastructure cannot be met by the public sector alone. Finally, that water should be priced and seen as an economic good. This is based on the logic that there can be cost recovery for the delivery of water and that the ‘true’ value of water as a resource can be captured. It is also claimed that this provides an incentive for conserving and judiciously using water.

The relationship between privatisation and human rights, in general, has been controversial and widely analysed.<sup>388</sup> The UN Special Rapporteur on Poverty stated in a report that “privatisation is premised on assumptions fundamentally different from those that underpin respect for human rights, such as dignity and equality.”<sup>389</sup> The profit motivation of private activity means that considerations of equality and non-discrimination can be inevitably side-lined.<sup>390</sup> The report draws attention to how privatisation involves a complete shift in governance arrangements and motivations. This means that purely dealing with the human rights implications through procedural safeguards, guidelines, or other forms of soft mechanism will fail to deal with the far-reaching implications of privatisation. The report states that human rights must play a central role, and that “rather than abandoning rights language in the context of responding to privatisation, both the discourse and substance of the rights need to

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<sup>387</sup> Priya Sangameswaran, ‘The Right to Water in Different Discourses’ in Margreet Zwarteveen, Sara Ahmed and Suman R Gautam (eds), *Diverting the Flow: Gender Equity and Water in South Asia* (Zubaan 2012) 117.

<sup>388</sup> See for example: Upendra Baxi, *The Future of Human Rights* (Oxford University Press 2002); Adam McBeth, ‘Privatising Human Rights: What Happens to the State’s Human Rights Duties When Services Are Privatised?’ (2004) 5 *Melbourne Journal of International Law* 1; Koen De Feyter and Universidad de Deusto (eds), *Privatisation and Human Rights in the Age of Globalisation* (Intersentia 2005); Manfred Nowak, *Human Rights or Global Capitalism: The Limits of Privatization* (University of Pennsylvania Press 2017).

<sup>389</sup> UNGA, ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (n 386) para 82.

<sup>390</sup> *ibid.*

become the key battlegrounds. Societies that constantly proclaim that human rights are inalienable cannot permit privatisation to alienate them”.<sup>391</sup>

Privatisation is an important process in examining hydro-climatic injustice and HRTW issues. The transformation of water as an economic good (as an integral aspect of privatisation) has seen a change in the way water is governed. The pricing of water has consequences in a climate change context because the logic of the market can dictate who has or does not have water (particular in situations of water scarcity). Water as an economic good has also seen the reallocation of flows of water towards profitable industries, including at times to redirect water to fulfil a (marketised) HRTW need. These processes literally dispossess communities from water previously held under a commons-based system of governance and ownership. While much of the literature on the HRTW and privatisation has focused on urban utilities and its privatisation, there are reasons also to focus the process of water being appropriated and redirected as part of this overall shift in the ideology of governance that privatisation brings.

In 1992, the Dublin Statement on Water and Sustainable Development, marked a critical shift in international policy direction and discourse. The Dublin Principles, that were embedded in the statement, expressly recognised water as an ‘economic good’, while at the same time affirming its status as a human right.<sup>392</sup> However, it is important to note that the Dublin Statement is a policy document that emerged from a meeting of the International Conference on Water and the Environment. The conference was made up of representatives of government, international organisation, non-governmental organisations, scientific and technical experts. But, it was not agreed to by states in the same way as a political ‘soft law’ declaration or a treaty. The conference was a preparatory technical meeting to the United Nations Conference on Environment and Development (UNCED, also known

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<sup>391</sup> *ibid* 74.

<sup>392</sup> ‘Dublin Statement on Water and Sustainable Development’ (1992) International Conference on Water and the Environment, principle 4.



as the Rio Conference). While the Statement was forwarded to member states participating in the Rio Conference, neither did the Rio Declaration mention water nor did the UN General Assembly endorse the Statement.<sup>393</sup> However, in subsequent years, its principles were widely adopted by international organisations, NGOs, and eventually states. Muller argues that this was a “policy coup” for Global North governments and the World Bank, that managed to push a parallel multilateralism, where there was (at the time) little countervailing force.<sup>394</sup> This ideological shift, embedded in the Dublin Statement, then translated into World Bank’s policies and donor conditionality that had a profound impact on countries in the Global South. For example, as a heavily indebted country in the early 2000s, Tanzania was given debt relief. However, it was in exchange for conditions that the government privatise the water system in Dar es Saalam.<sup>395</sup>

The topic of privatisation was relevant to the Committee on Economic, Social and Cultural Rights in General Comment 15 on the HRTW. The Committee reaffirmed that states had primary responsibility for the HRTW while accepting that privatisation and the operation and control of water services by corporations had a place in the water sector.<sup>396</sup> It generally reserved its comments for the fact that states should not allow privatisation processes to compromise the delivery of the HRTW. This approach effectively sidestepped the substantive clashes between transnational corporations and rights activists that were occurring through the 2000s, leading to some commentators arguing that the HRTW was reduced to an “empty signifier”

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<sup>393</sup> Philippe Cullet, ‘Is Water Policy the New Water Law? Rethinking the Place of Law in Water Sector Reforms’ (2012) 43 IDS Bulletin 69, 71.

<sup>394</sup> Mike Muller, ‘The “Nexus” As a Step Back towards a More Coherent Water Resource Management Paradigm’ (2015) 8 Water Alternatives 675, 681.

<sup>395</sup> R Greenhill and I Wekiya, ‘Turning off the Taps: Donor Conditionality and Water Privatisation in Dar Es Salaam, Tanzania’ (Action Aid UK 2004).

<sup>396</sup> UN Committee on Economic Social and Cultural Rights (n 274) paras 23–24, 27, 33, 44, 49–50, 56.

because the Committee's interpretation failed to address its fundamental contestations and contradictions.<sup>397</sup>

Nevertheless, while General Comment 15 sidestepped the issue, some countries (particularly those in South America) have taken a more direct approach. For example, under Ecuador's Constitution water "is unalienable, not subject to a statute of limitations, immune from seizure and essential for life".<sup>398</sup> A public referendum deemed water privatisation illegal in Uruguay.<sup>399</sup> Under the Bolivian Constitution "[water] resource[s] cannot be the object of private appropriation and they, as well as water services, shall not be given as concessions and are subject to a system of licensing, registration and authorisation under the law".<sup>400</sup>

In India, water sector reforms and the drive of privatisation and commercialisation too began in the 1990s with the liberalisation of the economy. One of the critical reforms was the conceptual shift of water as an economic good, consistent with the Dublin Statement. This shift brought in a new paradigm that placed the burden on communities to finance their own water supply and moved towards pricing water.<sup>401</sup> The influence of international development banks is again significant here, as often such policies were a result of loan conditionalities. The jurisprudence on the HRTW has had a limited effect on countering this trend and the Court has been unwilling to step in to, for example, grant relief to provide free water.<sup>402</sup>

Globally, by the 2010s, the battles over privatisation that marked events like in Cochabamba in Bolivia had seemingly declined. The privatisation of municipal water

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<sup>397</sup> Sultana and Loftus (n 385) 7. See also critiques by: Matthew Craven, 'Some Thoughts on the Emergent Right to Water' in Eibe Riedel and Peter Rothen (eds), *The Human Right to Water* (BWV 2006); Tully (n 296).

<sup>398</sup> Constitution of Ecuador 2008 Article 12.

<sup>399</sup> Langford, 'Privatisation and the Right to Water' (n 384) 489.

<sup>400</sup> Constitution of the Plurinational State of Bolivia article 373.

<sup>401</sup> Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 152) 138–175.

<sup>402</sup> *Voice of India v Union of India & Ors* [2010] High Court of Delhi W.P.(C) 8415/2009 & CM 5295/2009.

services was seen as declining and even reversing.<sup>403</sup> While this may suggest that water privatisation is on the decline, this trend is only one part of the overall picture. First, ‘corporatisation’ of water services continues to occur. Corporatisation refers to a shift in public services being operated on commercial principles such that water is seen as an economic good.<sup>404</sup> This has been significant in the reallocation of flows of water towards more economically productive areas and also in continuing the ‘cost recovery’ model of water (and sanitation) projects that see communities and individuals having to contribute the capital or operational and maintenance costs of the projects. There are significant HRTW questions around such schemes as one’s ability to pay is not consistent with a universal HRTW. Second, new technologies and trends of private water sector activities have arisen. For example, water ATMs in India have been driven by the private sector. Water ATMs are ‘vending machines’ provide clean drinking water for a price to consumers. One of the key issues has been where these Water ATMs are being used as substitutes for government provisions of drinking water to the poor.<sup>405</sup> The water crisis (and in turn, the climate crisis) are often used as justification for the need of water ATMs.<sup>406</sup> Third, privatisation has a critical role in the policy context of the sustainable development and climate policy context. Blended finance, public-private partnership and other forms of private sector participation are increasingly relevant to discussions around SDG 6 on water and climate change adaptation actions.<sup>407</sup> The World Bank has identified public private

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<sup>403</sup> Satoko Kishimoto, Emanuele Lobina and Olivier Petitjean, ‘Here to Stay: Water Remunicipalisation as a Global Trend’ (Public Services International Research Unit (PSIRU), Transnational Institute (TNI) and Multinational Observatory 2014) <<https://www.tni.org/files/download/heretostay-en.pdf>> accessed 21 April 2019.

<sup>404</sup> Langford, ‘Privatisation and the Right to Water’ (n 384) 464.

<sup>405</sup> Sujith Koonan, ‘A Lesser Fundamental Right’ *The Statesman* (5 March 2015) <<https://www.thestatesman.com/not-found/a-lesser-fundamental-right-51040.html>> accessed 21 April 2019.

<sup>406</sup> Arvind Jayaram, ‘Climate of Change: Water ATMs Make a Splash as Taps Run Dry in Bengaluru’ *The Straits Times* (28 October 2018) <<https://www.straitstimes.com/asia/south-asia/water-atms-make-a-splash-among-thirsty-residents>> accessed 21 April 2019.

<sup>407</sup> Blended Finance Task Force, ‘Better Finance, Better World: Consultation Paper of the Blended Finance Task Force’ (Business & Sustainable Development Commission 2018) <<https://www.blendedfinance.earth/better-finance-better-world>> accessed 25 April 2019; Meera

partnerships (PPPs) as critical to delivering sustainable development goals.<sup>408</sup> Fourth, even where privatisation has been reversed, like in the case of Bolivia, recognition of citizen's participation, democratic decision making, and environmental considerations have been given less emphasis.<sup>409</sup> Finally, a future with increasing climate disasters, raise the spectre of crisis-induced privatisation (also termed 'disaster capitalism').<sup>410</sup> Disasters can open a critical juncture for significant policy shifts, that are then exploited to induce further drives of privatisation.

As mentioned earlier, water as an economic good can see the reallocation of flows of water towards profitable industries, including to fulfil commercialised drinking water needs. The relationship between privatisation, climate change and the HRTW can also be analysed through the lens of "accumulation by dispossession".<sup>411</sup> Expanding on Marx's original formulation of "primitive accumulation", Harvey introduces the term 'accumulation by dispossession' to describe the continuous expansionary process of capitalism expanding into non-capitalist spaces.<sup>412</sup> Thus, water, land and other natural resources often held in commons, outside of traditional markets are subsumed under capitalism, dispossessing those who have used and held these resources. Accumulation by dispossession fundamentally involves redistribution from the poorer/peasant classes to wealthier/capitalist classes and privatisation is an integral part of this process.

As law and policy instruments frame water as an economic good, water is captured by the market and flows towards more profitable ends. Morinville and

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Karunanathan, 'Privatisation Is Not a Means of Implementation for SDG 6' <[http://www.world-psi.org/sites/default/files/documents/research/en\\_sdgpaper\\_hqp.pdf](http://www.world-psi.org/sites/default/files/documents/research/en_sdgpaper_hqp.pdf)> accessed 21 April 2019.

<sup>408</sup> Mahmoud Mohieldin, 'SDGs and PPPs: What's the Connection?' (*World Bank: Infrastructure and Public-Private Partnerships Blog*, 4 December 2018) <<http://blogs.worldbank.org/ppps/sdgs-and-ppps-whats-connection>> accessed 21 April 2019.

<sup>409</sup> Madeline Baer, *Stemming the Tide: Human Rights and Water Policy in a Neoliberal World* (Oxford University Press 2017) 107–145.

<sup>410</sup> Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (Metropolitan Books 2007); Robert Fletcher, 'Capitalizing on Chaos: Climate Change and Disaster Capitalism' (2012) 12 *ephemera* 97.

<sup>411</sup> David Harvey, *The New Imperialism* (Oxford University Press 2003) 137–182.

<sup>412</sup> *ibid.*

Rodina, analysing water access and dispossession of water in game reserves of Botswana, draw attention to the intersection between the HRTW, land and water struggles that they see as “squarely a result of capitalist processes”.<sup>413</sup> Private resorts have secured access to land and water in the region, working hand in hand with legal mechanisms of the state to dispossess local communities.<sup>414</sup> The gradual enclosure of these reserves is a result of the process of turning the game reserve into an economic product, dispossessing communities who traditionally lived on the reserves of water, that now serves the private economy. They argue the decommissioning of water access points, that was a flashpoint of local contestation around the HRTW, “must be read in parallel to the trajectory of dispossession and state-led reforms in the interest of capital accumulation”.<sup>415</sup>

Such a process can also be a significant determinant of climate vulnerability. Malm and Esmailian, examine communities dispossessed of land as part of a privatisation drive in the 1990s in Egypt that saw land laws shifting towards greater rights for private owners. The reforms aimed to pave the way for capital-intensive farming and redirecting the agricultural sector towards more profitable export-oriented growth, primarily pushed by a World Bank-led structural reform.<sup>416</sup> The dispossession of communities from their land, or the “producers from their means their means of production”<sup>417</sup>, forced communities to live “on the edges of climate change”, shifting them to marginalised lands, and stripping them of the means to protect their houses from salinisation and sea-level rise.<sup>418</sup> Through illustrating the connections between accumulation by dispossession and vulnerability to climate

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<sup>413</sup> Cynthia Morinville and Lucy Rodina, ‘Rethinking the Human Right to Water: Water Access and Dispossession in Botswana’s Central Kalahari Game Reserve’ (2013) 49 *Geoforum* 150, 156.

<sup>414</sup> *ibid.*

<sup>415</sup> *ibid.*

<sup>416</sup> Andreas Malm and Shora Esmailian, ‘Ways In and Out of Vulnerability to Climate Change: Abandoning the Mubarak Project in the Northern Nile Delta, Egypt’ (2013) 45 *Antipode* 474.

<sup>417</sup> Adrienne Roberts, ‘Privatizing Social Reproduction: The Primitive Accumulation of Water in an Era of Neoliberalism’ (2008) 40 *Antipode* 535, 541.

<sup>418</sup> Malm and Esmailian (n 416) 486.

change, Malm and Esmailian demonstrate the climate injustices on the ground are not natural or inevitable.<sup>419</sup> Instead, they argue marginality is tied to “capitalist development” and that it is the “total subsumption under capital that produces marginality”.<sup>420</sup>

Similarly, a burgeoning literature on “water grabbing” examines how such relocation and accumulation marginalises communities.<sup>421</sup> Water grabbing is defined as a “process in which powerful actors can take control of, or reallocate to their own benefit, water resources used by local communities or which feed aquatic ecosystems on which their livelihoods are based”.<sup>422</sup> Drawing insight from the discussion on land grabbing, water grabbing is capturing control not just of water itself, but also of the power to decide how it will be used – by whom, when, for how long and for what purposes – in order to control the benefits.<sup>423</sup> Water grabbing is often done through exploiting legal ambiguities around water rights, or through more direct law and policy changes.

Chapter Six further explores how in the Jaipur district in Rajasthan, ground and surface water has been reallocated through technology (pipelines and dams) and policy frameworks that promote industrial and urban drinking water uses for accumulation. Moreover, bans on check dams and water conservation techniques imposed on rural communities through water and climate policies have further served these ends. This redistribution of water has increased climate vulnerability of the rural and peri-urban areas and produced multiple hydro-climatic injustices. The HRTW plays contradictory roles here, dispossessing water from rural and peri-urban

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<sup>419</sup> *ibid* 487.

<sup>420</sup> *ibid*.

<sup>421</sup> See for example: Jennifer Franco, Lyla Mehta and Gert Jan Veldwisch, ‘The Global Politics of Water Grabbing’ (2013) 34 *Third World Quarterly* 1651; Gert Jan Veldwisch, Jennifer Franco and Lyla Mehta, ‘Water Grabbing: Practices of Contestation and Appropriation of Water Resources in the Context of Expanding Global Capital’ in Rutgerd Boelens, Tom Perreault and Jeroen Vos (eds), *Water Justice* (Cambridge University Press 2018); Trevor Birkenholtz, ‘Dispossessing Irrigators: Water Grabbing, Supply-Side Growth and Farmer Resistance in India’ (2016) 69 *Geoforum* 94.

<sup>422</sup> Franco, Mehta and Veldwisch (n 421) 1653.

<sup>423</sup> Veldwisch, Franco and Mehta (n 421) 62.

communities, often justified to promote urban drinking water needs. However, as will be shown, this is a product of the narrow and myopic framework that the HRTW operates in. It also relates to a critique of human rights in a neoliberal world, where a HRTW can exist alongside a other rights, which in some ways are ‘rights to harm’ the environment.<sup>424</sup>

In sum, while the relationship between the HRTW and privatisation has been examined widely, law and policy frameworks have largely sidestepped the issue. The absence of legal frameworks taking a stand on privatisation has meant a narrow framing of the HRTW has occurred, mostly compliant with privatisation processes. Furthermore, while there has been a focus on the privatisation of municipal water services, this is only one part of the equation from a hydro-climatic justice perspective. The broader processes of accumulation and its relationship to climate vulnerability and access to water are fundamental to understanding how the HRTW can be realised. The broader HRTW can play an important role here in challenging the process of accumulation by dispossession and privatisation.<sup>425</sup> As Clarke argues in framing the HRTW as a counter to accumulation by dispossession, it could be “an instrumental tool for the pursuit of an alternative vision of society”.<sup>426</sup>

### *3.3.5 Participation: gaps and challenges in incorporating into a human right to water*

Participation is a human rights principle that has become integral to several human rights and, more broadly, natural resource governance.<sup>427</sup> Participation can further environmental democracy and through involving relevant actors in the decisions made around water. Since at least the 1980s there has been a shift away

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<sup>424</sup> Baxi, ‘Towards a Climate Change Justice Theory?’ (n 86) 22.

<sup>425</sup> Morinville and Rodina (n 413) 157.

<sup>426</sup> Cristy Clark, ‘Water Justice Struggles as a Process of Commoning’ (2019) 54 Community Development Journal 80, 94.

<sup>427</sup> Anne Hellum, Ingunn Ikdahl and Patricia Kameri-Mbote, ‘Turning the Tide: Engendering the Human Right to Water and Sanitation’ in Anne Hellum, Patricia Kameri-Mbote and BCP van Koppen (eds), *Water is Life: Women’s Human Rights in National and Local Water Governance in Southern and Eastern Africa* (Weaver Press 2015) 63–68.

from centralised forms of resource management to emphasise the participation of people and communities.<sup>428</sup> Several commentators writing on the relationship between human rights and climate change (or the environment more generally) have seen ‘participatory rights’, such as the rights relating to environmental information, participation in decision-making processes, and having avenues to access remedies as integral to rights-based approaches to climate change.<sup>429</sup> This approach is also seen as integral for water law to ‘adapt’ to climate change generally.<sup>430</sup>

Participatory rights are recognised in different ways across international, regional and domestic laws. In India, while the HRTW and participation are not directly linked in law and policy, there has been a general participatory framework brought into in water governance through the 73rd and 74th Amendment to the Constitution that devolved control over local water resources to local bodies of governance. This form of subsidiarity sees the lowest (or most local) level of government responsible for drinking water supply. However, participation in water governance in India has also developed in parallel through national policies that have developed based on water as an ‘economic good’.<sup>431</sup> These ‘participatory-management’ programmes are criticised as being separate from the democratic participation that subsidiarity based participation.<sup>432</sup> As has been documented, the “participatory-management” approaches have not been set up to ensure the

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<sup>428</sup> Celestine Nyamu Musembi, ‘How Participation as a Right Enhances Realization of the Rights to Water and Sanitation’ (2014) 33 *Waterlines* 317, 333; Bhaskar Chakrabarti, *Participation at the Crossroads: Decentralisation and Water Politics in West Bengal* (Oriental Blackswan 2016) 2.

<sup>429</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 56; John H Knox, ‘Climate Change and Human Rights Law’ (2010) 50 *Virginia Journal of International Law* 163, 167.

<sup>430</sup> Andrea M Keessen and Helena FMW Van Rijswijk, ‘Adaptation to Climate Change in European Water Law and Policy’ (2012) 8 *Utrecht Law Review* 38, 40.

<sup>431</sup> Philippe Cullet, ‘Water Regulation and Public Participation in the Indian Context’, *Public Participation and Water Resources Management - Where Do We Stand in International Law* (UNESCO 2015) 24.

<sup>432</sup> Videh Upadhyay, ‘Beyond the Buzz: Panchayats, Water User Groups and Law in India With Specific Studies on Participatory Irrigation Management, Rural Water Supply, and Watershed Development’ (Centre for the Study of Law and Governance, Jawaharlal Nehru University 2005) CSLG/WP/06; Cullet, ‘Water Regulation and Public Participation in the Indian Context’ (n 431).



participation of all members of society and are thus not compatible with a rights-based approach.<sup>433</sup>

The importance of the right to participation in international law context is stated under Principle 10 of the Rio Declaration and has been explicitly recognised in relation to water by CEDAW<sup>434</sup> and General Comment 15<sup>435</sup>. CEDAW and General Comment 15 have also linked participation with gender relations, recognising that formal participatory rights may not lead to substantive participation by women. Public participation for climate change related actions is also included under the Paris Agreement on climate change.<sup>436</sup> Furthermore, international law has recognised several procedural environmental rights such as access to information and adequate remedies and these are seen as vital in terms of integrating human rights and climate change.<sup>437</sup>

However, it is essential to recognise that participation is a broad term and there are different forms of participation. Since the 1980s, the growth of ‘participatory management’, as mentioned above, has proliferated in use. Thus, while ‘participation’ has become an aspect of water law and policy around the world, it is often conceived of in a narrow sense. Moreover, it is not grounded in a rights-based framework, and it has been used by national governments and donor agencies who are carrying out

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<sup>433</sup> Priya Sangameswaran, ‘Review of Right to Water: Human Rights, State Legislation, and Civil Society Initiatives in India’ [2007] CISED Technical Report 54; Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 152); Cullet, ‘Water Regulation and Public Participation in the Indian Context’ (n 431).

<sup>434</sup> Convention on the Elimination of All Forms of Discrimination Against Women 1979 (1249 UNTS 13) Article 7 and 14(2).

<sup>435</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 16.

<sup>436</sup> UNFCCC (n 97) Article 12. On gender and the climate regime, see: Rowena Maguire and Bridget Lewis, ‘Women, Human Rights and the Global Climate Regime’ (2018) 9 *Journal of Human Rights and the Environment* 51.

<sup>437</sup> see generally: Knox, ‘Climate Change and Human Rights Law’ (n 429); Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 88.

water projects as a way to delegate project or service provision. In this way, participation is seen as purely instrumental, rather than as a human right.<sup>438</sup>

Participatory governance over natural resources (such as water) have been subject to much academic critique, both at an empirical and theoretical level. Commentators have illustrated the performative nature of many participatory exercises and how communities are often treated as entirely homogenous, disavowing the political reality over access to and control over water.<sup>439</sup> In this narrow sense, participation is seen to re-assert forms of dominance, rather than subvert. Participation through decentralised democratic governance provides some answers to these issues, through providing a platform for access based on democratic processes, and reflecting the values of human rights such as universality and equality.<sup>440</sup> However, even here, local governance and participation, through democratic processes have been prone to political and elite capture. Chakrabarti, for example, examining participation in the water sector in West Bengal shows how local level democratic water governance is captured by political parties, which prevent meaningful participation by regular people.<sup>441</sup> Thus, broader processes and relations of politics, gender, caste, and so on are always present.

Nevertheless, two points can be made here. First, is to recognise that participation is not an end, in itself. However, it is fundamental to recognising the contestations around water and climate relations, from a justice perspective, mean recognition of diverse actors in the political process of accessing water is important. Grounding these in democratic frameworks is a first step for the HRTW. Second, questions of power (caste, gender and other relational inequalities) are fundamental dimensions to any participatory scheme. These are essential challenges from a justice perspective that do not have easy universal fixes. However, as Clark has argued, there

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<sup>438</sup> Musembi (n 428) 317.

<sup>439</sup> Sultana (n 179); Baviskar (n 164).

<sup>440</sup> Cullet, 'Water Regulation and Public Participation in the Indian Context' (n 431).

<sup>441</sup> Chakrabarti (n 428) 65–80.

is a need for the HRTW to engage with these challenges, to try to recast the HRTW towards a truly democratic and participatory right.<sup>442</sup>

### *3.3.6 Extra-territorial obligations and the cross-boundary nature of hydro-climatic change*

Water and climate issues are not confined to sovereign borders and hence are inherent issues of international justice. However, human rights law and international law have had challenges reconciling the legal fiction of borders and state sovereignty with the materiality of hydro-climatic interactions. For example, the first general principle of the International Law Commission's draft articles on the Law of Transboundary Aquifers maintains the sovereignty of states over aquifers, such that each country of a shared aquifer remains sovereign over the part of the aquifer that is under their land.<sup>443</sup> Of course, this clashes with how aquifers exist in fact, with water permeating and flowing between borders on the created surface. Similarly, the vertical relationship between a duty holder (national state) and a rights holder (citizen) has meant that international human rights law lacks mechanisms to allow for victims of one state to bring claims against another for environmental or climate harm.

This relationship between climate change, transboundary water and the HRTW is becoming increasingly relevant. International river basins are significant as they generate roughly 60 per cent of global freshwater flow and are home to approximately 50 per cent of the world's population.<sup>444</sup> Groundwater is perhaps even more significant as it constitutes approximately 98 per cent of freshwater available, with approximately two-thirds of such water located in confined (or fossil)

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<sup>442</sup> Cristy Clark, 'Of What Use Is a Deradicalized Human Right to Water?' (2017) 17 Human Rights Law Review 231; Cristy Clark, 'The Centrality of Community Participation to the Realization of the Right to Water: The Illustrative Case of South Africa' in Alex Loftus and Farhana Sultana (eds), *The Right to Water: Politics, Governance and Social Struggles* (Earthscan 2012).

<sup>443</sup> International Law Commission, 'Draft Articles on the Law of Transboundary Aquifers with Commentaries' (2008) Text adopted by the ILC at its sixtieth session Article 3.

<sup>444</sup> AT Wolf, 'International Water Convention and Treaties', *Encyclopedia of Inland Waters* (Elsevier 2009).

transboundary aquifers.<sup>445</sup> Russell and McCaffrey point out that as technology improves, these paleo-waters will become more accessible, and increase risk over-exploitation, depletion as well as pollution.<sup>446</sup> Climate processes remains a significant cross-cutting issue.

To provide one example, in 1975 India constructed the Farakka Barrage in West Bengal to divert water for a port in Kolkata. As a lower riparian country, Bangladesh relies on the water flow from India. The Farakka Barrage has, among other factors, contributed to salinisation of the river, coastal erosion and threatens the Sundarbans region in Bangladesh.<sup>447</sup> The Sundarbans, which crosses over Bangladesh and India, is an internationally significant area because of its unique biodiversity. The salinisation of freshwater has significantly impacted access to water for drinking, livelihood and food production in Bangladesh<sup>448</sup>. Bangladesh is one of the most vulnerable countries to climate change, with coastal areas facing the daily reality of disappearing.<sup>449</sup> In Chapter 5, these issues are analysed concerning the Indian Sundarbans. However, the same issues are felt in Bangladesh with the added element of a transboundary issue due to activities in upstream India. The discussions here are brief as the empirical chapters of this research do not examine extraterritorial claims or transboundary water courses. However, what the above illustrates is that such elements are an essential part of considering the HRTW in the context of climate change.

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<sup>445</sup> Anna FS Russell and Stephen McCaffrey, 'Tapping Transboundary Waters: Implications of the Right to Water for States Sharing International Watercourses' in Malcolm Langford and Anna FS Russell (eds), *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017) 147.

<sup>446</sup> *ibid.*

<sup>447</sup> Mohammed Abdul Baten and Rashed Al Mahmud Titumir, 'Environmental Challenges of Trans-Boundary Water Resources Management: The Case of Bangladesh' (2016) 2 Sustainable Water Resources Management 13, 21; Abu Bakar Siddique, 'Farakka Barrage Leads to Water Crisis in Bangladesh' *The Third Pole* (2 June 2015) <<https://www.thethirdpole.net/en/2015/06/02/farakka-barrage-leads-to-water-crisis-in-bangladesh/>> accessed 25 April 2019.

<sup>448</sup> Baten and Titumir (n 447); Siddique (n 447).

<sup>449</sup> 'Bangladesh Rated World's Most Vulnerable Country to Climate Change' (n 52).

Human rights lawyers have examined the relationship between climate change, human rights and transboundary water issues in different ways. First, considering a shared transboundary water source where the co-riparian state has overdrawn, diverted, polluted and/or other acts that have impacted their HRTW. Here the focus has been whether an individual can bring a human rights claim against a foreign state for environmental harm.<sup>450</sup> Atapattu states that “a true application of extraterritorial obligations on human rights” would result in nationals of one state being able to bring a claim against transboundary damage caused by a neighbouring state under international human rights law.<sup>451</sup> However, this is not presently the case under international human rights law. More specifically, the HRTW as it stands under domestic and international law does not clearly include extraterritorial obligations. Second, those examining human rights and climate change litigation more generally, ask whether an individual can bring a claim against a foreign state for violating her HRTW because of greenhouse gas emissions that have, for example, caused a drought.<sup>452</sup> This would be particularly relevant to small island states because of low historical emissions and the disproportionate burden of climate impacts. Traditionally, these claims have not been successful because the attribution of specific climate events to specific emitters has been challenging to prove.<sup>453</sup> However, there have been significant advancements in both attribution science and human-rights based climate litigation that could change this in the future.<sup>454</sup>

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<sup>450</sup> Takele Soboka Bulto, ‘Towards Rights-Duties Congruence: Extraterritorial Application of the Human Right to Water in the African Human Rights System’ (2011) 29 *Netherlands Quarterly of Human Rights* 491, 493–498; Alan Boyle, ‘Human Rights and the Environment: Where Next?’ (2012) 23 *European Journal of International Law* 613, 633–641.

<sup>451</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 89.

<sup>452</sup> Boyle (n 450) 641; Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 86; Knox, ‘Climate Change and Human Rights Law’ (n 429) 196.

<sup>453</sup> Siobhan McInerney-Lankford, ‘Climate Change and Human Rights: An Introduction to Legal Issues’ (2009) 33 *Harvard Environmental Law Review* 431, 433.

<sup>454</sup> On attribution science, see: Richard Heede, ‘Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010’ (2014) 122 *Climatic Change* 229. On the ‘third wave’ of climate litigation, see: Ganguly, Setzer and Heyvaert (n 212).

Several commentators have tried to reconcile the deficiencies of the HRTW and transboundary water sources through a close reading of the ICESCR, General Comment 15 and international water law instruments.<sup>455</sup> The starting point has been through emphasising the duties to provide “aid” and “cooperate” that are within ICESCR and international human rights law.<sup>456</sup> In General Comment 15, the Committee emphasised that “depending on the availability of resources, states should facilitate realisation of right to water in other countries, for example through provision of water resources, financial and technical assistance, and provide the necessary aid when required”.<sup>457</sup> Drawing from this, Chavarro, for example, has argued that states should fulfil the HRTW in domestic jurisdictions and consider extraterritorial obligations simultaneously.<sup>458</sup> These interpretations do allow for thinking of a broader HRTW, although it does not quite get us to a point where rights-based claims can be made directly against a co-riparian state. Moreover, whether states accept these obligations is also not clear.

International water law has also not provided much scope for expanding the HRTW. There is no broad acceptance of binding international law instruments for surface and groundwater to date.<sup>459</sup> Countries have generally dealt with transboundary water issues through bilateral and regional initiatives. Two fundamental principles of international environmental law, the ‘no harm principle’ and ‘reasonable and equitable utilisation’ have been cited by international courts and are slowly acquiring

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<sup>455</sup> Russell and McCaffrey (n 445); Christina Leb, ‘The Right to Water in a Transboundary Context: Emergence of Seminal Trends’ (2012) 37 *Water International* 640; Jimena Murillo Chavarro, ‘Extraterritorial Obligations to Ensure the Enjoyment of the Human Right to Water in a Transboundary Context’ (2015) 9 *Human Rights and International Legal Discourse* 90; Bulto (n 450).

<sup>456</sup> There are several references to international cooperation in human rights law. For example: Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945), Article 1(3); International Covenant on Economic, Social and Cultural Rights 1966 (993 UNTS 3) Article 2; UN Committee on Economic Social and Cultural Rights, ‘General Comment 3: The Nature of State Parties’ Obligations (Art. 2, Para. 1, of the Covenant)’ (1990) E/1991/23; UN Committee on Economic Social and Cultural Rights (n 274) paras 30–36.

<sup>457</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 34.

<sup>458</sup> Chavarro (n 455) 98.

<sup>459</sup> The UN Watercourses Convention for example has not been signed by the vast majority of states in the world. There is no binding multilateral legally binding treaty for transboundary aquifers.

customary international law status.<sup>460</sup> These principles regulate how countries can act concerning shared transboundary water sources and provide a measure of protection for individual human rights to water. Furthermore, while under international water law, there has long been a principle that no particular use of water is inherently prioritised (no priority of use rule), this is also slowly shifting. For example, the UN Watercourses Convention (which although not widely adopted by states, is a binding treaty) has given special regard to the requirements of “vital human needs” such that where such needs are threatened, their use takes priority.<sup>461</sup> However, the principles and protections under international water law do not impose specific obligations, hence fall far short of rights-based protections.

Regional initiatives, on the other hand, do show a trend towards integrating the HRTW and for states to respect rights beyond their borders. For example, the Niger Basin Water Charter in 2008 is built on the principle of cooperation and integrates a fundamental right to water, such that the right to water of the basin population is a factor informing the determinant of equitable and reasonable use.<sup>462</sup> The HRTW is also a key principle in the Senegal Water Charter (2002).<sup>463</sup> Regional trends thus point to a slowly evolving international water law regime that tries to incorporate the HRTW and principles of co-operation on transboundary water issues.

Climate change will bring these issues into the spotlight, as much as states have avoided trying to develop transboundary obligations for the HRTW or integrate international water law with rights-based approaches. In the Indian context, India has shared transboundary aquifers with Nepal, Pakistan and Bangladesh. There are also existing bilateral river treaties with Pakistan and Bangladesh. However, none of the countries in South Asia are currently party to the UN Watercourses Convention and

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<sup>460</sup> Joseph W Dellapenna, ‘The Customary International Law of Transboundary Fresh Waters’ (2001) 1 *International Journal of Global Environmental Issues* 264.

<sup>461</sup> UN Watercourses Convention Article 10.

<sup>462</sup> *Charte de L’Eau du Bassin du Niger* (Water Charter of the Niger Basin) (adopted 30 April 2008), preamble; article 1(11) (definition).

<sup>463</sup> *Charte des eaux du fleuve Sénégal* (Water Charter of the Senegal River) (adopted 28 May 2002), article 4.

international water law instruments have had limited explicit application in forming norms between countries. In general, countries in South Asia have chosen to follow bilateral diplomacy with respect to rivers and aquifers, mainly behind closed doors and not subject to broader scrutiny.<sup>464</sup> This approach has inhibited considering human rights and broader climate change dimensions. The Indian sub-continent has several major rivers that cross national borders and are particularly vulnerable to climate processes.<sup>465</sup> Even if multilateral efforts on issues such as transboundary aquifers do not proceed further in coming years, bilateral and regional agreements will either need to be agreed or updated.

### 3.4 Chapter Summary

To summarise, this chapter has discussed how the HRTW has been widely recognised under international and domestic law. Moreover, several human rights are intrinsically linked to the HRTW, namely the right to environment, the right to food, right to health and the right to livelihoods. These rights have also been recognised at international and domestic levels. Although there has been recognition of the HRTW, international law and policy has primarily understood it as a right of access to safe drinking water, often of a particular quantity and quality. Thus, its application has often been restricted to such uses. On the other hand, from a hydro-climatic justice perspective, several different uses, see contestations that create justice and rights-based issues. Recognition of water for livelihoods, food, and ecological uses have not universally been recognised under the HRTW, creating a gap from water and climate justice perspective.

Different dimensions of the HRTW were then analysed. First, caste and gender dimensions were shown as strongly linked to water and climate issues, such

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<sup>464</sup> Stellina Jolly, 'A Legal Analysis of Linking Human Right Approach to Access to Water and Sharing of Trans-Boundary Rivers in South Asia' in JL Kaul and Anupam Jha (eds), *Shifting Horizons of Public International Law* (Springer India 2018) 151.

<sup>465</sup> Raghavan Krishnan and others, 'Unravelling Climate Change in the Hindu Kush Himalaya: Rapid Warming in the Mountains and Increasing Extremes' in Philippus Wester and others (eds), *The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People* (Springer International Publishing 2019).



that their inclusion in law and policy frameworks are necessary. Second, the role of privatisation was examined. Here, it was argued that beyond the focus on privatisation of municipal water services, the processes of law and policy in allocating and reallocating water through the lens of accumulation by dispossession reveal the ways that privatisation, water, and climate come together and differentially impact on the HRTW. Third, while participation has become an essential aspect of water and natural resource governance, as well as international human rights law, the role of participatory governance schemes and the way such participation is incorporated into the delivery of water has been criticised. In particular, entrenching participation as a democratic right has been a particular gap. There are substantial challenges to overcome unequal power structures (such as around gender and caste) in delivering participatory rights and the realisation of the HRTW. Finally, the chapter discussed extra-territorial HRTW obligations. It was illustrated that such obligations are mostly missing from the current framing of HRTW, despite their linkages being clear from a hydro-climatic justice perspective.

Building on Chapter Two, this chapter illustrated the different aspects of the HRTW as it is currently framed in law and policy, while also establishing the links that need to be made with other rights and dimensions from a justice perspective. Looking ahead, the discussion in Chapter Two and Three will inform the analysis of the HRTW in closer, empirical detail through the case studies from India in Chapter Four, Five and Six.

# **CHAPTER 4.**

## **Law and Policy Framework in India for the Human Right to Water and Climate Change**

### **4.1 Introduction**

A range of law and policy instruments are relevant in analysing the HRTW in the context of hydro-climatic justice. The previous two chapters analysed these linkages from a broader, conceptual perspective. This chapter turns attention more closely to domestic law and policy institutions in India and the realisation of the HRTW. This chapter thus serves as a necessary ‘bridge’ to Chapter Five and Chapter Six that follow. Chapter Five and Chapter Six provide a much closer, localised, and empirical analysis of the HRTW and the production of hydro-climatic (in) justices, that draws on how the law and policy instruments discussed in this chapter materialise ‘on the ground’.

This chapter has three sections. The first section provides a background to relevant law and policy in India, outlining the constitutional division of power and the role of different instruments and actors. The background is necessary because India has a complex and fragmented system of environmental and water governance. Moreover, there are socio-political processes that influence how different actors that operate.

Section two analyses the role of water law and policy in realising the HRTW. Water law in India is a fragmented area of law, developed for more than a century

without significant concern for environmental and rights-based dimensions. Its fragmented development leaves a messy set of laws, policies and other legal instruments that are often contradictory or incoherent. It also makes it difficult to discern the reality of how (or what) law operates ‘on the ground’. Accordingly, section two examines the laws, principles, and rules that concern access, control, allocation, conservation and supply of water in India. This framework has far-reaching implications for the realisation of the HRTW across different hydro-social environments in India. Section two discusses several different areas of law. Thus, a summary table is provided at the start of the section to make it easier to navigate the section.

Section three analyses the role of environmental and climate change law and policy in relation to realising the HRTW. The main environmental laws in India date back to the 1980s; however, implementation of these laws has always been an issue. Moreover, climate change provides a new set of issues that the legislature has mostly ignored. For example, there is no climate-specific law in India. There are however some policy documents at the national and state level, but the importance of such policies can vary as they are non-binding. In the absence of an overarching law, issue-specific areas of law and policy that are intrinsically linked to climate change are relevant in analysing the HRTW. This section examines disaster management and coastal zone regulations as they are immediately relevant for Chapter 5, on floods and sea-level rise in West Bengal.

This thesis takes a broad approach to examining the role of law in relation to the HRTW. Legislation, policy, administrative orders, court judgements and directions are all relevant in analysing the HRTW in the context of hydro-climatic justice in India. However, these instruments can’t be looked at in isolation. As the previous chapters have outlined, several processes interact in producing rights issues.

Hence, a wider perspective that examines these laws in relation to water and climate ‘governance’<sup>466</sup> are examined.

Legal instruments play a profound role in mediating the relationship between different actors, institutions, and the environment. Accordingly, law must be examined in this wider governance context. Several different actors are relevant from the local to the global levels. Power struggles between actors, such as the judiciary, executive and legislature, are also relevant here in setting different policy agendas. The influence of international actors, the role of policies of donors, non-governmental organisations and the private sector in the water, climate and environment sectors further complicates the different influential actors. Thus, issues of both law and its relationship to wider governance around water and climate issues are analysed here.

## **4.2 Relevant Legal Instruments and Actors in Realising the Human Right to Water**

Legislation, policy, administrative orders, court judgements and directions are all relevant in analysing the HRTW in the context of hydro-climatic justice in India. Furthermore, several different institutions and actors, from the local to international level, are relevant. Power struggles between actors, such as the judiciary, executive and legislature, are also relevant in setting different policy agendas. The influence of international actors, the role of policies of donors, non-governmental organisations and the private sector in the water, climate and environment sectors further complicates the different influential actors. This section provides a brief background to these various elements.

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<sup>466</sup> Broadly speaking governance refers to regulatory processes, mechanism and organisation through which actors influence actions and outcomes. Here, we can see how the legal instruments fit into the broader remit of these processes. For a definition on environmental governance, see: Maria Carmen Lemos and Arun Agrawal, ‘Environmental Governance’ (2006) 31 Annual Review of Environment and Resources 297.

#### 4.2.1 Constitutional division of power over water and the environment

Constitution is founded on India being a Union of states. The Constitution divides responsibilities between the Central and state-level governments. The Central and state governments have the exclusive authority of Union and State lists in the Constitution, respectively. Both levels of government also have jurisdiction over activities in the Concurrent lists, with the Central Government retaining a dominant power. The Centre is responsible for subjects that are not on the three lists.<sup>467</sup> Furthermore, the Centre is empowered to legislate on any subject in the State list in the ‘national interest’, or it can also enact laws on state subjects if two or more state legislatures provide consent to such legislation (where it would apply to those who have consented).<sup>468</sup> Table 3 below provides an overview.

Table 3 Relevant responsibilities under the Constitution in the context of the HRTW

Government	Responsibility
Union Government	Responsibility over: <ul style="list-style-type: none"><li>• Inter-state rivers and river valleys where this is declared by Parliament through law</li><li>• Shipping and navigation on inland waterways where Parliament declares the waterway a National Waterway</li><li>• As well as any aspect where state assents for the Union to act.</li></ul>
State	Responsibility over: <ul style="list-style-type: none"><li>• water supplies;</li><li>• irrigation and canals</li><li>• drainage</li><li>• embankments</li><li>• water storage</li><li>• hydropower</li><li>• agriculture</li><li>• land</li><li>• fisheries</li><li>• public health</li></ul>

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<sup>467</sup> Constitution of India Seventh Schedule, List II.

<sup>468</sup> *ibid* art 252.

	subject to not being on the Union List (above)
Concurrent	Shipping and Navigation on inland waterways

State governments have wide-ranging powers over water. As Table 1 shows, state governments have an important role in almost every aspect related to the HRTW. Nevertheless, the Centre also has historically played an important role through administrative directions, policies and guidelines on different aspects of water governance where it sees fit. For example, in drinking water the executive branch of the central government has issued directions and implemented programmes, as the importance of drinking water to the public has meant it could not depend on state governments, who may face greater budgetary or capacity constraints.

Local governments also have an important role. The 73<sup>rd</sup> and 74<sup>th</sup> amendments to the Constitution devolved a large amount of responsibility to local government. Thus, drinking water supply, minor irrigation, watershed management, and fisheries in a rural context are the responsibility of village local governments (*Panchayats*)

<sup>469</sup> <sup>470</sup>

The all-encompassing impacts of climate change mean that many aspects of the Constitution are relevant. Water, land tenure, agriculture, public health, sanitation and industries are all primarily the responsibilities of states.<sup>471</sup> However, the centre has also taken a lead role in the framework of environmental legislation and policy.<sup>472</sup> Disaster management is another area where the centre has taken a lead role in framing

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<sup>469</sup> There is a three-tier panchayat administrative system in rural areas. Gram Panahayts are the local self-governing unit at the village level, above this is the Block Panchayat and then the District Panchayat.

<sup>470</sup> Constitution of India arts 243G and 243W of the Eleventh and Twelfth Schedule.

<sup>471</sup> *ibid* List II.

<sup>472</sup> Such as through the Water (Prevention and Control of Pollution) Act 1974; Environmental (Protection) Act 1986.

disaster legislation, policies and providing relief funding.<sup>473</sup> Accordingly, in a climate context, both the centre and states can thus be said to have a responsibility to enact different laws, policies and guidelines.

This division of power is particularly important from a justice perspective. Different power geometries affect the actions that can be taken by different actors, the relationships between such actors and individuals and communities. For example, while local governments have an important role in water management, they often lack the financial strength to act. Local governments can also be influenced at varying levels with party politics at the state level. Co-ordination between the different levels of government can also vary. For example, Chakrabarti notes in his work in West Bengal that local government co-ordination with state bureaucracy is “functionally disjointed and regionally uncoordinated”.<sup>474</sup> In other words, the fragmented nature of responsibilities, which can be for a good reason, can be severely hampered where such organisations are not working together. Despite written laws suggesting roles and responsibilities, it becomes essential to examine how different actors operate in fact and how these processes intertwine with climatic and hydrological processes (as Chapter Five and Chapter Six will do).

#### *4.2.2 The role of law and policy instruments*

There are several different and varied instruments relevant to examining the HRTW in the context of hydro-climatic justice. The Constitution is the starting point, as it provides several fundamental rights. However, the Constitution does not expressly recognise a fundamental right to water. As discussed earlier, the right has been read into Article 21, the right to life by the Supreme Court of India.<sup>475</sup> The Constitution is also based on the principles of social justice and equality.<sup>476</sup> Accordingly, there is a right to freedom from discrimination based on caste, religion,

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<sup>473</sup> For example through the Disaster Management Act 2005.

<sup>474</sup> Chakrabarti (n 428) 107–108.

<sup>475</sup> *Subhash Kumar v State of Bihar & Ors* (n 68).

<sup>476</sup> Constitution of India, preamble.

gender, and with specific mention of water.<sup>477</sup> Furthermore, the Constitution has several articles that direct the policies of the state (“directive principles”), that include raising the level of nutrition and standard of living of its people and the improvement of public health and protect and improve the environment.<sup>478</sup> According to Article 37 of the Constitution, these principles are not enforceable by the court, but they nevertheless are fundamental to the governance of the country and are duties on the state to apply in law.<sup>479</sup> Hence, while they are not justiciable, they are binding and can be seen as ‘guiding’ the development of fundamental rights.<sup>480</sup>

Legislation, policies and administrative orders are also important instruments in implementing the HRTW and will be the focus in coming chapters. Legislation is enacted in India at both a central and state level. However, there is no framework ‘human right to water’, ‘drinking water’ or even ‘water’ legislation in India. Moreover, because many subjects such as water are the responsibility of individual states, the centre has often issued “model legislation” to encourage states to adopt coherent laws relating to water. The executive (at both the Union and state level) has used policy instruments and administrative orders to fill the legislative vacuum. The overuse of policies and orders has been criticised because they do not lead to more substantive legislation, therefore leaving a ‘democratic deficit’ where the executive uses policies for its own ends, without furthering democratic rights and decisions through parliament.<sup>481</sup> This trend can be observed with water and climate policy, where there has been no real reform in legislation, though several policies have been produced. Finally, apart from policies and administrative orders, less formal arrangements, including customary rules and norms are also relevant, particularly in

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<sup>477</sup> *ibid* art 15(2)(b).

<sup>478</sup> *ibid* art 47.

<sup>479</sup> *ibid* art 37.

<sup>480</sup> Jona Razzaque, *Public Interest Environmental Litigation in India, Pakistan and Bangladesh* (Kluwer Law International 2004) 69. The Constitution also places duties on citizens, and under Article 51A, there is a fundamental duty on citizens to “protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures”.

<sup>481</sup> Cullet, ‘Is Water Policy the New Water Law? Rethinking the Place of Law in Water Sector Reforms’ (n 393) 72.



local contexts. These are not dealt with in much depth here, as they are not central to this research.

#### *4.2.3 International law, policy and transnational actors*

In addition to domestic law, international law and policy is also relevant. India's dualist legal system means that international treaties are not directly binding unless the legislature enacts legislation giving it effect. Till the Paris Agreement, the lack of legally binding obligations on developing countries, meant India did not have specific obligations under the climate regime (however broader obligations under international environmental law still applied). Despite the lack of binding obligation, the National Action Plan on Climate Change, discussed in more depth later in this chapter, exists as a result of the political context of the global climate change regime.<sup>482</sup>

In addition, under the Paris Agreement, India made a Nationally Determined Contribution with three broad pledges: (i) to reduce emissions intensity by 33-5 per cent from 2005 levels by 2030; (ii) to increase share of non-fossil fuel based electricity to 40 per cent of total capacity by 2030; (iii) creation of an additional carbon sink of 2.5-3 billion tonnes of carbon dioxide through afforestation schemes. In addition, there is a general pledge to improve adaptation, which is too vague to ensure accountability. These obligations don't go beyond current domestic policy ambitions and are more a consolidation of activity that was already planned, than greater ambition on climate.<sup>483</sup> Moreover, with the exception of a general pledge to adapt to climate change, the more substantive pledges are of tangential importance in relation to water.

Non-binding international law and policies have also played a significant role in the development of water and environmental law. For example, the Stockholm

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<sup>482</sup> Navroz K Dubash and Neha B Joseph, 'Evolution of Institutions for Climate Policy in India' (2016) *LI Economic & Political Weekly* 44, 47.

<sup>483</sup> Navroz K Dubash and Shibani Ghosh, 'National Climate Policies and Institutions' in Navroz K Dubash (ed), *India in a Warming World: Integrating Climate Change and Development* (Oxford University Press 2019) 338.

Declaration in 1972 lead to key framework legislation around water and air pollution and environmental protection.<sup>484</sup> In the water sector, some of the critical reforms in drinking water and water policy in India were as a result of the so-called ‘Dublin Principles’. The Dublin Principles came from the Dublin Statement of on Water and Sustainable Development, an output of the International Conference on Water and the Environment.<sup>485</sup> Although non-binding and separate from the multilateral process on international water law, the Dublin Principles have had an overwhelming influence on water sector reform.<sup>486</sup> The most influential aspect of the Dublin Principles was its emphasis on water as an economic good, that was taken up by international financial institutions, and multilateral and regional donor banks reforms in the water sectors over the 1990s and 2000s.

Finally, international actors and policies have played an essential role in other areas of law and governance that impact the HRTW in the context of climate change. Hydropower is one such area, examined in this thesis. In the 1950s, an American river governance scheme, the Tennessee Valley Authority, was replicated in the Damodar River that is shared by West Bengal and the state of Bihar<sup>487</sup>. The World Bank and the Asia Development Bank have also played an important role here in funding the scheme and providing technical assistance. Chapter Five and Chapter Six both analyse this in greater detail. The role of such policies, effectively imported and transplanted from different socio-ecological contexts, has had a profound impact on the HRTW as will be analysed later.

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<sup>484</sup> Water (Prevention and Control of Pollution) Act, the Air (Prevention and Control of Pollution) Act and the Environment Protection Act 1986.

<sup>485</sup> International Conference on Water and the Environment, ‘Dublin Statement and Report of the Conference’ (ICWE 1992).

<sup>486</sup> Salman MA Salman and Daniel D Bradlow, ‘Regulatory Frameworks for Water Resources Management: A Comparative Study’ (The World Bank 2006).

<sup>487</sup> Now divided between Jharkand and West Bengal because Bihar was divided into two states.

#### 4.2.4 Interventions by the judiciary

In addition to legislation and policy instruments, judicial decisions have been significant in realising human rights and environmental laws in India.<sup>488</sup> Recognition of the HRTW, as well as the human right to a healthy environment and other human rights, have been through the judiciary. The introduction of public interest litigation (“PIL”) in the 1980s witnessed a shift towards rights-based litigation, where the judiciary has taken a pro-active role in the fulfilment of human rights and environmental protection. Since the advent of PIL, the Supreme Court, in particular, intervened in rights-based issues with particular impact.

Today, the legacy of the judiciary on environmental and human rights is mixed. In its early stages, PIL was viewed as a pillar of hope, protecting the rights of the poor and radically shifting the relationship between citizen and state.<sup>489</sup> The Supreme Court itself described its role as the “last resort of the oppressed and bewildered”.<sup>490</sup> The progressive role of the Courts began to shift in the 2000s, as the Indian economy shifted towards a neo-liberal model. Menon argues that the Court began to show a trend of “Environment trumps People, Development trump Environment”.<sup>491</sup> She argues that “environmental” reasons were often used to usurp people’s rights, for example, where communities living in slums had their homes demolished due to “environmental hygiene” concerns.<sup>492</sup> Furthermore, “development”

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<sup>488</sup> There is a rich literature on human rights and environmental jurisprudence through the Courts in India. See, for example: Upendra Baxi, ‘Taking Suffering Seriously: Social Action Litigation in the Supreme Court of India’ (1985) 4 Third World Legal Studies 107; Razzaque (n 480); Rajagopal, ‘Pro-Human Rights but Anti-Poor?’ (n 242); Geetanjay Sahu, ‘Public Interest Environmental Litigations in India: Contributions and Complications’ (2008) 69 The Indian Journal of Political Science 745; Gitanjali Nain Gill, ‘Human Rights and the Environment in India: Access through Public Interest Litigation’ (2012) 14 Environmental Law Review 200; Anuj Bhuvania, *Courting the People: Public Interest Litigation and Political Society in Post-Emergency India* (Cambridge University Press 2017).

<sup>489</sup> Mayur Suresh and Siddharth Narrain, ‘Introduction’ in Mayur Suresh and Siddharth Narrain (eds), *The Shifting Scales of Justice: The Supreme Court in Neo-liberal India* (Orient BlackSwan 2014).

<sup>490</sup> *State of Rajasthan v Union of India* (1993) 4 SCC 111.

<sup>491</sup> Nivedita Menon, ‘Environment and the Will to Rule: Supreme Court and Public Interest Litigation in the 1990s’ in Mayur Suresh and Siddharth Narrain (eds), *The Shifting Scales of Justice: The Supreme Court in Neo-liberal India* (Orient BlackSwan 2014) 63.

<sup>492</sup> *ibid* 65.

was used as a reason to usurp environmental concerns, for example, where constructing large shopping malls was legitimised over conservation and environmental concerns.<sup>493</sup> Others have critiqued the trend of “individualised” and “attention-seeking” judgements, where the outcomes of the cases are a consequence of individual judges.<sup>494</sup>

Notwithstanding, the role of the judiciary remains an important one for human rights, water and climate change. As will be demonstrated throughout this chapter, the judiciary has made significant interventions on water law and policy, including through the very recognition of the HRTW, that remain pivotal its realisation in the context of climate change. Its role in the future will remain relevant, although the mixed legacy is important to keep in mind. However, the issues identified above will constraint the expectation of environmental and rights-activists.

### **4.3 Water Law and Policy and the Realisation of the Human Right to Water**

The rules governing access to and control over water are critically important to how water is used, allocated and shared. These rules mediate hydro-climatic justice and the realisation of the HRTW. Access and control over water have always been a central issue in water governance. Gaining access and power can enable a large amount of influence, that becomes integral in the shaping hydro-social configurations, as discussed in Chapter Two. The rules around access and control can allocate a particular stake in water, either through an ownership or a usufructuary water right. Accordingly, by way of geographic location, property right, licence or other socio-political considerations, a particular claim can be granted for the access and control of water.

This section maps and analyses the range of laws and policies that are relevant in the realisation of the HRTW. It begins looking at the expansion of Article 21 of the

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<sup>493</sup> *ibid* 67.

<sup>494</sup> Sahu (n 488) 753.

Indian Constitution that is the source of the HRTW, as well as analysing fundamental principles that underpin the ownership, access, and sovereign rights to water. It then analyses the different laws that pertain to surface and groundwater. The next three sections examine embankments, dams and hydropower, and drinking water. Finally, the section ends with looking at how water law and policy in India accounts for water conservation and preservation that is important in the context of water scarcity and erratic rainfall.

As it is becoming clear, the myriad of laws means that there are several different aspects that this section analyses. At the same time, the aim of this section is not to have an exhaustive analysis of each matter. Instead, to link how the operation of these laws, principles and policies, including their gaps and strengths, relate to the HRTW and the production of hydro-climate (in)justices.

#### *4.3.1 Expanding article 21: recognising the human right to water*

As mentioned already, the HRTW has been recognised in India through the judiciary reading it into Article 21, the right to life.<sup>495</sup> The right is justiciable and enforceable, as Courts have shown a willingness to intervene. The judiciary has, to some extent, linked different rights that are related to the HRTW.<sup>496</sup> For example, in a significant case, *Vellore Citizens Welfare Forum v Union of India*, a petition by a civil society group was concerned about the water pollution caused by the hundreds of tanneries in the state of Tamil Nadu.<sup>497</sup> The Court recognised the linkages between the right to environment and water, as well as the importance of the tanneries to the local economy. Drawing on several principles, such as the precautionary principle and sustainable development, the Court directed the industries to set up pollution control devices within a specific period, and then obtain the government's consent to operate, or shutdown. The case illustrates the way the Court has linked different human rights that are recognised under Article 21, as well as principles of international environmental law.

On the one hand, this illustrates the potential of the Courts and the law to further HRTW, possibly providing scope for stronger linkages with climate-related issues. On the other hand, as the previous chapter mentioned, the scope and contents of the right have never adequately developed beyond mere recognition of the right. For example, while it is clear that Article 21 has been expanded to include the HRTW, that is “safe”, and “clean”, how that is met or defined is not clear. This is not to say that it is the role of the judiciary to do this. Instead, it is here that the role of legislation and policy instruments need to step in.

#### 4.3.2 *Public trust doctrine, climate change and the human right to water*

The role of the state is important when it comes to questions around natural resources, including water. The state can be an important mediator of relations around

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<sup>495</sup> *Subhash Kumar v State of Bihar & Ors* (n 68).

<sup>496</sup> *ibid*; *MC Mehta v Kamal Nath* (2000) 6 SCC 213 (Supreme Court of India).

<sup>497</sup> *Vellore Citizens Welfare Forum v Union Of India & Ors* (n 310).

water, determining who has or does not have water, how water is used, that has multiple implications for hydro-climatic justice. In the Indian context, historically, no one actor (including the state) has been able to claim ‘ownership’ rights over water as such. Even during the colonial period, this understanding remained.<sup>498</sup> At the same time, colonial legislation established the importance of the state in allocating and reallocating water.<sup>499</sup> This brings into question of the state’s role and the exact scope of how the state could do this under the spotlight. In the 1990s, the Supreme Court clarified that the State’s role concerning water is as a ‘trustee’ (not as an owner) under the public trust doctrine.<sup>500</sup> The public trust doctrine is the idea that some parts of the ‘natural’ world (e.g. water) are so important and essential to human life that private interests cannot trump them.<sup>501</sup> Accordingly, the sovereign must steward water to prevent such capture, and ensuring it is maintained for future generations. Thus, the doctrine holds that the sovereign manages water as a trustee (rather than as an owner) with specific responsibilities.

But the public trust doctrine still leaves the question of how the state should do this. The Courts have provided limited detail on this crucial aspect. In *MC Mehta v Kamal Nath*, the original case that affirmed the state’s role as a trustee, the Supreme Court grounded the public trust doctrine on both social and ecological grounds, applying international environmental law principles of ‘polluters pays’ and ‘the precautionary principle’.<sup>502</sup> In *Fomento Resorts & Hotels v Minguel Martins*, the Supreme Court also linked in the public trust doctrine with the principles of

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<sup>498</sup> Chhatrapati Singh, *Water Rights and Principles of Water Resources Management* (NM Tripathi 1991) 14. This was reinforced by a ruling of the Madras High Court in 1936, stating that the government did not have a proprietary right to water, rather a “sovereign right”. *Secretary of State v Nageswara Iyer* [1936] AIR 923 (Madras High Court).

<sup>499</sup> Videdh Upadhyay, ‘The Ownership of Water in Indian Laws’ in Ramaswamy R Iyer (ed), *Water and the Laws in India* (SAGE 2009) 136–137.

<sup>500</sup> *MC Mehta v Kamal Nath* (1997) 1 SCC 388 (Supreme Court of India) [34].

<sup>501</sup> David Takacs, ‘The Public Trust Doctrine, Environmental Human Rights, and the Future of Private Property’ (2008) 16 New York University Environmental Law Journal 711, 718. See more generally on the public trust doctrine: Joseph Sax, ‘The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention’ (1970) 68 Michigan Law Review 471.

<sup>502</sup> *MC Mehta v Kamal Nath* (n 500).

‘intergenerational equity’.<sup>503</sup> However, beyond the pronouncement of the Courts from time to time, there has been limited application or elaboration on the public trust doctrine. For example, subsequent water policies in India have failed to mention the public trust doctrine. In some instances, individual state governments have specifically tried, through legislation, to undermine the public trust doctrine and assert ownership rights over water.<sup>504</sup> Thus, contradictions appear in the legal framework between legislation and judicial decisions on the role of the state.

Further contradictions have occurred in how the Courts have inconsistently applied the public trust doctrine to surface and groundwater separately, including in the past not ruling that the public trust doctrine did not apply to groundwater in the same way to surface water.<sup>505</sup> This creates significant incoherence in how the public trust doctrine is applied today. On the other hand, the Courts have, from time to time, linked the public trust doctrine to existing human rights (including the HRTW).<sup>506</sup> Supreme Court has noted that the “public trust doctrine in our country, it would appear, has grown from Article 21 of the Constitution.”<sup>507</sup> The High Court of Kerala has stated that inaction by the trustee is “tantamount to infringement” of the HRTW.<sup>508</sup> These cases provide a link between the HRTW and the human right to a healthy environment. Drawing on this, Takacs has argued that the judiciary has “put

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<sup>503</sup> *Fomento Resorts & Hotels & Anr v Minguel Martins & Ors* (2009) 3 SCC 571 (Supreme Court of India).

<sup>504</sup> For example, legislation regarding water in Jammu and Kashmir states that ‘every water source in the State is, and shall remain, the property of the Government’. See: Jammu and Kashmir Water Resources (Regulation and Management) Act 2010 section 3. Similarly, the Bihar Irrigation Act states that “all rights in the water of any river, natural stream or natural drainage channel, natural lake or other natural collection of water shall vest in the State Government”, see: Bihar Irrigation Act 1997 section 3.

<sup>505</sup> See for example its application in: *Perumatty Grama Panchayat v State Of Kerala* (2003) 1 KLT 731 (High Court of Kerala); *Hindustan Coca-Cola Bevarages (P) Ltd v Perumatty Grama Panchayat* (2005) 2 KLT 554 (High Court of Kerala); *State of West Bengal v Kesoram Industries* (2004) 10 SCC 201 (Supreme Court of India).

<sup>506</sup> Including AP; MI builders;

<sup>507</sup> *MI Builders Private Ltd v Radhey Shyam Sahu* (n 350) 506–507.

<sup>508</sup> *Perumatty Grama Panchayat v State Of Kerala* (n 505) para 34.



the public trust doctrine” to the service of constitutionally guaranteed environmental rights in India.<sup>509</sup>

The public trust doctrine imposes duties upon the state, to act in the public interest, as it is not the owner but only the trustee. It also provides a basis for fostering distributive justice in the sharing of and access to water, as the trustee is duty-bound to distribute or utilise water in a way that neither deprives individuals or groups of access to domestic water nor significantly affects ecosystem needs.<sup>510</sup> While conceptually different to the HRTW, as it provides duties on the state (rather than rights for individuals) through linking it as serving the HRTW, the Courts have provided an avenue for bringing a commons perspective to the HRTW.<sup>511</sup> In the context of climate change, there has been a renewed interest in unlocking the potential of the Public Trust Doctrine.<sup>512</sup> One perceived advantage is the scope for moving away from an inflexible property or riparian rights framework and placing duties on the state to respond dynamically to public needs, given the need to respond to changes in the global water cycle and erratic rainfall.<sup>513</sup> In this respect, Jackson and Others have asserted that new water legislation must be reformed in line with the principles of the Public Trust Doctrine.<sup>514</sup>

While the Public Trust Doctrine provides the potential for a realignment of water relations, this is not a given. The core notion of the Public Trust Doctrine could

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<sup>509</sup> Takacs (n 501) 739.

<sup>510</sup> Chhatrapati Singh, *Water Rights and Principles of Water Resources Management* (NM Tripathi 1991) 76; Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 152) 42.

<sup>511</sup> see generally: Takacs (n 501).

<sup>512</sup> Sarah Jackson, Oliver M Brandes and Randy Christensen, ‘Lessons from an Ancient Concept: How the Public Trust Doctrine Will Meet Obligations to Protect the Environment and the Public Interest in Canadian Water Management and Governance in the 21st Century’ (2012) 23 *Journal of Environmental Law and Practice* 175; Robin Kundis Craig, ‘Adapting to Climate Change: The Potential Role of State Common-Law Public Trust Doctrines’ [2009] *Vermont Law Review* 781; Takacs (n 501).

<sup>513</sup> Craig (n 512).

<sup>514</sup> Jackson, Brandes and Christensen (n 512).

also re-assert the state's ability to control water.<sup>515</sup> It also does not give any indication of how the state has to exercise its control, as 'public interest' can be interpreted in many ways. The notion of public trust thus has "no direct links with social concerns or human rights".<sup>516</sup> Critically, with the many gaps in water legislation and policy around the public trust's application, the public trust doctrine requires the Courts having to continuously interpret public trust.<sup>517</sup> Indeed, in India further articulation of the Public Trust is necessary to translate its effect beyond the case law. Filling the conceptual gaps are essential because state governments have often tried to re-assert their role as an owner or 'water-lord' over water or been absent in governing water for the 'public' interest.

#### *4.3.3 Access and control over water: the importance of land and geography*

Apart from the role of the state, how individuals and private entities have access to and control over water is critical to analysing how water is shared, distributed and conserved. The 'rights' (distinct from 'human rights') of individuals to draw water, how much can they draw, who has the authority to decide this, and how are essential questions in this context. The legal framework on access and control over water in India is complex. There are different rules relating to surface and groundwater, based on a fiction that such waters are separated.

Land ownership is a critical factor in how the legal framework gives 'rights' to water. For surface water, a riparian rights framework operates that was developed in line with the English common law. This provides individuals who own land abutting a waterway (such as a stream or river) certain rights to take water from the waterway.<sup>518</sup> Under the Indian Easements Act 1882, a colonial law still in operation, a landowner has a right to use water from streams that are passing through his land, subject to not "unreasonably polluting" or "materially altering" the quantity, direction, force or

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<sup>515</sup> Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 152) 43.

<sup>516</sup> Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 80) 43.

<sup>517</sup> Jackson, Brandes and Christensen (n 512).

<sup>518</sup> *Secretary of State v Sannidhiraju Subbaraudu* (1932) 46 AIR (Privy Council).

temperature.<sup>519</sup> The landowner has a right to use the water for drinking, household, agriculture, irrigation, or manufacturing as long as he stays within these limits.<sup>520</sup> In principle, this provides several restrictions on water use.

There are several observations on the riparian rights framework and the realisation of the HRTW in the context of hydro-climatic justice. First, as riparian rights link to land ownership, landowners have a large amount of power. This can perpetuate further injustices on those who do not have riparian land. In times of water scarcity, this allows riparian owners with disproportionate amounts of power and denies access for non-riparian holders. Land ownership is unequal and stratified in India, along the lines of caste, class, and gender. National surveys illustrate that Dalits, tribals, and women have a much smaller share of landholdings.<sup>521</sup> Furthermore, the landholdings among marginalised communities are often smaller or more remote (particularly in the case of tribal populations).<sup>522</sup> Despite changes in the rural economy in the last twenty years, these stratifications are further compounded by caste divisions that exist around credit, markets, and technology that make it more difficult for even those with plots of land to necessarily access water.<sup>523</sup>

Second, the riparian rights framework originates in England, and many of the embedded assumptions in the legal framework base themselves on English riverine environments. Hill explains that riparian law evolved primarily due to environmental factors, and two key factors were average rainfall and relatively constant rivers in

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<sup>519</sup> Easements Act 1882 s 7. These principles are reflected in case law as well, see: Singh, *Water Rights and Principles of Water Resources Management* (n 510) 16–17.

<sup>520</sup> Easements Act s 7(j).

<sup>521</sup> Ministry of Agriculture & Farmers Welfare, Government of India, ‘Agricultural Census 2015-2016: All India Report on Number and Area of Operational Holding’ (Government of India 2018) <[http://agcensus.nic.in/document/agcen1516/T1\\_ac\\_2015\\_16.pdf](http://agcensus.nic.in/document/agcen1516/T1_ac_2015_16.pdf)> accessed 30 June 2019.

<sup>522</sup> Subodh Varma, ‘Caste Stranglehold in Agriculture’ *NewsClick* (10 October 2018) <<https://www.newsclick.in/caste-stranglehold-agriculture>> accessed 30 June 2019.

<sup>523</sup> David Mosse, ‘Caste and Development: Contemporary Perspectives on a Structure of Discrimination and Advantage’ (2018) 110 *World Development* 422.

England.<sup>524</sup> These factors had a profound impact when universalised and transposed, under colonial rule, particularly in Bengal where rainfall patterns are highly variable, and rivers are dynamic and flood-prone. In Bengal, rivers carry a large amount of silt and sand, that flood regularly and can change the river courses drastically. Similarly, in wetlands and other areas, the distinction between land and water are less clear. The binaries of land and water, embedded in riparian law framework, do not correspond with the material reality.<sup>525</sup> Hill points out that one of the critical benefits of the riparian framework at the time was the ability for landowners to claim legal recourse to industrial activities that impacted downstream water.<sup>526</sup> Gaining riparian rights to get water to use for farming and other activities encouraged settlement by rivers in England. However, such a consequence had devastating impacts in India, where flood-prone, dynamic rivers, destroyed lands and caused immense hardships of riverine communities.

Finally, while the riparian doctrine allows an abutting landowner the ability to draw water subject to ‘reasonable use’, the question of ‘what reasonable use is’ usually falls on the Courts. This means there is an element of ad-hoc decision making. Dellapenna writes that riparian rights “have serious problems as a mechanism for addressing water shortages, and thus for addressing the most serious disruptions relating to freshwater that arise because of global climate disruption”.<sup>527</sup> He cites vagueness, instability, and unpredictability of the criteria of the decision concerning a water dispute, the lack of process for managing water during extreme shortages, and systematic bias in favour of large users as strong reasons to move away from riparian rights.<sup>528</sup> In this context, several commentators have argued that regulated riparianism

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<sup>524</sup> Christopher V Hill, ‘Water and Power: Riparian Legislation and Agrarian Control in Colonial Bengal’ (1990) 14 *Environmental History Review* 1.

<sup>525</sup> Mukhopadhyay (n 209) 73–93.

<sup>526</sup> Hill (n 524).

<sup>527</sup> Joseph W Dellapenna, ‘Global Climate Disruption and Water Law Reform’ (2010) 15 *Widener Law Review* 409, 425.

<sup>528</sup> *ibid.*

in line with public trust doctrine is necessary in a climate-pressed world.<sup>529</sup> A few states in India have introduced a regulated riparian model, where licences must be sought that allows the state government to weigh up different considerations.<sup>530</sup>

Concerning groundwater, different rules and principles apply. However, landowners again have a significant amount of control and power. The basic principles of access to and control over groundwater in India are reflected in the Indian Easements Act 1882, giving landowners an unlimited right to collect and dispose of all water found under their land.<sup>531</sup> This rule generally prevails today. However, a few states have enacted legislation to regulate groundwater use. Where a state has enacted legislation, for example, West Bengal, a licencing scheme operates for any new groundwater abstraction that is for uses other than necessary domestic and drinking water use (i.e. industrial and agricultural use).<sup>532</sup> However, such legislation does not challenge existing users, who can carry on without restriction.

If a state has not enacted its legislation, the centre can play a role in regulation and control of the use of groundwater if there is an overriding environmental impact. The Environment (Protection) Act 1986 enables the Central Groundwater Authority (“CGWA”) to step in and regulate any blocks in a state that are facing acute crises. The CGWA acts as both a surveyor of groundwater and regulator here. It notified blocks as ‘over-exploited’ or ‘critical’ and prevent further exploitation of groundwater in those areas. Rajasthan, for example, is a state where the majority of blocks in the state have been classified under these categories by the CGWA. Once notified, the District Collector becomes the authorised officer to carry out monitoring and enforcement. However, once again, existing users of groundwater in these areas can continue to exploit.

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<sup>529</sup> Dellapenna (n 527); Tony George Puthucherril, ‘Riparianism in Indian Water Jurisprudence’ in Ramaswamy R Iyer (ed), *Water and the Laws in India* (SAGE 2009).

<sup>530</sup> For example, Maharashtra. See: Maharashtra Water Resources Regulatory Authority Act, 2005.

<sup>531</sup> Sujith Koonan, ‘Revamping the Groundwater Regime in India: Towards Ensuring Equity and Sustainability’ (2016) 12 Socio-Legal Review 45.

<sup>532</sup> The West Bengal Ground Water Resources (Management, Control and Regulation) Act 2005.

Groundwater is vital as a buffer during lean seasons of rain. To date, the rising exploitation of groundwater has depleted aquifers in India, creating a ‘groundwater crisis’. There are critical linkages between climate change, groundwater exploitation and the replenishment of groundwater. For example, even where groundwater recharge increases, there is a time lag before aquifers can respond. Recharge is negatively and positively affected by changes in the global water cycle. Climate impacts include saltwater intrusion concerning coastal aquifers. However, the legal framework for groundwater, to date, has not considered the social or climatic impacts of groundwater exploitation. Landowners have a disproportionate amount of power over groundwater that is embedded in the rules. Moreover, the interaction of such rules, technologies, political economy, as well as hydro-climatic processes mediate who has or does not have water.

#### *4.3.4 Contestations over the embankment*

The increasing risks of floods and sea-level rise have brought embankments into focus. Chapter Five explores the embankment issue further through a case study in the Sundarbans area and the Damodar River in West Bengal. Embankments have been used for centuries to ‘protect’ communities from the river and sea. The legacy of embankments and their use today is contested. Historically, under the rationale of improving the productivity of land and thereby increasing colonial revenue through taxes, large embankments were built to prevent water from coming into land utilised for agriculture.<sup>533</sup> However, this soon became problematic as to where flooding breached the embankment; floods would be more devastating than had the embankment not been there. Furthermore, the impacts of the embankments can also straight-jacket a river as it made its way downstream, further increasing the risk of worse flooding downstream, including embankment breaches.<sup>534</sup> In coastal areas,

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<sup>533</sup> Mukhopadhyay (n 209) 25–43.

<sup>534</sup> Banjot Kaur, ‘Why Does Kosi River Cause Devastating Floods So Often? Answer Lies in Massive Siltation: Study’ [2018] *Down to Earth* <<https://www.downtoearth.org.in/news/water/why-does-kosi-river-cause-devastating-floods-so-often-answer-lies-in-massive-siltation-study-60014>> accessed 15 June 2019.

earthen embankments are built to protect communities from sea-level rise, providing much-needed protection. However, they also prevent the elevation of islands that occurs through sediment deposition; thus, in the long term, they cause more instability and created further vulnerability.<sup>535</sup> The issues are thus complex, when considered from the point of protecting and realising the HRTW in the context of water and climate justice.

The laws that govern embankments are also tied to irrigation laws. Embankments were originally built to protect riparian land and improve the productivity of agriculture. Irrigation laws in India have a long history as one of the earliest areas of water law. However, it is also an area of law that has not undergone any fundamental changes in decades, despite vast technological, climatic, political and social changes.<sup>536</sup>

Perhaps its most significant legacy that carried out today is the powerful role of the state in using and controlling water for public purposes. The Irrigation Department is given wide-ranging powers to construct, maintain and regulate embankments. The relationship between the embankment laws, such as the Bengal Embankment Act 1873, which centralise the importance of the Irrigation Department and local communities, thus becomes significant in shaping the socio-ecological environment and the materialisation of climate impacts.

Embankment breaches have seen devastating effects on lives, livelihoods, houses, water sources and food crops. The structure of the embankment, its governance, and its interaction with hydro-climatic processes mediate water relations (and the HRTW). The different power structures and contestations around embankments create issues of water and climate injustice. Embankments are not just an apolitical, technological hydraulic infrastructure and these forms of river control

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<sup>535</sup> LW Auerbach and others, 'Flood Risk of Natural and Embanked Landscapes on the Ganges–Brahmaputra Tidal Delta Plain' (2015) 5 *Nature Climate Change* 153.

<sup>536</sup> Philippe Cullet and Sujith Koonan, *Water Law in India: An Introduction to Legal Instruments* (2nd edn, Oxford University Press 2017) 288.

are intrinsically tied to questions of power.<sup>537</sup> Thus, the focus on laws that govern embankments illustrates the allocation of power over aspects like the construction, maintenance and administration of embankments. Moreover, processes of sedimentation, sea-level rise, livelihood activities near the embankment, all interact with how the legal framework operates and mediates the HRTW. As Baghel states, the embankment is a site of contested relational power, where new relations between the state, individual, communities, water and environment are produced.<sup>538</sup> In this context, Chapter Five further analyses the embankment laws and policies in the Sundarbans.

#### 4.3.5 *Water allocation, environmental flows, hydropower and climate change*

The HRTW has an important relationship with hydropower development because hydropower dams can divert water, including flooding and drying up drivers. The scale at which ‘large dams’<sup>539</sup> can reallocate water and transform socio-ecological landscapes is significant. Water is held back by a dam and reallocated to produce electricity, irrigate land, as well as being used for drinking (and other) uses. By holding back water and reallocating it, dams can significantly change the quantity and quality of water that travels downstream. This reallocation impacts both human uses and ecological ‘uses’ or the ‘ecological flow’ of water. Furthermore, the timing of water releases can be crucial. For example, during monsoons or heavy rainfall events, water released through the dam can exacerbate flooding downstream. These aspects are significant in the context of changing climatic conditions. Furthermore, recent research has shown that reservoirs in tropical countries are significant emitters of greenhouse gases, undermining the climate change mitigation angle for

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<sup>537</sup> See for example: Ravi Baghel, *River Control in India: Spatial, Governmental and Subjective Dimensions* (Springer International Publishing 2014); Kuntala Lahiri-Dutt, ‘Imagining Rivers’ (2000) 35 *Economic & Political Weekly* 2395; Dinesh Kumar Mishra, ‘Living with Floods: People’s Perspective’ (2001) 36 *Economic and Political Weekly* 2756.

<sup>538</sup> Baghel (n 537) 16–17.

<sup>539</sup> Large dams are generally defined as dams that are 15 meters or higher.



hydropower.<sup>540</sup> This sub-section outlines the disjuncture in the way law and policy in India accounts for this complicated relationship. There is no overall framing legislation for all aspects of dam building and operation. Therefore various legal instruments are relevant in providing an overall picture.

Large dams have played a significant role in the social and ecological politics of post-independent India. The centralised, bureaucratized approach of managing large dams suited the state during this period as did the “modernist” ideology of dams. The global and domestic discourses over large dams have shifted over the decade. A review of that discourse is out of the scope of this chapter, however today’s context is largely shaped by the need to build ‘clean’ and ‘low carbon’ energy in a climate change context. Moreover, there is still an important dimension of managing existing hydropower dams that were build since the post-independence era.

The promotion of hydropower as a policy priority during the 1990s saw significant reforms of the electricity industry. Several law and policy instruments illustrate the linkages to ‘clean’ energy and climate change mitigation. First, the Electricity Act 2003 mandates that tariff regulations are framed to promote renewable energy use.<sup>541</sup> Second, several policy instruments further promote hydropower sector — the Mega Power Policy of 1995, for example, provides tax and import duty exemptions for large scale hydropower projects.<sup>542</sup> Environmental and regulatory clearance processes were also streamlined to enable private sector participation.<sup>543</sup> More recently, India put forward an ambitious 227 GW renewable energy target by

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<sup>540</sup> Philip M Fearnside and Salvador Pueyo, ‘Greenhouse-Gas Emissions from Tropical Dams’ (2012) 2 *Nature Climate Change* 382; Ivan BT Lima and others, ‘Methane Emissions from Large Dams as Renewable Energy Resources: A Developing Nation Perspective’ (2008) 13 *Mitigation and Adaptation Strategies for Global Change* 193.

<sup>541</sup> Electricity Act 2003 s 61(h).

<sup>542</sup> Surabhi Karambelkar, ‘Hydropower Development in India: The Legal-Economic Design to Fuel Growth?’ (2017) 57 *Natural Resources Journal* 361, 371.

<sup>543</sup> Policy on Hydropower Development 1998.

2022.<sup>544</sup> Initially, this target excluded large scale hydro (above 25 MW) because of the social and environmental cost. However, in 2019, this was further amended to include large-scale hydro.<sup>545</sup>

The judiciary has also expressed its support for the rationale of hydropower in the context of climate change. For example, in *Narmada Bachao Andolan v Union of India*, concerning a large dam that would involve large-scale displacement, the Court stated that by generating “clean, eco-friendly hydropower” the project will save the air pollution which would otherwise take place by thermal generation power of similar capacity.<sup>546</sup> The Court went on to say:

“Perhaps the setting up of a thermal plant may not displace as many families as a hydel project may but at the same time the pollution caused by the thermal plant and the adverse effect on the neighbourhood could be far greater than the inconvenience caused in shifting and rehabilitating the oustees of a reservoir.”<sup>547</sup>

Thus, the legal and policy context illustrates the state’s promotion of hydropower, in the context of both climate change and economic growth.

Environmental law and policies are one of the critical ways to mitigate the impacts of dams. Today, environmental clearance through the Environment Impact Assessment (“EIA”) process is the main approach.<sup>548</sup> Over the past few decades there have been significant criticisms of the process, including its gradual weakening in relation to hydropower.<sup>549</sup> As the EIA process is not directly relevant to the case

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<sup>544</sup> ‘India May Install 225 GW Renewable Power by 2022: Power Minister’ *Reuters* (5 June 2018) <<https://in.reuters.com/article/india-power/india-may-install-225-gw-renewable-power-by-2022-power-minister-idINKCN1J112A>> accessed 5 June 2019.

<sup>545</sup> PTI, ‘Govt Clears ₹31K Crore for Power Projects, Approves Policy on Hydro Power’ *Live Mint* (7 March 2019) <<https://www.livemint.com/news/india/govt-clears-rs-31k-crore-for-power-projects-approves-policy-on-hydro-power-1551967981319.html>> accessed 5 June 2019.

<sup>546</sup> *Narmada Bachao Andolan v Union of India and Others* (n 243).

<sup>547</sup> *ibid.*

<sup>548</sup> Ministry of Environment & Forests, ‘Environment Impact Assessment Notification 2006’ (2006) S.O. 1533 <<http://www.indiaenvironmentportal.org.in/files/so1533.pdf>> accessed 5 June 2019 Schedule 1.

<sup>549</sup> Alexander Erlewein, ‘Disappearing Rivers — The Limits of Environmental Assessment for Hydropower in India’ (2013) 43 *Environmental Impact Assessment Review* 135; Debadityo Sinha and

studies in this thesis, it is not discussed further depth here. The large dams and hydropower projects analysed in Chapter Five, were built many decades ago before environmental assessments.

Environmental flows thus become a critical aspect of hydropower development and its links with the HRTW and hydro-climatic justice. According to the Brisbane Declaration, a statement by scientists and practionioners working on environmental water management, environmental flows are “the quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems”.<sup>550</sup> To date, there is very little law and regulation of environmental flow in India. The paucity of water framework laws has meant environmental flow has not been able to be considered at a statutory level. State-level water policies have also largely failed to include environmental flow considerations, with one exception, Himachal Pradesh where the maintenance of a constant minimum flow of 15% based on minimum lean season flow is stipulated in water policy.<sup>551</sup> Recent research has, however, shown that although this regulation is encouraging in, compliance has been very weak, and there have been technical and monitoring difficulties.<sup>552</sup> Even still, this policy is an exception to the rest of India, where the only policy instrument remains the National Water Policy.

The National Water Policy does not mention human rights or the HRTW. The National Water Policy sets several “basic principles” which it recommends to govern

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Dhvani Mehta, ‘Environmental Clearances and Monitoring in India: Report Card for the Ministry of Environment, Forest and Climate Change’ (Vidhi Centre for Legal Policy 2017) <<https://vidhilegalpolicy.in/reports/2017/6/30/environmental-clearances-and-monitoring-in-india-report-card-for-the-ministry-of-environment-forest-and-climate-change>> accessed 6 June 2019; Neeraj Vagholikar and Partha Das, *Damming Northeast: Juggernaut of Hydropower Projects Threatens Social and Environmental Security of Region* (Kalpavriksh, Aaranyak ActionAid 2010) 5; Alan Diduck and others, ‘Achieving Meaningful Public Participation in the Environmental Assessment of Hydro Development: Case Studies from Chamoli District, Uttarakhand, India’ (2007) 25 Impact Assessment and Project Appraisal 219.

<sup>550</sup> International River Foundation, ‘The Brisbane Declaration and Global Action Agenda on Environmental Flows’ (2018) 1.

<sup>551</sup> Government of Himachal Pradesh, ‘State Water Policy’ (2013) s 7.2.

<sup>552</sup> Erlewein (n 549).

water. These include principles of equity and social justice in use and allocation, water to be held in public trust, and in the context of environmental flows “water as essential to sustaining ecosystems and the consideration of minimum ecological needs”.<sup>553</sup> The National Water Policy also states that safe drinking water is a “preemptive need” followed by domestic needs and achievement of food security and ecosystems.<sup>554</sup> The issue that arises, with water being diverted for hydropower, is who has priority with conflicting uses of water – drinking, livelihoods, energy, ecosystems – and how is this enforced. The prioritisation under the basic principles of the National Water Policy illustrates a basic right to drinking water, but problems arise in terms of allocative priority between other uses (agriculture and industry most notably). Thus, how these different uses are recognised, allocated, leaves much room for discretion at the state and local level. While states produce policies according to local realities, mostly they have followed the National Water Policy as a template. Chapter Five and Chapter Six explores these issues in further depth.

In sum, the push for hydropower demonstrates the many contradictions and contestations in the legal framework around climate change and the HRTW. A hydro friendly policy have been driven partly under the rationale of climate mitigation and ‘clean energy’. At the same time, the high quantities of water diverted, inadequate environmental regulation, centralised decision making around hydropower, and the lack of clear guidance on water priorities beyond the general priority of drinking water mean there is greater scope for water to be diverted, reallocated away from the basic needs under the HRTW.

#### *4.3.6 Drinking water policy and multi-layered governance*

Drinking water is of primary importance to the realisation of the HRTW as the previous chapter outlined. To this end, the judiciary has repeatedly emphasised that

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<sup>553</sup> National Water Policy 2012 s 1.3.

<sup>554</sup> National Water Policy s 1.3(vi).

the HRTW includes the right to pollution-free drinking water.<sup>555</sup> The Courts have also stated, in strong terms, that there is a duty upon the state to provide such drinking water and failure to do so would mean a breach of a fundamental right to water.<sup>556</sup> Moreover, the lack of adequate funds is not an excuse for not providing adequate drinking water supply.

The importance the Courts have given to drinking water has not however translated into legislative action. There is no framework drinking water legislation in India (at either a central or state level). Accordingly, there is no common set of principles that could apply country-wide for the provision of drinking water. The legal framework for drinking water is comprised of several policy instruments, quality standards and local level laws. As mentioned earlier, drinking water is a state-level concern, and after the 73<sup>rd</sup> and 74<sup>th</sup> amendment to the Constitution, local government bodies also have responsibility for drinking water needs. However, because of the importance of drinking water to human life and health, the centre has historically taken a significant role, producing policies and providing funding.

The leading national-level policy for drinking water supply in India is the National Rural Drinking Water Programme (“NRDWP”) that was introduced by the central government in 2010. The NRDWP introduced a ‘new paradigm’ that had developed through the 2000s, stemming from the Dublin Principles that viewed water as an ‘economic good’. Through the 2000s several schemes were run that introduced ‘cost-recovery’ models of drinking water supply.<sup>557</sup> Cost-recovery models were, for example, where water supply installed into a village would need to be partly financed by residents in the village itself. Despite two decades of judgements from the Supreme Court and High Courts on the HRTW, the NRDWP did not include any mention of fundamental rights in the Guidelines. Cullet points out that this omission

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<sup>555</sup> *Subhash Kumar v State of Bihar & Ors* (n 68); *Hamid Khan v State of M.P* (n 294); *Vishala Kochi Kudivella Sam Samithi v State of Kerala* (2006) 1 KLT 919 (High Court of Kerala); *PR Subas Chandran v Govt Of AP And Others* (2001) 5 ALD 771 (High Court of Andhra Pradesh).

<sup>556</sup> *Vishala Kochi Kudivella Sam. Samithi v State of Kerala*. (n 555).

<sup>557</sup> Cullet, *Water Law, Poverty, and Development: Water Sector Reforms in India* (n 152) 148–175.

was intentional given earlier drafts included mention of a fundamental right to water.<sup>558</sup>

The need to balance environmental, climatic and social considerations with the provision of drinking water has been recognised under the NRDWP, through explicit recognition of ‘sustainability’ as a national goal.<sup>559</sup> On the face of it, this is welcome to the extent that it draws together the provision of drinking water more generally to environmental (and climate) and possibly equitable needs. However, sustainability is a notoriously broad term. The NRDWP has a vague definition that focuses either on the sustainability of the water source or financial sustainability, in contrast to a broader idea of sustainable development.<sup>560</sup> In either case, there are severe concerns for the uptake of state governments seriously considering sustainability requirements. The most recent performance audit saw 14 states not including or preparing sustainability plans.<sup>561</sup>

The NRDWP also has an aim of piped water supply for both rural and urban households.<sup>562</sup> The shift to piped supply is new for drinking water policy in India, as historically tube wells were a primary source in rural areas. However, the groundwater crisis, from both a quantity and quality angle, has seen a shift towards piped water schemes. A piped water system into households through a grid can make a significant contribution to providing water to all rural residents. For areas that face erratic rainfall (such as that projected by climate change impacts), the grid can bring clean water through transferring water from other areas. It can also mean that other

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<sup>558</sup> Philippe Cullet, ‘The Right to Water in Rural India and Drinking Water Policy Reforms’, *The Human Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2017) 687.

<sup>559</sup> Ministry for Drinking Water & Sanitation, ‘Guidelines to the National Rural Drinking Water Programme’ (2013) s 1.

<sup>560</sup> Cullet, ‘The Right to Water in Rural India and Drinking Water Policy Reforms’ (n 558) 687.

<sup>561</sup> Ministry of Drinking Water and Sanitation, ‘Report of the Comptroller and Auditor General of India on Performance Audit of National Rural Drinking Water Programme’ (2018) Performance Audit 15 70 <[https://cag.gov.in/sites/default/files/audit\\_report\\_files/Report\\_No\\_15\\_of\\_2018\\_-\\_Performance\\_Audit\\_on\\_National\\_Rural\\_Drinking\\_Water\\_Programme\\_in\\_Ministry\\_of\\_Drinking\\_Water\\_and\\_Sanitation.pdf](https://cag.gov.in/sites/default/files/audit_report_files/Report_No_15_of_2018_-_Performance_Audit_on_National_Rural_Drinking_Water_Programme_in_Ministry_of_Drinking_Water_and_Sanitation.pdf)> accessed 20 August 2019.

<sup>562</sup> Ministry for Drinking Water & Sanitation (n 559) s 3.2.

sources, such as ponds or groundwater, can be used for non-domestic purposes such as livelihood uses. At the same time, piped water schemes often involve the transfer of water from one area to another through large-scale structural engineering will involve re-allocation of water from one geographic area to another, something which is not without significant justice implications.<sup>563</sup>

Policy on drinking water supply in India is divided based on rural and urban settings. The division is partly because rural areas and cities/towns are governed separately through village panchayats and municipal corporations and also because of the very different nature of water supply and use between rural and urban citizens. The state government's Public Health and Engineering Departments ("PHED") play an operational role in the delivery of drinking water. The PHED primarily comprises of technical experts and engineers.<sup>564</sup> At the district level, the PHED engages in the execution and maintenance of these water supply schemes. In principle, the PHED and panchayat are to co-exist and complement each other. While the panchayat is involved in planning, operation and maintenance of the scheme, the PHED provides technical assistance in all stages. On the other hand, in urban areas, as a general rule, municipal corporations are the governing body that has responsibility for water supply.<sup>565</sup> The PHED continues to play a role in some urban environments, mostly smaller towns that lack the technical capacity in water supply or in peri-urban areas of growing cities.

While the principle of dividing the administration and policy setting for water supply along rural and urban lines is not a problem per se, an important issue has been the unequal application for securing the right to water. Historically, different (lower) per-capita water entitlements have applied for rural residents.<sup>566</sup> Moreover, the need

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<sup>563</sup> Cullet, 'The Right to Water in Rural India and Drinking Water Policy Reforms' (n 558) 692.

<sup>564</sup> Ministry for Drinking Water & Sanitation (n 559) s 12.4.

<sup>565</sup> However, in some metropolitan cities such as Delhi, Hyderabad have developed independent water boards which are still public but with a mandate to pursue water supply along both social and increasingly cost-recovery lines. See: Cullet and Koonan (n 536) 170.

<sup>566</sup> Cullet, 'Right to Water in India – Plugging Conceptual and Practical Gaps' (n 70) 66.

to fulfil higher demands of urban water use (both from industrial and domestic use) has seen water conflicts between rural and urban user.<sup>567</sup> Rural-urban water transfers have been a significant source of water conflict in India, as in many other countries in the Global South.

Chapter Six further explores this conflict, with the case study in the Jaipur District of Rajasthan. The rural-urban divide is further complicated with rapid urbanisation that has left several residents in so-called ‘peri-urban’ areas. These are areas that generally lie outside the coverage of formal networked water and sanitation systems, which are, in most cases, restricted to a relatively small metropolitan core. Thus peri-urban residents are said to live “so close to the city, yet so far from the pipes” and having to rely on several informal practices to access water (and sanitation) services that formal policy is blind to.<sup>568</sup>

#### *4.3.7 Programmatic approach of preservation and conservation*

Historically, water law has neglected the environmental dimensions of water. While there have been significant reforms in the water sector over the last two decades there has been a surprising failure to integrate environmental dimensions, despite knowledge of changing environmental and climate conditions.<sup>569</sup> Nevertheless, several environmental laws and climate policies, discussed further below, could bring these dimensions into focus. To date, arguable, the focus has been on using environmental law to monitor and enforce pollution issues. But, the importance of preserving and conserving water has become critical in the face of reducing water tables, erratic rainfall and drying up rivers. Thus, this sub-section focuses on water conservation and preservation policies in two specific contexts: rainwater harvesting and watersheds.

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<sup>567</sup> Molle and Berkoff (n 34).

<sup>568</sup> Adriana Allen and others, ‘So Close to the City, so Far from the Pipes: The Governance of Water and Sanitation and the Peri-Urban Poor’ (Development Planning Unit, University College London 2006) <<https://www.gov.uk/dfid-research-outputs/so-close-to-the-city-so-far-from-the-pipes-the-governance-of-waterandsanitation-and-the-peri-urban-poor>> accessed 18 April 2018.

<sup>569</sup> Cullet and Koonan (n 536) 216–217.



There has been significant attention given to rainwater harvesting and watersheds in recent times.<sup>570</sup> A watershed is defined technically as geo-hydrological area unit, where a common point captures water runoff.<sup>571</sup> At a broader, developmental level, ‘watershed development’ is the range of activities undertaken when building a watershed in a rural area. The idea is to increase the capacity of a previously degraded watershed in rainfed areas, increasing the capacity to capture and store rainwater, reduce soil erosion and improve agricultural productivity.<sup>572</sup> Often central to such development are the participation of communities, livelihood activities, supporting more productive agriculture, and so forth.

Rainwater harvesting refers typically to storing and preserving rainwater for future use. Such storage and preservation could technically be as part of a watershed, but also refers to storing it in human-made structures such as tanks. The importance of both watershed development and rainwater harvesting in responding to the multiple climate and water crisis in India is evident in policy. India’s Nationally Determined Contribution under the Paris Agreement, for example, puts an important focus on rainwater harvesting and watershed development as part of its adaptation strategies.<sup>573</sup> Rainwater harvesting and watershed development have also been seen as an essential climate change adaptation tool in academic literature and promoted by civil society.<sup>574</sup>

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<sup>570</sup> For example, in 2015, a prominent rainwater harvesting campaigner from India won the prestigious Stockholm Environmental Prize, see: Roger Harrabin, “‘Water Man of India’ Bags Top Prize” *BBC* (21 March 2015) <<https://www.bbc.com/news/science-environment-32002306>> accessed 10 October 2018.

<sup>571</sup> Vrishali Ramkrishna Chaudhari and Arabinda Mishra, ‘Multilevel Policy Responses to Mainstream Climate Adaptation Through Watershed Development in Rainfed Farming Systems of India’ (2016) 8 *Climate and Development* 324, 325.

<sup>572</sup> Chaudhari and Mishra (n 571); Erin Gray and Arjuna Srinidhi, ‘Watershed Development in India: Economic Valuation and Adaptation Considerations’ (World Resources Institute 2013) <<https://www.wri.org/publication/watershed-development-india-economic-valuation-adaptation-considerations>> accessed 22 June 2017.

<sup>573</sup> Ministry of Environment Forests and Climate Change, ‘India’s Intended Nationally Determined Contribution: Working Towards Climate Justice’ (2015) 21 <Available from: <https://www4.unfccc.int/sites/submissions/indc/Submission%20Pages/submissions.aspx>> accessed 5 August 2019.

<sup>574</sup> Anil Agarwal, ‘Drought? Try Capturing the Rain’ (Center for Science and Environment 2000) <[http://www.rainwaterharvesting.org/downloads/drought\\_english.pdf](http://www.rainwaterharvesting.org/downloads/drought_english.pdf)> accessed 12 October 2018; Chaudhari and Mishra (n 571).

The main policy instrument for watershed development is the Common Guidelines for Watershed Development Projects 2008 (updated in 2011) (“Common Guidelines”).<sup>575</sup> The Common Guidelines are a national-level document. The Common Guidelines reconfirm that state governments are responsible for watershed projects within their jurisdictions, but that the guidelines provide a framework for these projects. Watershed activities are generally carried out on a project or programmatic basis (i.e. the government funds separate ‘projects’ that take place) and such projects should range between 4 to 7 years. The Common Guidelines provide several guiding principles, including ‘equity and gender sensitivity’ and ‘decentralisation’. The acuteness of scarcity of drinking water and the overexploitation of groundwater resources are the most important criteria for prioritisation and selection of watershed projects. Meanwhile, rainwater harvesting has become a prominent issue also and has been recently given more policy attention in urban areas. For example, several states and cities have legislation and bylaws mandating large buildings, or public offices, to install rainwater harvesting facilities.<sup>576</sup>

Chapter Six explores issues related to watersheds and rainwater harvesting through a case study of the arid districts of western Rajasthan. The state-level policies, as well as discourses and actors, are explored in greater detail, to illustrate the importance, as well as the multiple contestations, in realising the HRTW through such projects. Watershed activities operate at a very local or ‘micro’ level. Participation of the community is a key feature.<sup>577</sup> However, in India, watershed development, rainwater harvesting, and other forms of water conservation have often

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<sup>575</sup> National Rainfed Area Authority, Planning Commission of India, ‘Common Guidelines for Watershed Development 2011’  
<[http://www.indiaenvironmentportal.org.in/files/file/Guidelines\\_2011.pdf](http://www.indiaenvironmentportal.org.in/files/file/Guidelines_2011.pdf)> accessed 22 June 2019.

<sup>576</sup> Cullet and Koonan (n 536) 277–286.

<sup>577</sup> Under the National Guidelines for Watershed Development, participation is facilitated through setting up of three participatory institutions, self-help groups, user groups and a watershed committee. National Rainfed Area Authority, Planning Commission of India (n 575) s 6.

been enmeshed in caste discourses in Indian environmental politics.<sup>578</sup> As the previous chapter argued, an intersectional analysis is essential here. Moreover, there needs to be a close analysis of the interaction between watershed governance structures and democratic governance structures at the village level. Finally, the programmatic nature of these activities means issues around planning, selection of projects, delivery and longevity of activities are also important.

#### **4.4 Climate Change and Environmental Law and Policy and the Realisation of the Human Right to Water**

A separate body of law and policy exists on environmental protection and climate change action that is significant in the realisation of the HRTW. The previous section outlined that water law and policy has often neglected these concerns. This section outlines and analyses different areas of environmental and climate law and policy relevant to the HRTW. While several areas are possibly relevant here, such as biodiversity conservation and deforestation, that can have an impact on the HRTW in a climate context; the discussion is limited to three areas: climate policy, coastal zone management and disaster management. These areas are dealt with in turn and are chosen specifically because of their relevance to Chapters Five and Chapter Six to follow.

##### *4.4.1 Gaps in the influence of climate change policy*

The only comprehensive national-level climate change policy that exists in India is the National Action Plan on Climate Change (“NAPCC”). The primary intervention of the NAPCC is the launch of eight “National Missions”<sup>579</sup> that deal with different aspects of climate change, including one specific to water. There is very little specific content to the NAPCC. Instead, several normative goals and principles are provided. Maintaining “economic growth” is also viewed as essential to increase

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<sup>578</sup> Sharma (n 24).

<sup>579</sup> The eight National Mission relate to: Solar, Enhanced Energy Efficiency, Sustainable Habitat, Water, Sustaining the Himalayan Ecosystem, Green India, Sustainable Agriculture and Strategic Knowledge for Climate Change.

living standards and thus reduce vulnerability to climate change.<sup>580</sup> Sustainable development is another principle in the NAPCC but defined as simultaneously advancing “economic and environmental objectives”.<sup>581</sup> The mouldable nature of the term ‘sustainable development’ is exploited to advance a meaning that does not fundamentally challenge the status quo. It is unclear how this definition of sustainable development links with human rights, or with the general understanding of sustainable development under international law and policy (such as that reflected in the Sustainable Development Goals).<sup>582</sup> While there is a special mention of the “protection of the poor” as a principle, the NAPCC links protection of the poor to overall economic growth.<sup>583</sup> The annexures to the NAPCC provide further light on this point, pointing to the “imperative of poverty alleviation” but importantly linking it to a particular kind of economic growth in the same paragraph, being the economic liberalisation led growth in India since 1991.<sup>584</sup>

Under the NAPCC, each state is required to develop a State Action Plan on Climate Change (“State Climate Plan”). Because states have responsibilities for critical sectors such as water and agriculture, their role becomes integral to the implementation of climate change-related policies. However, the formation of a State Climate Plan was mainly a top-down policy development process, where several private-sector consultants and development agencies were involved.<sup>585</sup> As state governments had very little to do with the NAPCC, when states were asked to

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<sup>580</sup> Government of India, ‘National Action Plan on Climate Change’ (Prime Minister’s Council on Climate Change 2008) 2.

<sup>581</sup> *ibid.*

<sup>582</sup> Cullet, ‘The Right to Water in Rural India and Drinking Water Policy Reforms’ (n 558) 688.

<sup>583</sup> Government of India (n 580) 2.

<sup>584</sup> Susannah Fisher, ‘The Emerging Geographies of Climate Justice: The Emerging Geographies of Climate Justice’ (2015) 181 *The Geographical Journal* 73, 76.

<sup>585</sup> Dubash and Joseph (n 482); Oxford Policy Management, ‘India’s State Action Plans on Climate Change: Towards Meaningful Action’ (2015) 2  
<[http://www.opml.co.uk/sites/default/files/india\\_state\\_action\\_plans\\_climate\\_change.pdf](http://www.opml.co.uk/sites/default/files/india_state_action_plans_climate_change.pdf)> accessed 12 April 2018.

formulate their State Climate Plans, there was little organic enthusiasm.<sup>586</sup> Taking guidance from the Ministry for Environment and Forest, state governments also mostly followed the template of NAPCC, although sometimes local context was woven in, for example where a state has a particularly unique or climate-vulnerable area.<sup>587</sup> This policy background and context is essential because it provides explanations of why the SAPCC implementation has mostly been stagnant.<sup>588</sup> In reality, states saw the State Climate Plans as an opportunity for an additional source of funding from the Central government, which has not eventuated.<sup>589</sup>

In the context of a HRTW, a National Water Mission (“NMW”) was also launched to formulate a country-level response to climate change and water issues. The foundation of this is the NWM policy.<sup>590</sup> The overall objective of the NWM, as stated in the mission document is "conservation of water, minimising wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management".<sup>591</sup> The NMW policy is based on irrigation expansion, support for interlinking rivers, and the expansion of water storage infrastructure (such as dams). The NWM policy does not mention water from a rights-based perspective, failing to recognise either the HRTW or environment. Drinking water is a feature in the NWM policy through support for a revised National Water Policy that would provide guidelines for different water uses and the support of water audits for drinking water purposes (a new National Water Policy was subsequently released in 2012, discussed earlier).

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<sup>586</sup> Anu Jogesh and Navroz K Dubash, ‘State-Led Experimentation or Centrally-Motivated Replication? A Study of State Action Plans on Climate Change in India’ (2015) 12 *Journal of Integrative Environmental Sciences* 247, 250. For example, GIZ GmbH (a German development consultancy) was instrumental in drafting the West Bengal and Rajasthan SAPCC. This provides a certain amount of uniformity in the policies.

<sup>587</sup> For example, the West Bengal SAPCC has a special section on the Sundarbans area.

<sup>588</sup> Oxford Policy Management (n 585).

<sup>589</sup> Interview with Executive Engineer, Pollution Control Board (Jaipur, 27 June 2017); Interview with Director of Regional Office, Regional Director of Central Ground Water Authority (Jaipur, 27 June 2017); Interview with Executive Engineer, Water Resources Department (Jaipur, 22 June 2017); *ibid*.

<sup>590</sup> Government of India, ‘National Water Mission’ (Ministry of Water Resources 2011) i.

<sup>591</sup> *ibid*.

The National Water Policy released around the same time. Hence the NWM is broadly a continuation of the Ministry for Water Resources policy paradigm of large-scale infrastructure supply strategies.<sup>592</sup> England argues that because climate change, as a discourse, is capable of multiple meanings and consequences, it is able to be mobilised for different ends by different actors.<sup>593</sup> Here, the Ministry was able to use climate change to broadly justify its current water management strategies rather than bringing a fundamental change in outlook and strategic direction based on climate change.<sup>594</sup> As England explains, “The MWR appears to have appropriated, though the NWM, the policy space created by climate change to reinforce its primary focus on large-scale supply-side strategies, mobilizing the plasticity of climate change within the discourse as additional justification for canal irrigation expansion and increasing large-scale reservoir storage capacity through the construction of dams.”<sup>595</sup>

Accordingly, the NWM to date has primarily been involved with providing funding for ‘project’ related activities that are mostly technology or managerial based. Rights and equity perspectives have not been sufficiently integrated into the NWM, either in its guidance or in its operation.<sup>596</sup> Moreover, despite the division of responsibilities around the governance of water (between the centre, states and local bodies), the NWM is mostly a top-down policy initiative controlled by the centre. Accordingly, there are shortcomings in providing the decentralised administrative structure necessary to implement meaningful action.<sup>597</sup>

A few observations can be made about climate policy in India (both national and state) and the NWM. First, the policies are mostly top-down and do not seek to

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<sup>592</sup> Matthew I England, ‘India’s Water Policy Response to Climate Change’ (2018) 43 *Water International* 1.

<sup>593</sup> *ibid* 11.

<sup>594</sup> *ibid* 10–11.

<sup>595</sup> *ibid* 15.

<sup>596</sup> Vijeta Rattani, ‘Coping with Climate Change: An Analysis of India’s National Action Plan on Climate Change, Vol I’ (Centre for Science and Environment 2018) <<https://www.cseindia.org/coping-with-climate-change-8488>>.

<sup>597</sup> *ibid* 17.

change the status quo. Second, human rights are absent in the policy documents, and rights-based concerns can only be indirectly read in. Third, while the SAPCC and NAPCC continue to be relevant as the closest thing to a framework law or policy on climate change in India, their value beyond this (particularly on the ground) is questionable. State-level bureaucrats interviewed in this research mainly saw the role of the NAPCC and SAPCC to bring finance for specific discrete projects.<sup>598</sup> This is very different from having an overall vision to integrate climate concerns into law and policy, something that the Government of India's Twelfth Five Year Plan (2012-2017) had stated.<sup>599</sup> The overall approach is questioned for being "too broad and lacking specificities".<sup>600</sup> For these reasons, the NAPCC (and relevant state-level policies), while being India's only comprehensive climate policies to date, have failed to date to have much real effect and are not a significant part of the analysis in the coming chapters.

#### 4.4.2 *Multiple contestations in regulations over the coast*

Notwithstanding the lack of comprehensive policy, specific areas and sectors are more vulnerable to climate change and thus needing special protection. Coastal areas are geographically vulnerable area to climate change.<sup>601</sup> Sea level rise, caused by global warming that increases ocean's temperatures, is one of the primary impacts

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<sup>598</sup> Interview with Executive Engineer, Pollution Control Board (Jaipur, 27 June 2017); Interview with Director of Regional Office, Regional Director of Central Ground Water Authority (Jaipur, 27 June 2017); Interview with Executive Engineer, Water Resources Department (Jaipur, 22 June 2017).

<sup>599</sup> Planning Commission of India (Government of India), *Twelfth Five Year Plan (2012-17): Faster, More Inclusive and Sustainable Growth Vol I* (SAGE Publications India 2013) 234.

<sup>600</sup> Rattani (n 596) 31; Parul Kumar and Abhayraj Naik, 'India's Domestic Climate Policy Is Fragmented and Lacks Clarity' (2017) 54 *Economic & Political Weekly* <<https://www.epw.in/engage/article/indias-domestic-climate-policy-fragmented-lacks-clarity>> accessed 16 June 2019.

<sup>601</sup> V Masson-Delmotte and others, 'IPCC, 2018: Summary for Policymakers', *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (World Meteorological Organisation 2018) para B.2 <[https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf)> accessed 26 June 2019.

of climate change. Warming ocean surface waters also intensify hurricanes and cyclones, bringing further vulnerability to coastal areas.<sup>602</sup> India has 7500 km of coastline, with large parts of coast occupied and inhabited by people, as well as industries and development projects. It is estimated that more than 250 million people live within 50 kilometres of the coastline, that includes large cities such as Chennai, Mumbai and Kolkata.

The relationship between coastal areas, human rights and hydro-climatic justice is multifaceted. Coastal areas are more vulnerable to cyclones, storms, and floods, that can lead to disaster situations, where freshwater becomes scarce and there is an increased risk of pollution and contamination.<sup>603</sup> Moreover, such events as well as more generally sea level rise and slow onset changes brings coastal erosion as well as expose saltwater intrusions and ingression, damaging agricultural land, ponds and freshwater infrastructure like tube wells.<sup>604</sup> Coastal and marine ecosystems are also vitally important to the integrity of the coast.<sup>605</sup> As the interface between oceans and terrestrial land, coasts play a significant role in both terrestrial and ocean life. Mangroves and saltmarshes, for instance, are an important carbon sink, a flood defence measure and can decrease ocean acidification.<sup>606</sup> Coastal lives and livelihoods thus face numerous risks, that threaten the realisation of the HRTW and several human rights more generally.<sup>607</sup> These issues intertwine with pressures on the coast

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<sup>602</sup> Christina M Patricola and Michael F Wehner, 'Anthropogenic Influences on Major Tropical Cyclone Events' (2018) 563 *Nature* 339.

<sup>603</sup> Tony George Puthucherril, 'Operationalising Integrated Coastal Zone Management and Adapting to Sea Level Rise through Coastal Law: Where Does India Stand?' (2011) 26 *The International Journal of Marine and Coastal Law* 569, 570.

<sup>604</sup> UNFCCC, 'Slow Onset Events: Technical Paper' (2012) FCCC/TP/2012/7; Adrian D Werner and Craig T Simmons, 'Impact of Sea-Level Rise on Sea Water Intrusion in Coastal Aquifers' (2009) 47 *Ground Water* 197; *ibid*.

<sup>605</sup> PP Wong and others, *Climate Change 2014 Impacts, Adaptation, and Vulnerability: Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Christopher B Field and others eds, Cambridge University Press 2014).

<sup>606</sup> Ilka C Feller and others, 'The State of the World's Mangroves in the 21st Century under Climate Change' (2017) 803 *Hydrobiologia* 1.

<sup>607</sup> Aneire Ehmar Khan and others, 'Drinking Water Salinity and Maternal Health in Coastal Bangladesh: Implications of Climate Change' (2011) 119 *Environmental Health Perspectives* 1328;



from fishing, tourism, mining, shipping and other industries that have an increasing interest in utilising the coast.<sup>608</sup>

The Coastal Regulation Zone (“CRZ”) Notification, is subordinate legislation under the Environment Act 1986, that regulates the land-use changes in India’s coastlines.<sup>609</sup> First enacted in 1991, the CRZ Notification empowers the government to restrict industrial activities and acts as the primary regulation for the conservation and protection of coastal livelihoods. Accordingly, the different ‘zones’ of the coast have restrictions on the types of development and activity that can be undertaken.

Coastal zone regulation has been a highly contentious area of law in India. In 1991, the first CRZ Notification emerged in the context of multiple conflicts over the coast. Fishworkers protested injustices and dispossessions of their lands and oceans that they historically used as a commons resources.<sup>610</sup> Land was increasingly under the threat of industrial development, tourism, ports, and other activity as India’s economy transitioned to a market-led structure. The seas were also under threat, as thousands of licences were being issued to foreign fleets and larger trawlers.<sup>611</sup> At the same time, the increasing prominence of environmental issues saw a need for coastal protection. These conflicts, contestations and tensions have only exacerbated over time. Over the last 27 years, the CRZ Notification has been iterated twice and

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Megan M Herzog, ‘Coastal Climate Change Adaptation and International Human Rights’, *Climate Change Impacts on Ocean and Coastal Law: U.S. and International Perspectives* (2014) <<http://ssrn.com/abstract=2595286>>.

<sup>608</sup> Ishan Kukreti, ‘Coastal Regulation Zone Notification: What Development Are We Clearing Our Coasts For’ [2019] *Down to Earth* <<https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061>> accessed 27 June 2019; Mayank Aggarwal, ‘India Changes Coastal Rules, Bonanza for the Industry’ *Mongabay-India* (24 January 2019) <<https://india.mongabay.com/2019/01/india-changes-coastal-rules-bonanza-for-the-industry/>> accessed 27 June 2019.

<sup>609</sup> The Coastal Regulation Zone Notification is enacted as a subordinate legislation under section 3 of the Environment (Protection) Act 1986 that gives the Central Government the power to take measures to protect and improve the environment.

<sup>610</sup> Jesu Rethinam and Siddharth Chakravarty, ‘Losing Ground’ in Ishita Sharma and Siddharth Chakravarty (eds), *Occupation of the Coast: Blue Economy in India* (Programme for Social Action 2017) 22.

<sup>611</sup> Manju Menon, ‘A Sea of Fury: A Brief History of Four Decades of Struggle of the National Fishworkers Forum (NFF)’ (*DPH*, August 2011) <<http://base.d-p-h.info/en/fiches/dph/fiche-dph-8946.html>> accessed 27 June 2019.

modified 34 times, making it the most amended law in the history of India.<sup>612</sup> The latest iteration and amendments to the CRZ Notification, in 2018, comes in the context of broader policy initiatives by the government to grow the ports and shipping sector, coastal economy, and also the global ‘blue economy’.<sup>613</sup>

The CRZ Notification regulates the coast through prohibiting the development of the coastal areas, outside of specific identified permitted development identified through dividing the coast into different designated zones. Briefly, under the 2018 amendments, there are now seven such zones, that varies from CRZ I A deemed ‘ecologically sensitive’ areas that have the strictest protections, although now allow ‘eco-tourism’ related activities, to CRZ III A where hotels, resorts and tourism facilities are allowed. Additionally, the CRZ Notification identifies that there are ‘critically vulnerable coastal areas’ such as the Sundarbans in West Bengal, where “Integrated Management Plans” must be prepared given the conservation and development needs of these regions.

In terms of administration, the CRZ Notification sets up Coastal Zone Management Authorities at the central and state level, as well as district-level committees. It tasks these committees with the preparation of Coastal Zone Management Plans (“CZMP”) is the main tool for CRZ implementation, with an emphasis on the participation of district-level committees and local communities. As mentioned, in ‘critically vulnerable coastal areas’, these plans need to be through an ‘integrated’ coastal zone management framework.<sup>614</sup>

Chapter Five further explores coastal zone issues through a case study of the Sundarbans. However, to contextualise the case study, a few points should be noted. First, the development of coastal regulation in India has been significant if one considers the lack of regulation previously. However, over the years, the design and

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<sup>612</sup> Kukreti (n 608).

<sup>613</sup> Programme for Social Action, *Occupation of the Coast: Blue Economy in India* (Programme for Social Action 2017); Kukreti (n 608); Aggarwal (n 608).

<sup>614</sup> ‘The Coastal Regulation Zone Notification 2019’ (Ministry of Environment Forests and Climate Change, Government of India 2019) EGD. NO. D. L.-33004/99 s 10.

implementation of the coastal regulations have been problematic because of a lack of monitoring, enforcement, the post-facto legalisation of development activity, a lack of participation of communities, as well as states not updating their CZMPs and allowing prohibited activities (that are detailed in the CZMPs) to continue.<sup>615</sup>

Second, the latest 2018 Notification has been criticised by environmentalists and fish worker unions for weakening protections and opening the coastlines for development.<sup>616</sup> For example, while earlier there was a ‘no development zone’ of 200 meters from the High Tide Line in CRZ II zones, that has been reduced to 50 meters, allowing more extensive coastal development of resorts, hotels and tourism facilities. Moreover, there are broader exemptions given to flagship government schemes of developing the ports and coast (such as *SagarMala* scheme) that include setting up ‘Coastal Economic Zones’ which have blanket exemptions from the CRZ Notification. Such developments weaken the coastal ecosystems, dispossesses communities of the land and livelihoods, and can also put intense stress and conflict over water resources.<sup>617</sup>

Third, the CRZ Notification does not mean the coast is legally integrated. The CRZ is a huge step forward in having a specific regulation for the coast. However, a myriad of laws is relevant to the coastal area, including, climate, environment, human rights and water laws (discussed in this chapter), to fisheries, forest management, planning, and broader policies related to shipping, ports, tourism, and industrial development. These laws and policies have not been sufficiently integrated with the

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<sup>615</sup> These issues have been well documented elsewhere, see for example: Puthucherril, ‘Operationalising Integrated Coastal Zone Management and Adapting to Sea Level Rise through Coastal Law’ (n 603); Jitendra K Panigrahi and Pratap K Mohanty, ‘Effectiveness of the Indian Coastal Regulation Zones Provisions for Coastal Zone Management and Its Evaluation Using SWOT Analysis’ (2012) 65 *Ocean & Coastal Management* 34; Manju Menon and others, *CZMAs AND Coastal Environments: Two Decades of Regulating Land Use Change on India’s Coastline* (Centre for Policy Research - Namati 2015).

<sup>616</sup> Kukreti (n 608); Pritha Mallick, ‘CRZ 2019: “When the Perpetrators Are Govt Owned, Who Do We Complain To?”’ *International Business Times, India Edition* (5 June 2019) <<https://www.ibtimes.co.in/world-environment-day-coast-clear-798973>> accessed 28 June 2019.

<sup>617</sup> Rethinam and Chakravarty (n 610).

CRZ Notification.<sup>618</sup> This creates a massive vacuum in terms of co-ordination and co-operation, between what can be conflicted and contested ministries, administrative authorities as well as private interests, with unequal power balances.

In sum, multiple different pressures and contestations exist in regulating the coast. Sea level rise, in particular, makes coastal areas extremely vulnerable. Decisions around the regulation and governance of the coast have often not been informed by a human rights-based approach. Moreover, economic and political processes of privatisation bring fears of a ‘grab’ of the coast by private capital, dispossessing local communities. Apart from physical dispossession, it also has significant impacts on how water is accessed, distributed, and controlled across the coast, mainly because of the lack of integration with broader legal framework. Thus, it is essential to carefully consider how the realisation of the HRTW in the context of coastal regulation is affected.

#### 4.4.3 *New paradigms in disaster management*

In 2018, Asia suffered more disasters than anywhere else in the world, and within that India recorded the highest number of people affected by a disaster (35% globally).<sup>619</sup> In a climate context, the risk of disasters and disaster management has become critically important.<sup>620</sup> Water is a central issue in many disaster situations. The lack of clean water is often a disaster ‘in itself’, and water contamination and pollution is often a critical issue during and after floods, droughts and heatwaves.<sup>621</sup> Sea level rise and ingression can destroy and contaminate land and water sources that are critical to not just drinking water but livelihood and domestic use. There is

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<sup>618</sup> Puthucherril, ‘Operationalising Integrated Coastal Zone Management and Adapting to Sea Level Rise through Coastal Law’ (n 603).

<sup>619</sup> CRED, UC Louvain and US AID, *Natural Disasters 2018* (Centre for Research on the Epidemiology of Disasters 2018) <[https://emdat.be/sites/default/files/adsr\\_2018.pdf](https://emdat.be/sites/default/files/adsr_2018.pdf)> accessed 1 April 2019.

<sup>620</sup> P Wallemacq, R Below and D McLean, *Economic Losses, Poverty & Disasters: 1998-2017* (UNISDR and CRED 2018) <<https://www.cred.be/unisdr-and-cred-report-economic-losses-poverty-disasters-1998-2017>> accessed 27 June 2019.

<sup>621</sup> Ha Le Phan and Inga T Winkler, ‘Water Security’ in Susan Breau and Katja Samuel (eds), *Research Handbook on Disasters and International Law* (Edward Elgar Publishing 2016) 327.

widespread acceptance that human rights need to be central to disaster management responses.<sup>622</sup> Issues of class, caste, gender, politics and institutions intersect with how disasters materialise and are experienced by different sectors of society.<sup>623</sup> At the international level, the Sendai Framework states disaster risk should be managed ‘while promoting and protecting all human rights, including the right to development’.<sup>624</sup> Thus, human rights, including the HRTW, apply to disaster situations as to any other situation. There is no legal departure for the obligations of the State when a disaster occurs. Human rights are also central to pre-disaster or disaster risk reduction practices.<sup>625</sup>

Historically, India’s disaster management framework has focussed solely on post-disaster relief. Many states had ‘relief codes’ that were a hangover from the colonial relief centric disaster policies.<sup>626</sup> However, in 2005, the Disaster Management Act (“DM Act”) was a significant departure from the relief centric model. The DM Act provides a multi-level framework that links actions from the central government to state and district levels. Each state must develop its Disaster Management Policy and Disaster Management Plan.<sup>627</sup> Each district must also develop its Disaster Management Plan.<sup>628</sup> At each level, there is a disaster management authority set up. Accordingly, from the national to the local level, an administrative network is built.

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<sup>622</sup> Kristian Cedervall Lautu, ‘Human Rights and Natural Disasters’ in Susan Breau and Katja Samuel (eds), *Research Handbook on Disasters and International Law* (Edward Elgar Publishing 2016); Marie Aronsson-Storrier and Haythem Salama, ‘Tackling Water Contamination: Development, Human Rights and Disaster Risk Reduction’ in Susan Breau and Katja Samuel (eds), *Research Handbook on Disasters and International Law* (Edward Elgar Publishing 2016); Elizabeth Ferris, ‘How Can International Human Rights Law Protect Us from Disaster?’ (American Society of International Law Annual Meeting, 10 April 2014).

<sup>623</sup> Nibedita S Ray-Bennett, ‘Disasters, Deaths, and the Sendai Goal One: Lessons from Odisha, India’ (2018) 103 *World Development* 27; Ferris (n 622).

<sup>624</sup> UNISDR, *Sendai Framework for Disaster Risk Reduction 2015-2030* (2015) para 19.

<sup>625</sup> Ferris (n 622).

<sup>626</sup> Rajendra Kumar Pandey, ‘Legal Framework of Disaster Management in India’ [2016] *ILI Law Review* 172, 174.

<sup>627</sup> Disaster Management Act 2005 ss 18 and 23.

<sup>628</sup> *ibid* 31.

The DM Act also tries to bring a holistic approach that looks at pre and post-disaster contexts, something that was absent under the earlier relief-centric framework. Through linking different wings of the government, its aim is to ensure a prompt response that looks at medicine, water, food, shelter as well as economic relief. Overall, it reflects a significantly progressive step forward in how disasters are governed in India and relatedly protecting and fulfilling human rights.

The question of ‘when’ a disaster is a ‘disaster’ under the DM Act has been contentious. Under the DM Act, a “disaster” is a:

“catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to, or degradation of environment and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.”<sup>629</sup>

The general interpretation of this definition is as a ‘sudden’ occurrence, rather than slow-onset or progressive emergencies. From a climate perspective, this is important to note because many of the projected impacts such as desertification, sea-level rise, salinization, glacial retreat occur over a number of years.<sup>630</sup> In particular areas, such as coastal areas, the continuous ‘everyday disasters’ from rising sea levels is particularly relevant.<sup>631</sup> These impacts are, however, left out of the scope of the DM Act’s definition of disasters, something that other countries have made efforts in recent years to include.<sup>632</sup>

Moreover, there is very little guidance as to ‘when’ a disaster is declared. It is presumably up to State governments to respond to as they see fit. Leaving this at the local or state level makes sense as the state government may be better placed to deal

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<sup>629</sup> *ibid* 2(d).

<sup>630</sup> UNFCCC (n 604).

<sup>631</sup> The phrase “everyday disasters” in relation to coastal areas is borrowed from Aditya Ghosh. See: Aditya Ghosh, *Sustainability Conflicts in Coastal India: Hazards, Changing Climate and Development Discourses in the Sundarbans* (Springer International 2018).

<sup>632</sup> See for example: Disaster Management Act (South Africa) 2002 s 1.

quickly with disasters. However, this leaves scope for inconsistent application in declaring disasters.

The ambiguity leads to disagreements between individual state government's and the centre over whether a disaster is a 'national disaster'.<sup>633</sup> Strangely, a "national disaster" does not have a definition under the DM Act, but states can gain relief funds when there is a 'national disaster'. Accordingly, despite the legislative reforms in the last 15 years (which have undoubtedly improved disaster responses), there is still a politically charged context to disasters surrounding relief funds that operates on a quasi-legal basis. There is also a well-recorded history of misreporting and exaggeration in order to get relief funds, and issues of misallocation of relief funds.<sup>634</sup> Despite the real concerns over drinking water and food in disaster situations, the political context can demand various levels of influence and power in order to get hand pumps and clean water.<sup>635</sup>

Once there is a disaster, "minimum standards" of relief apply to disaster-affected persons, including minimum requirements of drinking water.<sup>636</sup> A minimum supply of 3 litres per person, per day of drinking water, must be provided.<sup>637</sup> However, this amount can be adjusted (reduced or increased) by state or district authorities depending on geographic, demographic and social practices of a region. Moreover, the requirements target 'relief camps' only, thus do not apply to those

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<sup>633</sup> See for example the tussles between centre and state in order to get relief funding: 'At Least 600 Killed In Floods, Centre Blames States For Not Utilising Relief Funds' *Huffington Post India* (28 July 2017) <<https://www.huffingtonpost.in/2017/07/28/at-least-600-killed-in-floods-centre-blames-state-for-not-utilising-relief-funds>> accessed 25 April 2018; 'West Bengal Likely to Write to Centre to Declare Floods in State as National Disaster' *Indian Express* (5 August 2017) <<http://indianexpress.com/article/india/mamata-banerjee-west-bengal-likely-to-write-to-centre-to-declare-floods-in-state-as-national-disaster-4782937/>> accessed 25 April 2018.

<sup>634</sup> National Disaster Management Authority, 'Guidelines on Minimum Standards of Relief' (2015) <<https://ndma.gov.in/images/guidelines/guideline-on-minimum-standard-of-relief.pdf>> accessed 21 May 2018.

<sup>635</sup> P Sainath, *Everybody Loves a Good Drought* (Penguin 1996) 358–359.

<sup>636</sup> Disaster Management Act 2005 s 12.

<sup>637</sup> National Disaster Management Authority (n 634).

outside camps. Accordingly, the level of discretion to adjust these standards, reflected in the guidelines, is problematic from a rights-based perspective.

## **4.5 Summary**

This chapter has illustrated the number of different areas of law and policy that are relevant in the realisation of the HRTW in the context of climate change. A few further points can summarise the discussion above.

First, fragmentation of law and policy is evident with the numerous laws and policies that exist, which are operated at different levels and by different actors. The fragmentation of law and policy makes it critical that the operation of these laws and policies are carefully examined through the case studies in Chapters Five and Chapter Six. Second, various actors are relevant to the overall framework. These include different layers of government (centre, state, local), including their bureaucratic arms (such as irrigation and public health engineers), private actors (such as landowners and their rights to groundwater, or private actors in the case of hydropower). Law and policy provide different roles and levels of power embedded in the legislation can mediate the realisation of the HRTW. The role of these actors is explored more closely in the specific case studies in Chapters Five and Chapter Six. Third, coordination and coherence in law and policy is a critical issue. One of the key themes is that the law and policy framework for areas like coastal regulation, water allocation, as well as the public trust, often stay separate from the other laws, policies that are relevant to these areas. This disjuncture leaves challenges in what law then operates on the ground, as well as contradictions in how different laws operate. Finally, a common theme across all the different areas discussed has been the lack of integration of climate change and the HRTW. Some areas of law have stayed the same for many decades, such as embankment or groundwater laws; thus, the lack of integration is apparent. However, even in more contemporary policies such as drinking water and coastal zone regulation, there is a lack of integration. Despite the judiciary making this link on many occasions, the lack of legislation and policies integrating the HRTW means that closer analysis of various instruments and actors is required to reveal how the right is (or is not) being realised.



## **CHAPTER 5.**

# **West Bengal: Floods, Hydropower, Sea-Level Rise and the Human Right to Water**

This chapter is the first of two that analyses how the realisation of the HRTW is affected by climate change through case studies in West Bengal and Rajasthan. These two chapters build on the earlier discussion hydro-climatic justice, the HRTW, and the laws and policy frameworks analysed above, to specifically look at the extent that the human right to water, and the laws and policies that underlie its realisation, are able to meet the challenges of climate change from a justice context. Thus, furthering the second research question of this thesis outlined in Chapter One (section 1.3.1 above). This chapter highlights several different areas of law, including the role of disaster management law and policy, water laws, irrigation and embankment law, and coastal management law. Later, this analysis is reflected upon in Chapter Seven, to interrogate the law and ‘re-imagine’ or reframe the HRTW in the context of hydro-climatic change.

The chapter begins with a contextual background of West Bengal, including the hydro-climatic issues facing the state. It then discusses colonial and post-colonial ideas around land and water have been instrumental in forging the ideas embedded in relevant legislation and policy in both case studies in this chapter. The first case study of the Lower Damodar River examines disaster management responses, the role of dams, governance and river-basin legislation, and water inequality in the region. The

second case study moves to the Indian Sundarbans, one of the poorest and most underdeveloped areas in Bengal where sea level rise, cyclones and other hydro-climatic phenomena produce daily struggles around freshwater. In the context of the Sundarbans, coastal zone regulation and embankment laws are two important areas of law and policy that mediate the HRTW. The final section brings these two case studies together by discussing common themes.

## **5.1 West Bengal: Background**

The state of West Bengal<sup>638</sup> is located in the eastern part of India, bordering Bangladesh to the east, and Nepal and Bhutan to the north. Generally considered ‘water-rich’, Bengal has several rivers that flow from the Himalayas down into the Bay of Bengal. The Ganges, an internationally famous river for several reasons, drains into the Bay of Bengal forming the famous mangrove delta of the Indian Sundarbans, explored in the second case study.

There are several hydro-climatic issues in Bengal. These include shifts in seasonal patterns of rain, with the southern region experiencing increasing monsoon and post-monsoon rain.<sup>639</sup> Monsoon rain is particularly vital in Bengal (and in India more generally) because 80% of annual rainfall in Bengal occurs during these monsoon months.<sup>640</sup> Rainfall is critical to groundwater recharge, and sustaining river flows and accordingly for water use. In many districts, the erratic nature of the rains (increasingly driven by climate change), combined with other processes, cause droughts and floods to occur on a cyclical basis.<sup>641</sup> In the Sundarbans, sea-level rise, cyclones and flooding affect everyday life. The deltaic Sundarbans is sometimes referred to as a ‘buffer’ to Kolkata, a metropolitan of 14 million, and one of the most

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<sup>638</sup> In this chapter I refer to the state as West Bengal or Bengal interchangeably.

<sup>639</sup> Government of West Bengal, ‘West Bengal State Action Plan on Climate Change’ (2010) 18–20.

<sup>640</sup> *ibid* 16.

<sup>641</sup> *ibid* 20.

“climate-vulnerable” cities in Asia.<sup>642</sup> Finally, mining, dams, thermal power, deforestation, commercial agricultural, aquaculture, unplanned urbanisation, water pollution, and other socio-ecological processes co-produce uneven throughout the state. Accordingly, Bengal makes a compelling case study because of its varied climatic effects and issues poverty and development. As the rest of this chapter demonstrates, these interactions are critical in analysing the relationship between the HRTW and hydro-climatic justice.

### *5.1.1 Water, land and society: background to water law in and socio-ecological relations in Bengal*

The relationship between water and land and the colonial history of Bengal is particularly crucial in both the case studies explored in this chapter. The conceptualisation of water, land and society under the law is vital to understanding the relations between the state, inhabitants of the region, and socio-ecological environment. As Chapter Two outlines, these relations are important in mediating the realisation of the HRTW and hydro-climatic justice.

Endowed with water, the use of water for economically productive purposes has shaped the socio-ecological makeup of West Bengal for centuries. In the pre-colonial era, a feudal land-ownership system operated alongside the village governance system deciding on many issues and disputes, including those concerning water governance. During the colonial era, Bengal was the political, economic and cultural hub in British India. However, it was also a great ‘environmental laboratory’ for the British, where the administration tested different theories to “tame nature”.<sup>643</sup>

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<sup>642</sup> World Wildlife Fund for Nature, ‘Mega Stress for Mega Cities: A Climate Vulnerability Ranking of Major Coastal Cities in Asia’ (WWF 2009) <[https://www.wwf.org.uk/sites/default/files/2009-13/mega\\_stress\\_cities\\_report.pdf](https://www.wwf.org.uk/sites/default/files/2009-13/mega_stress_cities_report.pdf)> accessed 31 July 2018; ‘Mumbai, Kolkata Most Vulnerable to Climate Change: Govt’ *The Hindu* (New Delhi, 30 November 2014) <<https://www.thehindu.com/news/national/mumbai-kolkata-most-vulnerable-to-climate-change-govt/article6648432.ece>> accessed 31 July 2018.

<sup>643</sup> Kuntala Lahiri-Dutt, ‘Beyond the Water-Land Boundary in Geography: Water/Lands of Bengal Re-Visioning Hybridity’ (2014) 13 *ACME* 505, 518.

Central to the colonial intervention was the separation of land and water. This division was significant for two reasons. First, because the British introduced a new land tenure system and the imperial government earned revenues through productive uses of land.<sup>644</sup> Boundaries, surveys and land titling, were methods used to categorise land as a stable entity under the law. Second, water was something that the Colonial administration saw as best served for irrigation to maximise the productivity of the land. However, in low-lying, riverine, and deltaic Bengal, the land was a hybridised “aqueous” or “spongy” terrain.<sup>645</sup> The material reality of how land and water interacted in Bengal fundamentally challenged the binary of land and water that was fundamental to the colonial assumptions of the environment, embedded in the legal and socio-political structures.

To combat the terrain, the colonial administration constructed water infrastructures, such as embankments, canals and sluice gates. Before colonialism, embankments that did exist were low-lying, not extensive and poorly maintained. Low lying embankments allowed spill-over breaching and outlet of waters in the fields.<sup>646</sup> Pre-colonial strategies, of building low-lying, non-extensive embankments by village communities were ways of “coping with floods” rather than trying to tame the river.<sup>647</sup> Adaptive measures, such as building houses on raised platforms, planting crops that thrived on floodwaters were all part of strategies to live around the river. During this time “overflow irrigation” was used for growing food and crops, although agriculture was perhaps a secondary occupation to artisan and textile-based

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<sup>644</sup> Nitin Sinha, ‘Law, Agro-Ecology and Colonialism in Mid-Gangetic India, 1770s–1910s’ in Gunnel Cederlöf and Sanjukta Das Gupta (eds), *Subjects, Citizens and Law: Colonial and Independent India* (Routledge 2016).

<sup>645</sup> Lahiri-Dutt, ‘Beyond the Water-Land Boundary in Geography: Water/Lands of Bengal Re-Visioning Hybridity’ (n 643).

<sup>646</sup> *ibid* 516.

<sup>647</sup> Kuntala Lahiri-Dutt, ‘State and the Community in Water Management Case of the Damodar Valley Corporation, India’ (Institute for Global Environmental Strategies 2006) 8.

occupations.<sup>648</sup> However, for the colonial administration, flood protection was a priority due to the risk of inundating productive land.

Law was instrumental in the colonial project for a land-based economy. Legislation entrenched the idea of ‘permanent land’ (as opposed to land which was more fluid, in the form of aqueous land), an idea imported from English property law, based on vastly different material geography.<sup>649</sup> However, the high-rise embankments created new issues of drainage congestion, the riverbed rising higher, waterlogging and large parts of the district continued to flood.<sup>650</sup> As will be discussed, these laws and ideas, from this period, continue to affect freshwater access today.

Meanwhile, in areas that were historically sparsely inhabited in Bengal, like the Sundarbans, colonial rationality also played a role in the desire to use them for productive purposes, irrespective of whether the environment was suitable. To enable settlement forests were cleared, people were relocated, and importantly, embankments were constructed to separate water from land.<sup>651</sup> The colonial-era also saw the knowledge systems produced through legal processes and social practices of both physically and discursively separating land and water, humans and nature, as well as the state and citizen. These ideas largely continued in the post-colonial era, through the development of large dams and hydropower, as well as post-colonial conservation policies based upon a separation of society from ‘the environment’ or ‘forest’. In areas like the Sundarbans, the protection of tiger population and biodiversity was often carried out at the expense of the local population. To be clear, the point here is

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<sup>648</sup> Lahiri-Dutt, ‘Beyond the Water-Land Boundary in Geography: Water/Lands of Bengal Re-Visioning Hybridity’ (n 643) 516–517.

<sup>649</sup> See for example: the Permanent Settlement Act 1793 and the Bengal Alluvion and Diluvion Act 1825.

<sup>650</sup> Kuntala Lahiri-Dutt and Gopa Samantha, *Dancing with the River: People and Life on the Chars of South Asia* (Yale University Press 2013) 70–71; Kumkum Bhattacharya and Michael J Wiley, ‘Dams, Riparian Settlement and the Threat of Climate Change in Dynamic Fluvial Environment: A Case Study of the Damodar River, India’ in Marcus Nüsser (ed), *Large Dams in Asia* (Springer Netherlands 2014) 79.

<sup>651</sup> Mukhopadhyay (n 209) 28–30.

to illustrate the influence of the ideas and rationales that, as will be shown below, continue to affect the HRTW today, in a climate context.

Figure 1: Map of Case Study Areas in Bengal



## 5.2 Case Study I: Lower Damodar River Valley Region

The Damodar River has a history of devastating floods that have been particularly famous, and for that reason, the Damodar River had historically been known as the “sorrow of Bengal”.<sup>652</sup> Floods are not an unusual occurrence in deltaic Bengal. The land near the river itself has been built up over thousands of years through silt brought down by the rivers.<sup>653</sup> As the silt is carried down the river, descending quickly, the excesses water reach the plains of Bengal during the rains only to find the lower reaches of rivers already inflated causing widespread floods in

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<sup>652</sup> Bhattacharya and Wiley (n 650) 79. See generally on the history of the Damodar: Lahiri-Dutt and Samantha (n 650) 51–78.

<sup>653</sup> Lahiri-Dutt, ‘Imagining Rivers’ (n 537) 2397.

monsoon months.<sup>654</sup> From a human perspective, these floods became both a boon and a curse.

Historically, until colonial interventions, the surrounding areas of the river have used the river floods for particularly unique forms of flood-prone agriculture described earlier. After heavy flooding in the 1940s, the central government decided to set up the Damodar Valley Corporation (“DVC”) under special legislation, also legislating for the reconstruction of the river basin. Four<sup>655</sup> dams and power stations (to utilise the coal reserves of the upper valley of the Damodar) were built. Newly independent India revered large dams as icons of modern development. Prime Minister Nehru famously called dams the ‘temples of modern India’ and he branded the DVC Act as “the most notable piece of legislation that has ever been passed in this country”.<sup>656</sup> In the case of the Damodar river, the Tennessee River Project served as a model that was actively being replicated, with technical and financial assistance from international actors such as the World Bank.<sup>657</sup>

Apart from the construction of hydraulic infrastructure, mining and deforestation have also shaped the region. Some of the largest coal mines in India surround the river, primarily on the upper part of the river on the Jharkhand side. The Damodar river is also surrounded by growing industrial towns such as Asansol and Durgapur, making it one of the most industrialised river basins in India.<sup>658</sup> Deforestation has gone hand in hand with mining and later industrial activity in the region. Choudhury has said that the ecology of the upper catchment of the Damodar valley has been “systematically destroyed with the removal of large forest cover by large-scale opencast mining, industry and other unplanned developmental

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<sup>654</sup> *ibid.*

<sup>655</sup> the original plan had 8 dams, however the second phase was never completed.

<sup>656</sup> S Gopal, *Jawaharlal Nehru: A Biography* (Oxford University Press 1989) 192.

<sup>657</sup> Sujit Choudhury, ‘Damodar Valley Corporation, the Missed Opportunity’ (2011) 3 *Journal of Infrastructural Development* 117, 119.

<sup>658</sup> *ibid* 122.

activities.”<sup>659</sup> In recent years, riverbed sand mining has also grown, causing changes to the structure of the river and polluting water.<sup>660</sup> Climate change introduces new complexity to an already fragile and complex socio-ecological landscape in the Damodar.<sup>661</sup> The projected increases in average and extreme rainfall in the region are consistent with observed rainfall patterns in the upper Damodar catchment.<sup>662</sup> Extreme rainfall events thus are observed as a risk in the region to existing water management practices. The issues analysed in the sections include the operation of disaster management framework during floods and the role of the DVC in mediating floods.

While floods are a significant concern during the monsoon, and examined in-depth here, drinking water scarcity particularly in summer months are also a critical issue in the upper western part of the region. For example, over the last few years, there has been a ‘water crisis’ in the city of Asansol and its surrounding peri-urban areas.<sup>663</sup> These disparities reach their peak in summer months, where certain areas do not receive water through the grid, but rather are depending on water tankers. In some areas, water pipes are also tampered with and cut, in defiance of the state.<sup>664</sup>

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<sup>659</sup> *ibid.*

<sup>660</sup> ‘The Bengal Sand Free-for-All’ *The Telegraph* (30 April 2017) <[http://www.telegraphindia.com/1170430/jsp/bengal/story\\_149054.jsp](http://www.telegraphindia.com/1170430/jsp/bengal/story_149054.jsp)> accessed 31 July 2018; Abhijeet Charterjee, ‘Illegal Sand Lifting Leaves Death Traps in Damodar’ *The Telegraph* (10 May 2018) <[https://www.telegraphindia.com/1170511/jsp/bengal/story\\_150928.jsp](https://www.telegraphindia.com/1170511/jsp/bengal/story_150928.jsp)> accessed 31 July 2018.

<sup>661</sup> *ibid* 39.

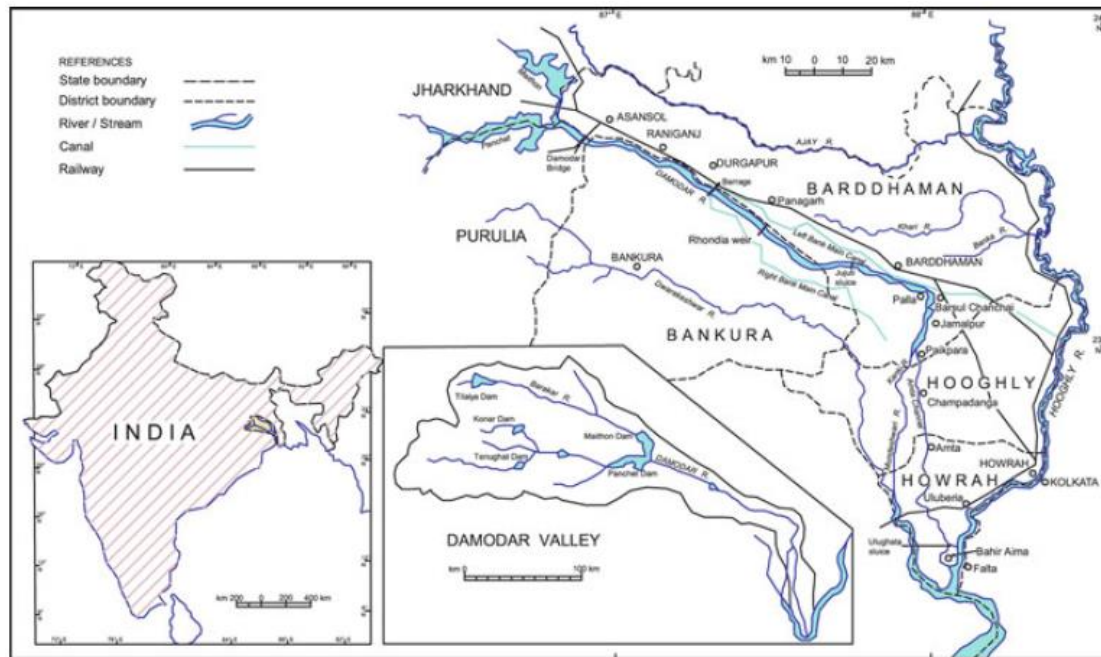
<sup>662</sup> Bhattacharya and Wiley (n 650) 96.

<sup>663</sup> Dipak Kumar Dash, ‘22 of India’s 32 Big Cities Face Water Crisis’ *The Times of India* (9 September 2013) <<https://timesofindia.indiatimes.com/india/22-of-Indias-32-big-cities-face-water-crisis/articleshow/22426076.cms>> accessed 17 July 2018; Sandip Mandal, ‘Expansion and Upcoming Problems of Asansol City in West Bengal’ (2016) V *The Journal of Bengal Geographer* <[http://ssresearcher.com/journals/pdf/139\\_3.pdf](http://ssresearcher.com/journals/pdf/139_3.pdf)> accessed 17 July 2018.

<sup>664</sup> ‘জল সমস্যায় জেরবার শিল্পাঞ্চল (Asansol is Groaning Under Water)’ *Eisamay* (1 May 2017) <<https://eisamay.indiatimes.com/west-bengal-news/durgapur-news/asansol-is-groaning-under-an-acute-drinking-water-shortage/articleshow/58457715.cms>> accessed 17 July 2018.



Figure 2: Map of Lower Damodar River



Source: Kumkum Bhattacharya and Michael J. Wiley, 'Dams, Riparian Settlement and the Threat of Climate Change in Dynamic Fluvial Environment: A Case Study of the Damodar River, India' in Marcus Nüsser (ed), *Large Dams in Asia* (Springer Netherlands 2014) 79.

### 5.2.1 Disaster Management and the Human Right to Water

As the previous chapter outlined, in India, a new disaster management framework legislation, the DM Act 2005, brings a more holistic approach that looks at pre and post-disaster contexts, something that was absent under the earlier relief-centric framework. While specific human rights are not mentioned in the Act, specific standards of relief apply to disaster-affected persons, including minimum requirements of drinking water.<sup>665</sup> Notwithstanding legislation and policy, it is vital to keep in mind that there is no derogation from the HRTW in the context of a disaster.

During a flood, the state enters relief centric mode. As Chapter Four outlined, a nested governance system is set up from the central government to state and district levels. Each state must develop its Disaster Policy, and every district must also

<sup>665</sup> Disaster Management Act 2005 s 12.

develop its Disaster Plan.<sup>666</sup> At each level, there is a disaster management authority set up. Accordingly, from the national to the local level, an institutional administrative network is built. The question then turns to ‘who’ is given power under the policies, how that power materialises, what specific obligations particular actors have, and whether vulnerable groups are recognised. Answering these questions is vital in understanding how the HRTW is protected during a flood.

In 2015 and 2017, the Damodar River flooded in the late monsoon. The floods happened after excessive rainfall and a release of vast amounts of water from the DVC reservoirs.<sup>667</sup> Villages were left without drinking water, as tube wells submerged, agricultural land was damaged through siltation.<sup>668</sup> The spread of disease becomes a real risk in this scenario through the contaminated of water sources. The 2017 late monsoon floods in South Bengal, including the Damodar, affected more than 2.5 million people.<sup>669</sup> Nearly 50,000 people were moved to temporary relief camps as their houses were flooded, with 15,000 houses fully damaged.<sup>670</sup> The devastation affected large areas of crops, livestock, which are essential to people’s livelihoods. Access to water was a major challenge after the floods and exacerbated existing inequalities for minority populations.<sup>671</sup> The immediate relief measure is through the distribution of ‘water pouches’, however even this is not sufficient.<sup>672</sup> In

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<sup>666</sup> *ibid* 31.

<sup>667</sup> ‘Flood in West Bengal: Discharge from Dams Continue, Toll Mounts to 69’ *The Indian Express* (4 August 2015) <<http://indianexpress.com/article/cities/kolkata/flood-in-west-bengal-discharge-from-dams-continue-toll-mounts-to-69/>> accessed 4 July 2018; ‘Bengal Flood: Six Killed; Govt, DVC Squabble over Release of Water from Dams’ *Hindustan Times* (26 July 2017) <<https://www.hindustantimes.com/india-news/bengal-flood-six-killed-govt-dvc-squabble-over-release-of-water-from-dams/story-bXHUExBuBb8XWwnGVqiZRM.html>> accessed 4 July 2018.

<sup>668</sup> Observed by author through field visit to Pigrui and Kuldiha, Bankura; West Bengal State Inter Agency Group, ‘Report of Joint Needs Assessment: South Bengal Floods 2017’ (2017) 4 <<https://reliefweb.int/report/india/report-joint-rapid-need-assessment-south-bengal-flood-2017>> accessed 4 July 2018; Aaditi Chatterji, ‘Water, Water Everywhere’ *The Statesman* (1 October 2017) <<https://www.thestatesman.com/features/water-water-everywhere-1502502945.html>> accessed 4 July 2018.

<sup>669</sup> West Bengal State Inter Agency Group (n 668) 6.

<sup>670</sup> *ibid*.

<sup>671</sup> *ibid* 9.

<sup>672</sup> *ibid*.

relief camps drinking water and sanitation issues are also felt with significant shortages of drinking water.<sup>673</sup> Those who were in areas where relief did not reach, or who were not in relief camps, felt considerable hardship.<sup>674</sup>

5.2.1.1 *Disaster and the realisation of the human right to water through soft law instruments*

Under the West Bengal Disaster Manual, the District Magistrate (the senior-most civil servant in the district) has the responsibility to survey affected areas and “find out whether the existing sources for drinking water are sufficient or not.”<sup>675</sup> If the Magistrate deems it “inadequate”, their office will have to come up with funds to rectify this.<sup>676</sup> The provision of drinking water is the responsibility of the District Magistrate during and in the post-flood period.<sup>677</sup>

Although the DM Act provides a broad framework for how institutional actors should operate, an immediate challenge in the framework is that the everyday decisions and actions provide various state bureaucrats and government officials with a large amount of discretion. There is a general national “minimum standard”, for the provision of 3 litres of water in relief camps.<sup>678</sup> This standard must be followed, at the very latest, from 11 days after the disaster.<sup>679</sup> In other words, for the first 11 days, effort must be made to follow the norms, but they are not mandatory. Moreover,

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<sup>673</sup> *ibid.*

<sup>674</sup> Observed by author in field visit to villages in Bankura that were not covered (Pingrui and Kuldia, Bankura, West Bengal).

<sup>675</sup> Government of West Bengal, *Disaster Management Manual* (Government of West Bengal 2011) s 13.15.8.

<sup>676</sup> *ibid.*

<sup>677</sup> *ibid.*

<sup>678</sup> National Disaster Management Authority (n 634) s 2.

<sup>679</sup> Under the guidelines, the norms are staggered in their requirement. The first 3 days, “basic norms” should be followed (although basic norms are undefined). Between 4 and 10 days, “efforts should be made to follow most of the norms recommended under the guidelines” and after 11 days the prescribed norms under the guidelines should be followed. See: National Disaster Management Authority (n 634).

District authorities have the discretion to adjust the minimum quantity “as per the geographic, demographic and social practises of the region”.<sup>680</sup>

A broad issue during a flood is that different actors operate through a relief-centric approach, where guidelines and policies are soft measures to guide behaviour, with a large amount of discretion. As mentioned above, the minimum standards for providing drinking water in relief camps have a broad level of discretion. NGOs and non-state actors have a key role in disaster situations, in India and beyond. These organisations often have their own internal guidelines. For example, Sphere Project, a coalition of NGOs involved in humanitarian and disaster responses, operates in India as it does in many countries around the world. Sphere have specific requirements on how they respond to water supply issues during a disaster.<sup>681</sup> Luata notes that a consequence of the prominence of the role of the Sphere Project, as crucial as their actions are, is that no hard law is developed and soft guidelines take up the role as the preferred (or more accurately available) governance instrument.<sup>682</sup>

The Sphere Project’s guidelines, importantly, are only a voluntary code and parties are self-regulated. The guidelines are designed specifically without monitoring or compliance mechanisms in place.<sup>683</sup> Accordingly, these entities are not accountable from a human right perspective, in the same way as a state. Moreover, while it is without question a good benchmark document, and the fact that non-state actors are not accountable is not a problem (per se), its prominence as the main tool of governing disaster situations is an issue. As Lauterbach points out, it “inevitably enhances the risk of users cherry-picking from it” meaning that rights may or may not be realised.<sup>684</sup>

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<sup>680</sup> *ibid* 2(a).

<sup>681</sup> The Sphere Project, *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response* (The Sphere Project 2011) 8.

<sup>682</sup> Lauterbach (n 622) 100.

<sup>683</sup> The Sphere Project (n 681) 8.

<sup>684</sup> Lauterbach (n 622) 101.

#### 5.2.1.2 *Planning for a disaster: Participation and vulnerability mapping*

An important aspect of planning for a disaster and ensuring the protection of the HRTW is through planning and coordination between different actors to respond to vulnerabilities in the region. Accordingly, it is the responsibility of the District Magistrate to produce a vulnerability map.<sup>685</sup> Such a map should identify specific populations and geographic locations that are particularly at risk during floods and other disasters. However, as of January 2017, a vulnerability map had not been produced for Burdwan.<sup>686</sup>

Notwithstanding this implementation gap, under the Burdwan District Disaster Plan, vulnerability is restricted to the physical vulnerability of infrastructure and embankments.<sup>687</sup> The District Disaster Plan focuses on where particular resources (such as tarpaulins or rescue boats) are during a disaster situation and whom to contact. In other words, it is largely a coordination document for the District Magistrate. Such coordination is important, and district officials commented that having it has been of assistance.<sup>688</sup> However, it still leaves a large gap in integrating and responding to vulnerabilities of social groups that are particularly vulnerable to water-related disasters in the region.

The differentiated impacts of a flood in the Damodar materialise through different relational structures – gender, caste, class, but also geography. A relevant example in the Damodar region are communities that live on sandbars and inside the embankment also faced the worst of effects of floods.<sup>689</sup> These places are precarious settlements because of their legal and socio-ecological uncertainty. The sandbar

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<sup>685</sup> Government of West Bengal (n 675) s 2.4.

<sup>686</sup> Interview with Additional District Magistrate, Burdwan District (Bardhaman, West Bengal, 24 January 2017).

<sup>687</sup> Burdwan District Disaster Management Authority, *District Disaster Management Plan* (Government of West Bengal 2014) 129.

<sup>688</sup> Interview with District Disaster Management Officer, Burdwan District (Bardhaman, West Bengal, 24 January 2017).

<sup>689</sup> Kuntala Lahiri-Dutt and Gopa Samanta, “‘Like the Drifting Grains of Sand’: Vulnerability, Security and Adjustment by Communities in the Char Lands of the Damodar River, India’ (2007) 30 South Asia: Journal of South Asian Studies 327.

islands (known locally as the *Char* lands) shaped from river sediment that comes down the channel. *Char* lands are legally and ecologically uncertain spaces. They represent spaces of hybridity between land and water that the law has had a constant challenge trying to standardise and stabilise, to fit the framework of property, land and revenue that colonial legal framework brought.<sup>690</sup> Today, primarily migrants (many unauthorised with no citizenship papers) from Bangladesh inhabit these lands.<sup>691</sup> As these migrants have an uncertain legal status, they cannot get land elsewhere, and they chose to settle in the *Char*, despite its vulnerability to floods in the Monsoon.<sup>692</sup>

*Char* lands face the worst consequences of floods where not only water sources, entire houses and communities are destroyed.<sup>693</sup> However, there is no mention of the *Char* lands in the Disaster Plan, nor any plan or provision for these islands. Accordingly, fulfilling the basic water needs during a disaster, as well as broader resilience and adaptation for communities living on *Char* lands are left to themselves. Lahiri-Dutt and Samanta have outlined the many ways people living on these islands have to ‘dance with the river’, continually shifting, adjusting to changes.<sup>694</sup> Accordingly, the hydro-climatic injustices outlined above illustrate the lack of recognition for these communities and lands. The role of law and policy illustrates the co-production of their vulnerability and right-issues

The disaster management regime, discussed above, is a symptom of a broader issue in the river basin around water governance. The next section analyses the broader issues in water governance in the Damodar and their relationship with floods, droughts, the HRTW and hydro-climatic (in)justices.

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<sup>690</sup> Sinha (n 644).

<sup>691</sup> Lahiri-Dutt and Samanta (n 689) 337.

<sup>692</sup> *ibid* 342.

<sup>693</sup> Lahiri-Dutt and Samanta (n 689); Lahiri-Dutt and Samantha (n 650) 135–149.

<sup>694</sup> Lahiri-Dutt and Samantha (n 650) 148–149.

### 5.2.2 *“Flood-water-energy”: DVC, hydropower and flooding in the river basin*

Chapter Four explained the relationship between dams, the human right to water and climate change (section 4.3.5 above). It was argued that large dams, through the reallocation of water, as well as through transforming socio-ecological landscapes, can significantly change the quantity and quality of water that travels downstream. As dams often have multiple purposes, conflicts arise between the use of water for hydropower against basic water uses downstream communities, and also the ecological needs of the river itself. In other words, the dams impact both human uses and ecological ‘uses’ or the ‘ecological flow’ of water. Exacerbating weather conditions under climate scenarios, as well as the push for hydropower as a ‘clean energy’ source illustrates the complex, conflicting and different linkages between the HRTW, hydropower and hydro-climatic change.

The case of the Damodar illustrates these linkages and the role of the law. Floods in the Damodar, described earlier, are co-produced by several different processes. However, the role of the dam stands out as an important factor in mediating floods, as well as river water flow, which affects the entire socio-ecological environment in the region. Accordingly, the governance of hydropower over the river has a vital role in the realisation of the HRTW.

#### 5.2.2.1 *The rise and fall of a multipurpose river basin*

As noted earlier, the construction of dams in the Damodar was part of a broad plan for flood control and a multipurpose basin plan. The construction was as part of an effort to ‘tame’ and ‘harness’ a ‘wild’ river, in line with ideas and discourses around rivers and modernisation at the time.<sup>695</sup> Law was integral to this process. The Damodar Valley Corporation Act 1948 (“DVC Act”) created an inter-state statutory body, the Damodar Valley Corporation (“DVC”). The DVC Act lists six functions of the DVC, which are: (i) managing water supply and drainage; (ii) the generation,

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<sup>695</sup> Lahiri-Dutt, ‘Imagining Rivers’ (n 537).

transmission and distribution of electricity; (iii) flood control; (iv) navigation; (v) afforestation and controlling erosion; (vi) industrial, economic and general wellbeing through irrigation and water supply.<sup>696</sup> The legislation proposed India's first-ever multipurpose river basin plan. However, not long after this structure was set up, the multipurpose river began to dismantle due to political battles between different actors.

The DVC Act empowered the DVC as the central governing authority. This was a unique structure because, as Chapter Four explained, states have primary importance for water bodies, water supply and irrigation in their territory.<sup>697</sup> However, while the Constitution gives the full control over river waters to state governments, Parliament can intervene if it deems it is better to be governed through a central institution, as an inter-state river, in the public interest.<sup>698</sup> Accordingly, public interest reasons were used to legislate the DVC Act as an inter-state river. This resulted in political conflicts between the state governments and the centre.<sup>699</sup> West Bengal's state government wanted to wrestle power back from the DVC. Accordingly, by 1956 responsibility for irrigation was transferred to the West Bengal State Government.

There were two critical effects of the division of responsibilities over the river. First, the 'multipurpose' vision was lost, as the DVC no longer had control of irrigation.<sup>700</sup> The river was now governed by two different entities, each with different responsibilities, interests, levels of influence and power. Second, the loss of multipurpose vision was not merely in terms of who was responsible for what. The division of responsibility also meant that different departments viewed water under different rationales and uses, depending on their respective responsibilities, narrowing the vision of water having multiple uses.

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<sup>696</sup> DVC Act, s 12.

<sup>697</sup> List II, entry 17

<sup>698</sup> List I, entry 56

<sup>699</sup> Robert Laporte Jr., 'Intergovernmental Change in India: Politics and Administration of the Damodar Valley Scheme' (1968) 8 *Asian Survey* 748.

<sup>700</sup> Choudhury (n 657).



The legislation and policy for the Irrigation Department conceptualised water in a narrow utilitarian form. In the absence of an overarching water framework law in West Bengal, it means that water in the river was now controlled primarily by the Irrigation Department. For the Irrigation Department, its primary concern was supplying water for irrigation, and the water in the river was thus reduced in scope as serving a sole purpose.<sup>701</sup> Legislation has a crucial role here, as the irrigation laws compel the Irrigation Department towards reaching full irrigation capacity through its projects and activities.<sup>702</sup>

On the other hand, for the DVC, its primary role shifted to hydropower generation. Its other functions, including flood management, have slowly receded to a secondary role. For example, a decade after the division of responsibility, the DVC's capital expenditure disproportionately began to go into power generation.<sup>703</sup> Furthermore, although six functions remained in the DVC Act, there is no legislative guidance on how such functions should be prioritised. The DVC's present vision continues to see itself as a mega-producer and distributor of power in Eastern India with its other responsibilities as secondary.<sup>704</sup> The World Bank concluded that the DVC has ended up as "basically a power generation company with little responsibility for water management".<sup>705</sup> Thus, for the DVC the water in the river is primarily seen

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<sup>701</sup> For example, the West Bengal Irrigation (Imposition of Water Rate for Damodar Valley Corporation) Act, 1958 was even more narrow in many ways than the earlier colonial irrigation act that, at a minimum, had some recognition that ensured drinking water was not detrimentally impacted by irrigation (Bengal Irrigation Act 1876, s12).

<sup>702</sup> Interview with Executive Engineer, West Bengal Irrigation Department (Damodar Circle) (Bardhamman, West Bengal, 21 March 2017).

<sup>703</sup> Lahiri-Dutt, Kuntala, 'Negotiating Water Management in the Damodar Valley: Kalikata Hearing and the DVC' in Kuntala Lahiri-Dutt and Robert J Wasson (eds), *Water First: Issues and Challenges for Nations and Communities in South Asia* (SAGE Publications 2008) 343.

<sup>704</sup> The DVC is currently the 4<sup>th</sup> largest thermal power utility company in India. See: World Resources Institute, 'Parched Power: Water Demands, Risks, and Opportunities for India's Power Sector' (2018) 6 <<http://www.wri.org/sites/default/files/parched-power-india.pdf>> accessed 1 August 2018.

<sup>705</sup> World Bank, *India's Water Economy: Bracing for a Turbulent Future* (Oxford University Press 2006) 73.

as serving the purposes of power generation through the year, driven by market processes.

#### 5.2.2.2 *Decisions around releasing the dams: who decides what 'use' has priority*

The DVC releases water from the dams in the river, with input from the state governments. However, there is no guidance in the DVC Act on this, nor any transparent regulations, to guide the prioritisation of water in the river. As the DVC is governed by legislation and policy that does not provide clear guidelines on the prioritisation of water management based on any socio-ecological principles, the DVC inevitably operates to allocate water for its profitable thermal power plants. Under the DVC Act, there is no accountability on the DVC to prioritise flood management or to release water through the year based on maintaining ecological flow.<sup>706</sup>

The impact of decisions around the timing and quantity of release of water is significant because the DVC was blamed for releasing water to enable more power generation.<sup>707</sup> In 2015, the South Asian Network on Dams Rivers and People (SANDRP) found that there was a 46% increase in power generation during the flood period.<sup>708</sup> As the speed of the flow of water mediates the production of hydropower, SANDRP's analysis suggests that the DVC increased the flow of water downstream (after initially holding backwater), ostensibly to generate more electricity. Inevitably, the DVC and the Govt. of West Bengal were locked disagreements and shifting blame upon each other.<sup>709</sup> However for the DVC, under the DVC Act, there is no

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<sup>706</sup> While the DVC has its own internal guidelines, these are not transparent or available in the public domain.

<sup>707</sup> South Asia Network on Dams Rivers and People, 'Damodar Valley Dams Role in W Bengal Floods – DVC Dams Could Have Helped Reduce the Floods, They Increased It' (2015) <<https://sandrp.wordpress.com/2015/08/05/damodar-valley-dams-role-in-w-bengal-floods-dvc-dams-could-have-helped-reduce-the-floods-they-increased-it/>>; 'Bengal Flood: Six Killed; Govt, DVC Squabble over Release of Water from Dams' (n 667).

<sup>708</sup> South Asia Network on Dams Rivers and People (n 707).

<sup>709</sup> 'Bengal Flood: Six Killed; Govt, DVC Squabble over Release of Water from Dams' (n 667).

responsibility to prioritise water in a particular way. As the West Bengal state government is limited in its ability to influence decision on the release of waters, it can shift blame for any other shortcomings upon the DVC. Meanwhile, for rivers in Eastern India, it is projected that there will be more flooding due to extreme rainfall events in the context of hydro-climatic change.<sup>710</sup>

Environmental flows are another issue in the Damodar. As Chapter Three argued, recognising ecological dimensions of water is particularly critical for the HRTW in the context of climate change. Environmental flows are one crucial aspect, as the short-term gains from withdrawing too much of the water required by ecosystems can lead to longer-term scarcities, degradation and also prevent buffers during a lean period (for example, due to a drought). The Damodar River has the twin issue of shallow and low flows for much of the year and flooding in the monsoons. While this is not unique, the levels of flow can reach to levels which do not sustain the river. The role of the dam and the pollution load that the river receives from neighbouring coal mines, industry and domestic sewage are significant causes of the flow issues.<sup>711</sup> Given the importance of the Damodar river to drinking, domestic and livelihood water in the region, there is quite a direct link between the minimum flows in a river and the HRTW. The DVC Act itself does not acknowledge flows requirements of the river, which are essential to maintaining the health of the river. Additionally, there are no guidelines to hold the DVC accountable for maintaining a minimum flow of the river.

#### 5.2.2.3 *Water Inequalities in the River Basin*

As there are no guidelines on flow, the areas surrounding the Damodar also face water issues during the year. Many surrounding areas experience basic water shortages, despite being close to the river. For example, during fieldwork in Salanpur,

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<sup>710</sup> Ghosh and Mistri (n 661); Susmita Ghosh, 'The Impact of the Damodar Valley Project on the Environmental Sustainability of the Lower Damodar Basin in West Bengal, Eastern India' (2014) 7 OIDA International Journal of Sustainable Development 47.

<sup>711</sup> Ghosh and Mistri (n 661).

10 km from the Damodar River, widespread issues around access to water were observed. Mobile water tankers are the main source of water during summer, provided by the Government or private tanker owners.<sup>712</sup> So communities in Salanpur, often have to make a 10km trek to take water directly from the Damodar River, despite the river having significant pollution issues. The neighbouring city of Asansol, a major urban area, has been having significant water shortages over the last ten years.<sup>713</sup>

Future planning for the Damodar continues to centre upon technocratic interventions. The West Bengal State Action Plan on Climate Change outlines a plan to increase reservoir storage, removal of siltation, and unblocking drainage. Interestingly, there is an admission of the failure of embankments and dams to properly manage floods in the region. The West Bengal State Action Plan on Climate Change states that “a rethink” is necessary for the “existing infrastructure and making new infrastructure that helps water pass through and drain out”.<sup>714</sup> There are also plans for a large-scale embankment and canal project funded by the World Bank, including desilting canals and rebuilding concrete embankments.<sup>715</sup>

The Government’s plans for blocks such as Salapur are to ultimately connect these to the water grid, providing water drawn from the Damodar.<sup>716</sup> As groundwater levels are low, this is now the only viable approach. However, as discussed, there are tensions between the different water uses flowing through the Damodar. The DVC has an expanding thermal power capacity. It also has an overarching role in regulating river flow. With less predictable and more extreme rainfall patterns, a concern arises

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<sup>712</sup> ‘জল সমস্যায় জেরবার শিল্পাঞ্চল (Asansol is Groaning Under Water)’ (n 664).

<sup>713</sup> *ibid.*

<sup>714</sup> Government of West Bengal (n 639) 39.

<sup>715</sup> Saibal Gupal, ‘Bengal, World Bank Ink Project to Overhaul Damodar Embankment - Times of India’ *The Times of India* (2 August 2017) <<https://timesofindia.indiatimes.com/city/kolkata/bengal-world-bank-ink-project-to-overhaul-damodar-embankment/articleshow/59871772.cms>> accessed 2 August 2018.

<sup>716</sup> Interview with, Executive Engineer, Public Health Engineering Department (Mechanical Division) (Asansol, 29 March 2017); Public Health and Engineering (Government of West Bengal), ‘Vision 2020’ (2011) 20 <[http://www.wbphed.gov.in/resources/V2020\\_DEC\\_2011.pdf](http://www.wbphed.gov.in/resources/V2020_DEC_2011.pdf)> accessed 17 July 2018.

on around how other users (such as for drinking, domestic water, as well as industrial uses in the cities) will be able to sustain increasing its own use of the river water for drinking water purposes. As mentioned, there is no legislative or policy guidance on prioritising water use in the Damodar. This has led to today's situation of intensive water use for thermal power generation by the DVC

Accordingly, in the Damodar, a contested and multifaceted relationship between 'floods, water and energy' emerges in the context of hydro-climatic change, and one that has significant impacts on the HRTW. The operation of the dam, its reallocation and use of water for energy can produce the flood situations described above, and also prolonged dry period when water is held back, this creates risks around access to water produce HRTW issues. The role of the law is integral here. Though EIA's and other environmental regulations do restrict certain activities in the river basin, for example sand mining that can further degrade the basin and exacerbate flooding and pollution, there is ultimately no integration of environmental or rights-perspectives into the legislation of the DVC itself, that controls the allocation and release of waters. The push for more hydropower and electricity generally, detailed in Chapter Four, is intrinsically linked here in the decision making by the DVC.

### *5.2.3 Summary*

The discussion above demonstrates the role of law, policy, discourses around water and land, and power structures between different institutions and communities mediate the HRTW. The lack of an overall framework for the Damodar is highlighted with the inter-sectoral competition over water in the Damodar. Accordingly, the institution with the largest amount of power, the DVC, have an overarching role of where water is allocated. When floods happen, as they inevitable do, the disaster management framework also illustrates gaps in incorporating a rights-based approach, with a significant amount of discretionary power on state and non-state actors. The next section examines the case of the Indian Sundarbans, before the final part of this chapter draws together common themes of both case studies.

## **5.3 Case Study II: the Indian Sundarbans**

The Sundarbans region lies in the southern part of the Ganges delta, with around 40% of the Sundarbans in the state of West Bengal and the rest in Bangladesh. The Sundarbans is the largest mangrove forest in the world spreading across Bangladesh and India.<sup>717</sup> The region is also rich with biodiversity and a significant section of the Sundarbans is designated a UNESCO World Heritage Site.<sup>718</sup> The mangrove forest are a significant carbon sink, thus vital to global climate processes. Although famous for its biodiversity and wildlife, the region is home to 4.5 million people and is one of the most deprived areas in West Bengal. The unique hybrid landscape, which straddles between land and water, is essential to understanding the area. The landscape is captured best by the writings of Amitav Ghosh, who describes the region:

“...between the sea and the plains of Bengal, lies an immense archipelago of islands [...] stretching for almost three hundred kilometres, from the Hooghly River in West Bengal to the shores of the Meghna in Bangladesh [...] some are [islands] immense and some no larger than sandbars; some have lasted through the recorded history while others are washed into being just a year or two ago [...] the rivers’ channels are spread across the land like a fine-mesh net, creating a terrain where the boundaries between land and water are always mutating, always unpredictable [...] there are no borders here to divide fresh water from salt, river from sea. The tides reach as far as three hundred kilometres inland and every day thousands of acres of forest disappear underwater only to re-emerge house later.”<sup>719</sup>

In this region, sea-level rise, salinisation of soil and water, cyclonic storms, flooding, along with human settlement have combined over the past century to produce an extremely fragile, unique and uneven environment. Climate processes bring the increased intensity of cyclonic storms, sea-level rise, and uneven rainfall patterns. For example, in 2009, Cyclone Aila severely impacts life in the Sundarbans, killing hundreds, rendering a million homeless, and inundating fertile lands and continue to be a critical juncture in the collective memory of residents. Higher

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<sup>717</sup> Aditya Ghosh and others, ‘The Indian Sundarban Mangrove Forests: History, Utilization, Conservation Strategies and Local Perception’ (2015) 7 Diversity 149, 152.

<sup>718</sup> *ibid.*

<sup>719</sup> Amitav Ghosh, *The Hungry Tide* (Harper Collins 2005) 6.

temperatures have also seen drier summers and less predictable monsoons. While there has been much interest in the Sundarbans from NGOs and academics, for its wildlife, biodiversity and in recent times in light of climate change, the residents of the Sundarbans have been largely ignored in these debates and discourses.<sup>720</sup> Accordingly, a rights perspective becomes even more important, to draw out and analyse. Despite such interest and scholarship, there has been no real engagement with law and policy in the area.

This case study analyses two particularly important areas of law – coastal law and embankment law – that integral to the realisation of the HRTW, as well as their role in the production of hydro-climatic (in)justices in the Sundarbans. As the sections below illustrate several different actors, processes come together in the production of hydro-climatic injustices in the Sundarbans region. These processors and actors can also operate in contradictory ways, and the operation of the law intrinsically intertwined in this landscape.

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<sup>720</sup> Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 5.

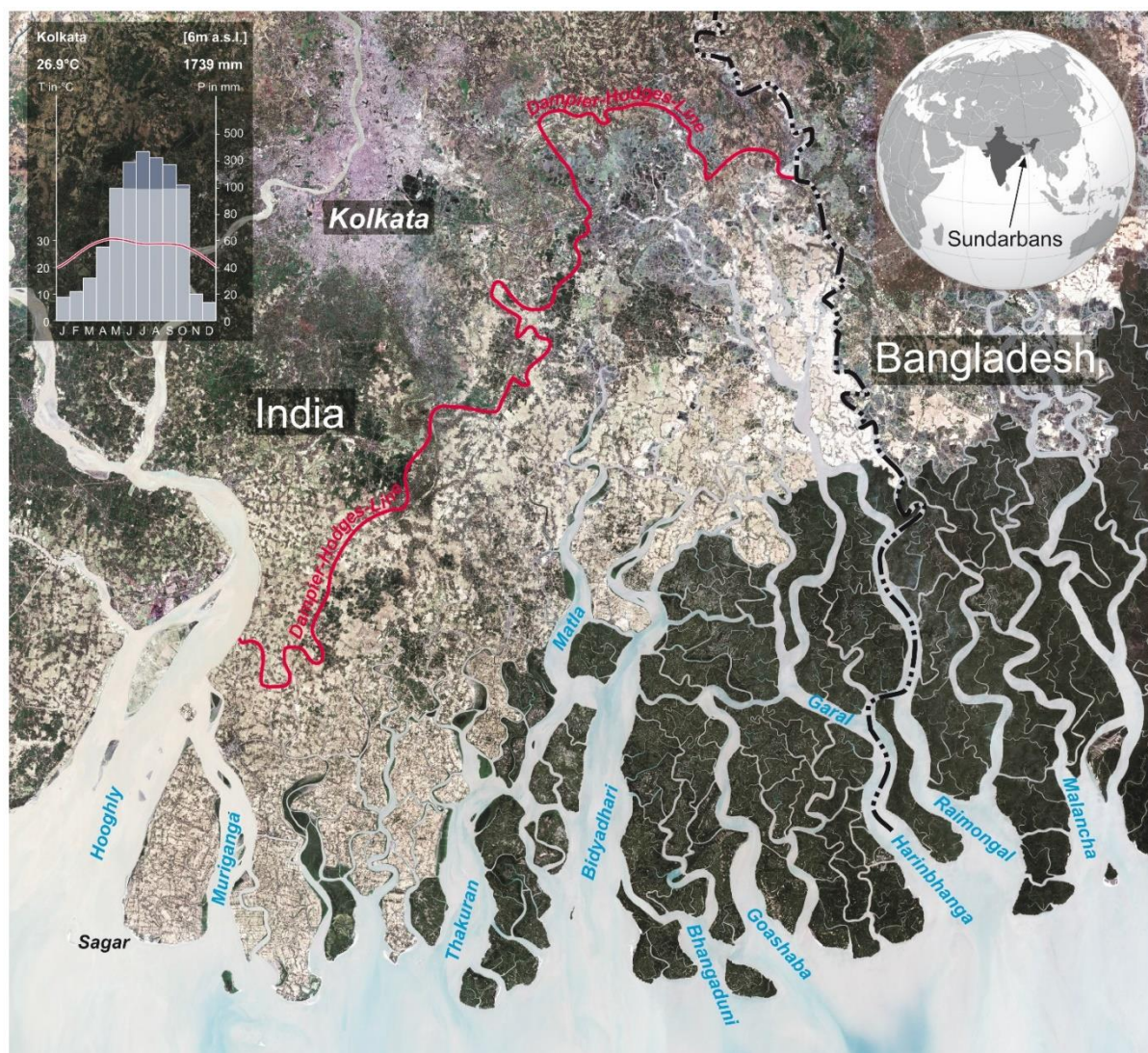


Figure 3 Map of Sundarbans

Source: Aditya Ghosh and others, 'The Indian Sundarbans Mangrove Forests: History, Utilization, Conservation Strategies and Local Perceptions' (2015) 7 Diversity 149, 150.

### 5.3.1 Climate Change, water and the Sundarbans

Much of the population in the Sundarbans live in extreme poverty and marginalisation. About half the population lives below the poverty line, with poverty increasing in the islands close to the sea and the mangrove forests.<sup>721</sup> More than half

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<sup>721</sup> World Bank, 'Building Resilience for Sustainable Development of the Sundarbans: Strategy Report' (World Bank Group 2014) 88061-IN 13.



of the population is also landless.<sup>722</sup> Poverty, the lack of livelihood options, inadequate and inaccessible health care facilities, and a lack of access to water and sanitation are significant issues for the entire region.<sup>723</sup> Agriculture and fishing are the main livelihood activities of people, but there are grave issues related to erosion, salt-water inundation, as well as broader sustainability with the fishing industry, discussed further below. The power relations between residents, the state as well as global actors (such as development banks and wildlife NGOs) intertwine with the operation of activities across the region.<sup>724</sup>

The delta as a whole can be divided in along the lines of ‘up’ and ‘down’ islands. ‘Down’ islands are places that are part of the active delta lying to the south of the Sundarbans. Down islands have low elevations and are also cut off from the mainland, hence poorly connected and often less developed.<sup>725</sup> ‘Up’ lands, on the other hand, are part of the stable delta, closer to Kolkata, connected to the mainland and generally economically better off.<sup>726</sup> These geographic differences have implications on the economic, social and cultural life of people in the region.<sup>727</sup> Down islands are more prone to sea-level rise, erosion. The brackish nature of water in the down islands makes agriculture unviable in most parts of the Down islands. These factors are important to avoid universalising the entire region as vulnerable in the same way. While erosion from sea-level rise and ‘disappearing islands’ are a problem in some parts of the delta, the active nature of the delta means that other parts have seen accretion. That is, some parts of the delta have ‘gained’ from sediment depositions. The research for this section has drawn from field visits to three

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<sup>722</sup> Anamitra Anurag Danda, ‘Surviving in the Sundarbans: Threats and Responses - An Analytical Description of Life in an Indian Riparian Commons’ (University of Twente 2007) 4 <<https://ris.utwente.nl/ws/portalfiles/portal/14252552/surviving.pdf>> accessed 25 August 2018.

<sup>723</sup> Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 51.

<sup>724</sup> *ibid* 35–63; Mukhopadhyay (n 209) 45–71.

<sup>725</sup> Mukhopadhyay (n 209) 7.

<sup>726</sup> *ibid* 6.

<sup>727</sup> *ibid* 7.

particular parts of the Sundarbans. Mousini Island and Gosaba, which are on the ‘down’ side of the delta, and Sandeshkhali II which lies on the ‘up’ side of the delta.

### 5.3.2 *Who is governing the coast? Regulatory gaps, sea-level rise and the human right to water*

Coastal areas face particular hydro-climatic issues being particularly exposed to cyclones, storm surges, as well as having distinctive tidal fluctuations and risks of salinity of ground and surface waters. India is also projected to be one of the 27 countries most impacted by sea-level rise.<sup>728</sup> Sea-level rise and flooding are not new issues in the Sundarbans. However, the intensity, pace and scale under climate change are significant.<sup>729</sup> Already, several islands have sunk, and large tracts of land have been lost.<sup>730</sup>

#### 5.3.2.1 *Hydro-climatic change and coastal areas*

When the brackish water enters the land in the Sundarbans during a storm or cyclone, it destroys crops, water sources, impact agricultural productivity and make land infertile.<sup>731</sup> Tubewells, which are the primary source of drinking water, can be submerged or damaged. Ponds are a valuable source of people’s domestic water in the Sundarbans (for example for fishing, but also bathing, washing up) but are also extremely important from a livelihood perspective, as well for the HRTW.<sup>732</sup> During a storm or cyclone, ponds get submerged with seawater and contaminated. Once a pond is damaged, it needs to be dewatered, excavated and then refilled the next monsoon

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<sup>728</sup> Indian Network for Climate Change Assessment (INCCA), *Climate Change and India: A 4x4 Assessment A Sectoral and Regional Analysis for 2030s* (Ministry of Environment & Forests 2010) 47.

<sup>729</sup> World Bank, ‘Building Resilience for Sustainable Development of the Sundarbans: Strategy Report’ (n 721) 126.

<sup>730</sup> See for example: Katy Daigle, ‘Living on a Sinking Island’ [2015] *IOL* <<https://www.iol.co.za/news/living-on-a-sinking-island-1821619>> accessed 10 June 2019; De Chowdhuri and Kataria (n 18).

<sup>731</sup> World Bank, ‘Building Resilience for Sustainable Development of the Sundarbans: Strategy Report’ (n 721) 4–5.

<sup>732</sup> Several interviews in the field confirmed this point.

with rainwater. Given the importance of ponds and tube wells to people's drinking, domestic and livelihood water uses, protection from sea-level rise and floods is vital to the HRTW.

Relatedly, coastal erosion is also a significant issue in the Sundarbans. Eroding coastlines exacerbate the effects of sea-level rise, floods and salinity ingress. The 4,000 km embankment that was set up to protect the coastline is prone to erosion and provides a somewhat false sense of security that can exacerbate the effects of a flood.<sup>733</sup> Aquaculture, a widespread livelihood activity in the Sundarbans, has also been controversial for its contribution to erosion and instability of embankments.<sup>734</sup> Mangroves, which act as a flood defence, are reliant on both salt and freshwater flows. However, during the dry season, the lack of fresh water flowing down the Ganges, due to over-exploitation and pollution, as well as changing Himalayan flows and sea-level rise, means that there is increased salinity intrusion affecting the mangrove population.<sup>735</sup>

The impacts of sea-level rise of coastal aquifers are particularly vital, given groundwater is crucial to drinking water need in the Sundarbans. Aquifers in the Sundarbans are shallow and sandy, close to the brackish water of the rivers, estuaries and sea.<sup>736</sup> People also perceive fluctuations in salinity of groundwater, consumed from shallow dug wells, with tidal variations.<sup>737</sup> Additionally, the overexploitation of

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<sup>733</sup> World Bank, 'Building Resilience for Sustainable Development of the Sundarbans: Strategy Report' (n 721) 1.

<sup>734</sup> *ibid* 7.

<sup>735</sup> Anirban Mukhopadhyay and others, 'Aquatic Salinization and Mangrove Species in a Changing Climate: Impact in the Indian Sundarbans' (World Bank Group 2018) Policy Research Working Paper 8532 2; Ghosh and others (n 717) 151–152; Susmita Dasgupta and others, 'River Salinity and Climate Change: Evidence from Coastal Bangladesh' (World Bank Group 2014) Policy Research Working Paper 6817; Susmita Dasgupta and others, 'Climate Change and Soil Salinity: The Case of Coastal Bangladesh' (2015) 44 *Ambio* 815.

<sup>736</sup> PRASARI, ACWADAM and Bharat Rural Livelihood Foundation, 'Participatory Groundwater Management Efforts in Korakati Gram Panchayat, North 24 Parganas, West Bengal' (2017), on file with author.

<sup>737</sup> This observation is made through interviews with individuals and families living in Sandeshkhali II and Gosaba, Sundarbans, in addition to Interview with Mr Subhankar Banerjee, Project Leader (Sundarbans), PRASARI, Sandeshkhali-II (16 June 2017).

groundwater compounds risks, including contamination, salination, and aquifer depletion.

### 5.3.2.2 *Coastal zone regulation and management plans*

As Chapter Four mentioned, the coast in India is governed through the Coastal Regulation Zone (“CRZ”) Notification, issued by the Ministry of Environment & Forests under the Environment Protection Act, 1986.<sup>738</sup> The most recent CRZ Notification, in 2018, comes in the context of broader initiatives to grow the coastal economy. In effect, this diluted some of the protections that were in place under the 2011 CRZ Notification. The CRZ now classifies coastal zones into seven different zones, depending on its vulnerability. Each zone has a different level of protection. The Sundarbans region is in CRZ-IA, deemed ‘ecologically sensitive’ having the strictest levels of protection. However, under the 2018 amendments, CRZ-IA zones allow for “eco-tourism activities”.<sup>739</sup>

Under the CRZ Notification, the entire Sundarbans region is a critically vulnerable coastal area’ (“CVCA”) and thus should be “managed with the involvement of coastal communities including fisherfolk who depend on coastal resources for their sustainable livelihood”.<sup>740</sup> This explicit recognition of these communities is an important development for coastal management in India.

Careful management of activities on the Sundarbans coastline is vital to protect water sources. However, despite the CRZ putting an onus on the state government to produce a plan for the Sundarbans, there has been no official plan to date, apart from the 1996 West Bengal Coastal Zone Management Plan produced under the previous regulatory regime. In 2018, after numerous outcries and orders by

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<sup>738</sup> ‘The Coastal Regulation Zone Notification 2011’ (Ministry of Environment and Forests, Government of India 2011) SO19(E) & SO20(E).

<sup>739</sup> ‘The Coastal Regulation Zone Notification 2019’ (n 614) s 5.1.1.

<sup>740</sup> *ibid* 3.1.

the National Green Tribunals<sup>741</sup>, the state government finally published a draft version of the integrated coastal management plan.<sup>742</sup> However, between 2011 and 2018, there has been widespread reporting on the flouting of the rules and norms of the CRZ in the region.<sup>743</sup> Much of this has occurred with demands of tourism in the region and its promotion by the government and the private sector.

Integrated coastal zone management is viewed as an effort to manage coastal zone through proactive planning, integrating different policy areas, sectors and levels of administration, integrating terrestrial and marine components of the region, and reducing conflicts through facilitative and participatory management.<sup>744</sup> Integrated Coastal Zone Management (“ICZM”), as a process and framework for governing the coast, has been around for several decades; however, it has only recently been introduced in the Indian context.<sup>745</sup> A key aspect of ICZM is the recognition of lives and livelihoods of people who live on the coast, as well as the ‘integration’ of the entire coast. Previously coastal zone regulation in India, primarily the 1991 CRZ, did not attempt to balance the different contestations between oceans, coastal landscapes and social processes coherently. In other words, it left a system that allowed for different rules for different activities, without much consideration for the overall coast.

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<sup>741</sup> *Tribunal on its own motion v Union of India and others* [2017] National Green Tribunal (Eastern Bench, Kolkata) O.A. No. 20/2014/EZ.

<sup>742</sup> Draft Coastal Zone Management Plan of West Bengal 2018.

<sup>743</sup> Upasana Ghosh, Shibaji Bose and Rittika Bramhachari, ‘Living on the Edge: Climate Change and Uncertainty in the Indian Sundarbans’ (Steps Centre 2018) 40.

<sup>744</sup> There are various definitions of ICZM through international soft law documents, inter-governmental organisations and scholarship. For detailed discussion on different definitions of ICZM see: Tony George Puthucherril, *Towards Sustainable Coastal Development: Institutionalizing Integrated Coastal Zone Management and Coastal Climate Change Adaptation in South Asia* (Brill Nijhoff 2015) 182–210.

<sup>745</sup> *ibid* 15–16.

### 5.3.2.3 *Coastal zone management in the Sundarbans through a hydro-climatic justice lens*

While West Bengal has still not finalised its Coastal Zone Management Plan (“CZMP”), several observations can be made in the context of the HRTW and hydro-climatic justice, from its draft plan and the process of reaching it. First, participation is a crucial aspect of coastal zone management. However, its implementation has been weak and narrow. Under the CRZ Notification, in formulating a CZMP through an ICZM approach, the state government was required to consult with fisherfolk and local communities.<sup>746</sup> However, to date, the main difference with the approach since the previous eras has been the presence of ‘some’ stakeholder participation, rather than meaningful participation in decisions over the coast. Under the CZMP, participation was through a series of public meeting during the formulation of the plan. The consultation for the West Bengal CZMP was controversial as there were irregularities, such as the government not advertising meetings, only providing information in English, and not carrying out adequate public meetings.<sup>747</sup>

Furthermore, the concept of ‘stakeholder’ participation, embedded in the CRZ Notification, is problematic from a rights perspective. For example, while the Draft CZMP mentions ‘stakeholder’ participation, primarily with fisherfolk, it still excludes several vital inhabitants and actors in the coast, such as women, Dalits, tribal communities, landless communities, and other inhabitants of the coast. An approach based on ‘rights-holders’ would provide a stronger basis for participation, rather than the current framework that can be considered a top-down consultative process. The Draft CZMP also does not envisage an ongoing role of the community in managing the coast beyond a narrow level of ‘participation’ in formulating the CZMP. Hence, after the meetings and consultations in formulating, the West Bengal Coastal Zone

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<sup>746</sup> ‘The Coastal Regulation Zone Notification 2019’ (n 614) s 3.1.

<sup>747</sup> Vinita Govindarajan, ‘As States Publish Draft Coastal Management Plans, Activists Say They Are Illegal and Incomplete’ *Scroll.in* (7 March 2018) <<https://scroll.in/article/870398/as-states-publish-draft-coastal-management-plans-activists-say-they-are-illegal-and-incomplete>> accessed 3 September 2019.

Management Authority handles the operation of the CZMP. The Authority is made up of high-ranking members of different government departments, as well as ‘experts’ such as academics and scientists.<sup>748</sup>

Second, one of the significant problems identified in the Sundarbans is the lack of administrative coordination. Several federal ministries and state government departments, directly or indirectly, have a role in governing the Sundarbans, each with different levels of influence (both in terms of influence under the law or beyond). Although there have been attempts to bring co-ordination, these reforms have been inadequate. For example, in the 1990s, the Sundarbans Affairs Department was created with a formal mandate to structure, plan and monitor and evaluate activities conducted by other agencies in the region. Arguably, this should have provided a certain level of coherence in governance. However, to date, the Sundarbans Affairs Department mainly carries out smaller developmental projects such as constructing brick-paved roads, sinking tube wells, duplicating the work of other departments.<sup>749</sup> However, because the Sundarbans Affairs Department is weaker, politically and financially, compared to other departments, its ability to act in a broader capacity has been limited.<sup>750</sup> Instead, today different departments operate, according to different norms, guidelines, allowing for numerous contradictions and inter-department competition.

An ICZM approach is meant to provide an ‘integrated’ governance framework, to counteract the piecemeal governance of the coast that exists today.<sup>751</sup> However, in practice, this has only exacerbated the problem. The new authority that has been set up, the West Bengal Coastal Zone Management Authority only aggravates piecemeal governance. It does not provide a way to resolve the issues arising of different departments, laws, and policies. Nor does it act as a coordinator of governing activities between different ministries (both national and state), statutory

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<sup>748</sup> Ministry of Environment, Forest and Climate Change, ‘S.O. 2569’ (2015).

<sup>749</sup> Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 47–49.

<sup>750</sup> Mukhopadhyay 48–54

<sup>751</sup> Puthucherril, *Towards Sustainable Coastal Development* (n 744) 13.

authorities and administrative agencies. The draft West Bengal CZMP does not adequately vest authority in the West Bengal Coastal Zone Management Authority to carry out these functions, nor to resolve the contradictions, duplications and incoherence in responsibilities.

Third, corollary questions arise as to ‘who’ is responsible for managing the coast and ‘how’. The previous chapter outlined how the Supreme Court of India has recognised that the state is the trustee of all national resources for public use and enjoyment and has a legal duty to protect such resources.<sup>752</sup> Accordingly, there is a scope for vesting the entire coastal area under the public trust doctrine. If the coast were under the public trust doctrine, it would mean the state government would be under specific ‘fiduciary’ duties, to manage the coast according to certain principles that accord with maintaining the trust for future generations, as well as providing scope for more rights-centric approach.<sup>753</sup> However, the CRZ Notification does not mention the public trust doctrine, like other environmental legislation in India.

Puthucherril argues that expressly providing the public trust doctrine could have assuaged fears of land transfers to the private sector, and played a significant role in poverty alleviation by securing community rights over common property resources.<sup>754</sup> Whether Puthucherril is right would depend not just in vesting the coast in public trust, as the public trust does not fully answer the question of ‘how’ the coast is governed. Nevertheless, the public trust doctrine would have been useful so far as it is already part of Indian law, and would have confirmed that the state must be accountable regarding the public use of the coast. Notably, in the context of the state government promoting tourism activities that transform coastlines, impact coastal aquifers, reallocate water, the codification of public trust could guide and hold accountable decisions of the state.

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<sup>752</sup> *M.C. Mehta v Kamal Nath & Ors* (n 310).

<sup>753</sup> Takacs (n 501).

<sup>754</sup> Puthucherril, *Towards Sustainable Coastal Development* (n 744) 102.



Moreover, a significant gap in the CRZ Notification is that there is a lack of guiding principles. The CRZ Notification has some preambular references to livelihood security, sustainable development, and a provision around the participation for stakeholders.<sup>755</sup> However, beyond this, there are no specific principles that are based on either a rights-based approach or principles of environmental law (such as the precautionary principle or participation) that have a well-developed jurisprudence on how the coast should be regulated. This is not to say that such principles don't apply. Rather, that guiding principles and rights within the CRZ Notification itself would have provided a much clearer way in 'negotiating' the hydro-social environment of the coast. It would provide clearer scope to protect the coast from developments that were particularly harmful to the delta, from both a water and broader environmental perspective. This is particularly important because "eco-tourism" activities are legally permitted under the CRZ Notification, without adequate definition for these activities. As it stand however, without such clear guidance, it means only when the Court has intervened, from time to time, has there been an enunciation of how the coast should be governed in line with such principles and rights.<sup>756</sup>

#### 5.3.2.4 *Coastal grabbing and realising the human right to water*

The points above illustrate a regulatory regime over the coast that does not adequately protect rights holders. Weak administration, incoherence, narrow and inadequate participation and gaps in legal principles make coastal areas vulnerable to resource exploitation and other economic processes that produce and reproduce hydro-climatic injustices. As mentioned, in recent years, one of the key stressors in the Sundarbans has been the tourism sector. Tourism currently is the state's primary development strategy for the region. The CRZ Notification, as discussed above,

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<sup>755</sup> 'The Coastal Regulation Zone Notification 2019' (n 614) preamble.

<sup>756</sup> Shibani Ghosh, 'The Supreme Court's Guiding Principles for Coastal Regulation' (*Centre for Policy Research*, 16 June 2017) <<https://cprindia.org/news/6240>> accessed 4 April 2020; Debayan Gupta, 'Coastal Regulation Zone Disputes before the National Green Tribunal' (*Centre for Policy Research*, 14 July 2017) <<https://cprindia.org/news/6314>> accessed 15 April 2020.

allows for “eco-tourism” development, as one of the few development activities, within the Sundarbans.

Tourism in the Sundarbans is partly responsible for exacerbating beach erosion, shoreline modifications, pollution of beaches, and overdrawing groundwater.<sup>757</sup> According to the World Bank tourism in the Sundarbans has “already contributed to environmental degradation in the form of habitat fragmentation and reduction in biodiversity through ill-planned construction of roads, resorts, and jetties.”<sup>758</sup> These impacts have a significant role in the everyday injustices communities face around accessing water, for instance, through exacerbating instability of the delta, thereby increasing the vulnerability to flooding, erosion that salinities waterbodies used by inhabitants; or through the over abstraction of groundwater by the tourism sector. In other words, the tourism sector is seen as a significant threat to resources in the delta, including for the realisation of the HRTW.

The promotion of tourism in the region is not surprising. An image of “natural wilderness” has long been associated with the region, particularly by policymakers and residents who live in urban India.<sup>759</sup> This image prevailed in the colonial era and the post-colonial era. In the 20<sup>th</sup> century, policies of protectionist conservation in the Sundarbans were driven by such images, particularly around protecting the tiger.<sup>760</sup> These policies often lead to violent displacement of communities living in the Sundarbans, such that it has left a long-lasting imprint on how communities in the Sundarbans view the state, as well as the global NGOs that were involved with conservation activity.<sup>761</sup> These same images return today with the push to eco-tourism. However, eco-tourism activities have generally given rise to a strong sense of resentment among resident in the Sundarbans. Ghosh states that “locals harbour an

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<sup>757</sup> Dibyendu Rakshit and others, ‘Human-Induced Ecological Changes in Western Part of Indian Sundarban Megadelta: A Threat to Ecosystem Stability’ (2015) 99 *Marine Pollution Bulletin* 186.

<sup>758</sup> World Bank, ‘Building Resilience for Sustainable Development of the Sundarbans: Strategy Report’ (n 721) 164.

<sup>759</sup> Mukhopadhyay (n 209) 25–45.

<sup>760</sup> *ibid* 35.

<sup>761</sup> *ibid* 42–43; Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 78.

intrinsic sense of ownership of this socio-ecological system and view tourists as intruders and outsiders, a sense emanating from the consistent portrayal of the locals as ‘destroyers’ and tourists as the ‘elite savours’, ‘messiahs’ who boost the economy’.<sup>762</sup>

Although eco-tourism is a development activity permissible in the Sundarbans under the CRZ, there is no actual definition of ‘eco-tourism’ under any coastal or tourism policy in India. The development planning of the state government towards the coastal zone has itself been contradictory. For example, the current tourism policy in the region is through the promotion of mass tourism, which relies upon development in the Coast.<sup>763</sup> Accordingly, the National Green Tribunal has made periodic intervention rebuking Government mismanagement, as well as enforcing the CRZ Notification itself to halt tourism development.<sup>764</sup> In this way, the vagueness of both law and policy regulating the coast and tourism activity that is allowed on the coast permits more significant expansion into the coast by the tourism industry. Some commentators have framed this as ‘coastal grabbing’.<sup>765</sup> Coastal grabbing can be defined as the appropriation of coastal (shore and inshore) space and resources by outside interest.<sup>766</sup> It can be furthered by policies and laws that enable such grabbing to occur, or it could happen illegally.

For inhabitants of the Sundarbans, as mentioned above, the tourism sector poses significant threats to the HRTW. The impacts of sea-level rise, storms, cyclones that are projected to increase through hydro-climatic change intertwine with the coastal activities. The gaps identified here illustrate that law and policy regimes along the coast do not protect rights-holder adequately, nor provide scope for rights-holders to play an active role in managing the coast. The next section examines embankments

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<sup>762</sup> Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 170.

<sup>763</sup> See: West Bengal Tourism Policy 2016.

<sup>764</sup> Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 171.

<sup>765</sup> See: Programme for Social Action (n 613).

<sup>766</sup> Maarten Bavinck and others, ‘The Impact of Coastal Grabbing on Community Conservation – a Global Reconnaissance’ (2017) 16 *Maritime Studies* 8.

that are a critical area of governance and of mediating human rights and water issues along the coast of the Sundarbans.

### 5.3.3 *Embankments: the last lines of defence*

The embankments of the Sundarbans are vital to people's lives and livelihoods. Life today without the embankments would not be possible as the formation of the delta through huge volumes of silt that are brought down the system and deposited twice daily through high tide would make the soil saline and agriculture impossible.<sup>767</sup> The historical processes of constructing embankments and settling on land have transformed the landscape of the Sundarbans. At the same time, ironically, they also provide a false sense of security. Embankment breaches are far more severe than natural flooding, and the embankments of the Sundarbans are prone to erosion and severe breaches. Embankments are also not equal. The location of embankments, their construction, and how they are maintained are vital questions about how the HRTW is realised in the Sundarbans. A breach of an embankment can destroy water sources, creating significant water-related risks. Embankments are not merely technical constructions. Who owns and controls the governance of the embankment is vital to how the embankment (as an active process) mediates people's rights. Furthermore, interactions of these processes of governance are intertwined with fluvial processes, tidal pressures, cyclonic storms, rising sea levels and other hydro-climatic processes.

Bengal's primary legislation on embankments is the Bengal Embankment Act, 1882.<sup>768</sup> Embankments are vested in the state as state property and are primarily under the control of the West Bengal Irrigation Department. The Irrigation Department engineers have a wide range of powers: (i) to make all repairs to the embankment that they deem necessary for maintenance; (ii) the engineers have powers to decide when sluice gates are opened to let water in and out of the canal system; (iii)

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<sup>767</sup> Danda (n 722) 40.

<sup>768</sup> Embankments were vested in the state through the Bengal Embankment Act 1873. Currently, the state has authority through Bengal Embankment Act 1882, s 4.

the power to remove, dismantle, or demolish embankments, fisheries, huts, buildings, sluices, obstructions, encroachments or any other construction which in the opinion of the engineer is likely to interfere with, counteract or impede any public embankment; fourth, the power to enter, survey and clean land that as it deems necessary for.<sup>769</sup> The District Collector<sup>770</sup> also has similar powers, including hearing any objections from the public to works that are being carried out and making decisions regarding the merits of those objections.<sup>771</sup> In sum, a large amount of authoritative power is vested in the engineers of the Irrigation Department and the District Collector (both civil servants of the state government) without much scope of input from the local population, for example through the democratically elected village government (panchayat).

#### *5.3.3.1 Conflict, contestations and contradictions over the embankments*

The impact of the irrigation laws, the large amount of centralised power, and how this interacts with hydro-climatic processes in the Sundarbans, differentially affects the HRTW. On Mousini Island during the monsoon months, tidal waves surge and earthen embankments are constructed and reconstructed daily due to erosion from the waves. The Irrigation Department plays an important role here, financing material for construction and carrying out the work mainly through contract labour. The Irrigation Department usually has a worker in the field who acts as a mediator between the local people, contract labour and the Department.<sup>772</sup>

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<sup>769</sup> Bengal Embankment Act 1882 ss 28–40.

<sup>770</sup> The District Collector or Magistrate is the most senior civil servant for each district. West Bengal is divided into 23 districts, and each district has a District Collector. The District Collector is appointed by the state government. District Collectors have a number of powers and roles (that vary from state to state) including maintaining law and order in the district and the collection of taxes.

<sup>771</sup> Ibid s 7. Before the execution of works a notice must be given to affected villages. The form of notice is set out in Schedule III of the Act. Any person interested is competent to raise objections against the scheme under section 7. However, in case of imminent danger to life or property, the collector can execute works without going through formalities of notice, hearing the objections and inquiry first (section 25).

<sup>772</sup> Mukhopadhyay (n 521) 80–84.

Although there are 4000km of embankments in the Sundarbans, they do not cover the entire coastline, nor are they in a relatively equal state of repair. In Mousini Island, for example, during the tidal season, those who live on the edges of Balaria Beach do not have embankment protection. Residents here are forced to continue to shift backwards and often squat on public land during the rainy seasons.<sup>773</sup> Tubewells that provide drinking water, as well as toilets, are consistently under threat in these villages. Sea-level rise has seen Mousini shrink about 600 hectares between 1969 and 2009.

There is no obligation, as such, on the Irrigation department in the Bengal Embankment Act to build an embankment or maintain an embankment because of sea-level rise in a particular area. While individuals can make an application to the District Collector, the Collector has a responsibility as the ultimate judge of “the advantage which may be derived from the project”.<sup>774</sup> There is no guidance provided as to how such a decision shall be made in the Act. Accordingly, these decisions become one of political and relational power.

Where an embankment is built, maintained and repaired depends on relationships of power, rather than rights. For example, Phalkley, writing on climate resilience in the Sundarbans, similarly points out households are often “denied access to schemes based on caste, religion, and political affiliations”.<sup>775</sup> During fieldwork, a junior engineer in the Public Health Engineering Department (in charge of drinking water provision) stated an area in Mousini Island did not have an embankment built because they believed the Muslim families would steal construction material.<sup>776</sup> Mukhopadhyay’s ethnographic work also details the lack of concern of engineers and

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<sup>773</sup> Aditya Ghosh, ‘Poor Planning, Climate Shifts Devastating India’s Sundarbans’ *Thomas Reuters Foundation* (17 November 2015) <<http://www.news.trust.org/item/?map=poor-planning-climate-shifts-devastating-indias-sundarbans>> accessed 3 September 2019.

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<sup>775</sup> Neelambari Phalkey, ‘Climate Resilience: The Sundarbans Challenge’ in Sunita Narain and others (eds), *State of India’s Environment 2017* (Down to Earth 2017) 86.

<sup>776</sup> Interview with Facilitator, PHED (West Bengal) (Mousini Island, 23 August 2017).

department officers for the lives and livelihoods of residents in the Sundarbans.<sup>777</sup> NGOs in the area also point out that the Irrigation Department's responses to embankment breaches are erratic, primarily based on their discretion.<sup>778</sup> As the Irrigation Department receives funding for embankment reconstruction, there is a common perception that the Department is mainly interested in embankment issues once the embankment has broken, because this brings in a new round of funding.<sup>779</sup> As stated, this causes significant issues because breaches of embankment are critical to protecting water sources (such as ponds, tubewells), as well as land.

### 5.3.3.2 *Embankment cuts by residents: climate change adaptation contradictions*

Embankment breaches in the Sundarbans can be devastating and have a profound impact on the HRTW. Ironically, residents in the Sundarbans sometimes break embankments to let in saline water. This practice (of deliberately breaking embankments) stems from the growth of prawn farms in the Sundarbans that rely on saline water to be let in to drain ponds. However, when an embankment breaches, saline water comes in, the land is inundated, no longer fit for agriculture. Moreover, residents will lose land to the irrigation department when there is a reconstruction of embankment and have to turn to aquaculture, particularly prawn farming, as a livelihood activity.<sup>780</sup>

The growth of the prawn farming industry in the Sundarbans has seen it as a vital part of prawn markets in India.<sup>781</sup> West Bengal is one of the largest markets for

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<sup>777</sup> Mukhopadhyay (n 209) 59.

<sup>778</sup> Interview with Field Officer, PRASARI, Gosaba (Gosaba, West Bengal, 27 August 2017); Interview with Field Officer, PRASARI, Bali 2 (Gosaba, West Bengal, 27 August 2017); Interview with Head of Sundarbans Programme, WWF-India (Kolkata, 12 June 2017).

<sup>779</sup> Interview with Field Officer, PRASARI, Gosaba (Gosaba, West Bengal, 27 August 2017); Interview with School Teacher, Mousini Island (Mousini, West Bengal, 23 August 2017). Also see: Mukhopadhyay (n 209) 58.

<sup>780</sup> Mukhopadhyay (n 209).

<sup>781</sup> Sarkar (n 360).

tiger-prawn in Asia, and much of it comes from the Sundarbans delta.<sup>782</sup> This growth is problematic on two different counts. First, the practice of catching prawn seeds has eroded biodiversity integral to maintaining the riverbed and thus driving further erosion, impacting both the right to water and right to environment. Second, the practices of breaking embankments to further open up land for aquaculture weakens the coastline as a whole.

Breaking embankments is often done in defiance of the Irrigation Department. The lack of coordination between different institutions is highlighted by Sanches-Triana and others, demonstrating how different departments permit different activities, without an overall coordination of these activities.<sup>783</sup> Concerning aquaculture, this is particularly salient because the location of aquaculture ponds, timing of pond refilling can incentivise breaking. Mukhopadhyay also states that the role of the irrigation department, turning a blind eye, can be influential by relative power of aquaculture industry and various relevant departments.<sup>784</sup> There is an intrinsic link, he shows, between the role of the irrigation department (in repairing, reconstructing embankments, taking land to do so), growth of the aquaculture industry (who can benefit from broken embankments), and the lack of an overall governance plan in the region.<sup>785</sup>

Accordingly, aquaculture activity and the embankment represent vicious and contradictory cycles. Processes of climate change (through floods) erode embankments, destroying lands, houses and water sources. Often, those communities and households who face loss of land, inundation of water sources, and livelihoods move into the aquaculture economy in the region. Most notably, it is women from the most impoverished families who carry out the laborious activity of walking up and down the riverbed to try and catch tiger prawn seedlings, the first step in the prawn

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<sup>782</sup> *ibid.*

<sup>783</sup> Ernesto Sánchez-Triana, Leonard Ortolano and Tapas Paul, 'Managing Water-Related Risks in the West Bengal Sundarbans: Policy Alternatives and Institutions' (2018) 34 *International Journal of Water Resources Development* 78, 92.

<sup>784</sup> Mukhopadhyay (n 209) 136.

<sup>785</sup> *ibid* 138.



framing process. This practice, of walking up and down the river, as well as other forms of aquaculture in the region, exacerbate the impacts of floods and salinity ingress (for example through weakening the overall embankment). Some commentators have noted aquaculture as a mal-adaptation activity, as those who are being affected by climate change are carrying out these activities to ‘adapt’.<sup>786</sup>

However, this also raises complex questions for the HRTW, in the context of hydro-climatic justice. It was argued earlier in Chapter Three that the HRTW needed to incorporate a multiple-use perspective, including basic livelihoods. Do residents, often the poorest, who practice prawn farming, have a ‘right to saline water’ for livelihoods? How does the right to water balance a subsistence livelihood use where this livelihood is further eroding the coast, exacerbating the impacts of hydro-climatic processes?

These are complex questions. However, there are a few points that can be made, without fully distinguishing the possibility that such ‘destructive’ activities too may fall under a livelihood approach to the HRTW. First, those carrying out the activities of walking up and down the riverbed are often the most vulnerable women (and also children), often landless with no other means of livelihood. Unfortunately, often in discourses over the Sundarbans, these vulnerable communities are directly or indirectly blamed for eroding the coast. Second, the discussion above on coastal governance, embankments, and rights explain reasons behind the growth of the aquaculture industry. Women, who are carrying out aquaculture activities, represent the most marginal and are a symptom of “mal-adaptation” as some commentators have termed it. The loss of land, agricultural subsistence livelihoods, through embankment breaches, are the first step in this cycle. Hence, while these activities pose threats to the HRTW in the context of hydro-climatic change, they reflect a symptom of a broader issue for law and policy interventions along rights-based approaches that promote more inclusion to build alternative livelihoods.

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<sup>786</sup>Ghosh, *Sustainability Conflicts in Coastal India* (n 631) 105; World Bank, ‘Building Resilience for Sustainable Development of the Sundarbans: Strategy Report’ (n 721) 4.

#### 5.3.3.3 *Moving beyond a centralised approach*

The discussion above illustrates some critical issues with having a centralised governance structure for the embankments, in the form of the Irrigation Department under the Embankment Act. An alternative approach could be to devolve the ownership of the embankments. First, a ‘community participation’ model, has been proposed. The WWF argues that in the Sundarbans, a “common property arrangement” may encourage more proactive embankment management, rather than an over-dependence on the state for embankment management.<sup>787</sup> This argument parallels other arguments over natural resources, such as participatory irrigation and joint forestry management.

However, the ‘community participation’ model, which is often advocated by international donors and NGOs, can depoliticise the embankment and shift responsibilities over poorest citizens.<sup>788</sup> For example, there have been experiments with community participation models over embankments in the Sundarbans in Bangladesh, where the ‘community’ manages operating, maintaining and financial cost-sharing through water management organisations (WMO).<sup>789</sup> The policies defined the community monolithic and depoliticised terms, thus side-lining landless, rural poor or women, or other marginalised sections of society. Elite capture was a major issue with the WMOs created. In fact, the WMO's were kept separate from the democratically elected local governments to avoid ‘politicising’ the subject. However, as Dewan and others highlight:

the idea of a ‘community-based’ WMO is in itself depoliticized, as it tends to obfuscate the power relations rooted in conflicts and deep inequalities embedded in society. Land ownership, landlessness and ‘illegal grabbing’ of government land and canals are contested issues in the coastal zones, where land is decreasing due to river erosion, salinity and demographic pressures.

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<sup>787</sup> Anamitra Anurag Danda and others, ‘Indian Sundarbans Delta: A Vision’ (World Wild Life Fund for Nature-India 2011) 25 <<https://www.wwfindia.org/?6362/indian-sundarbans-delta--a-vision>>.

<sup>788</sup> Camelia Dewan, Aditi Mukherji and Marie-Charlotte Buisson, ‘Evolution of Water Management in Coastal Bangladesh: From Temporary Earthen Embankments to Depoliticized Community-Managed Polders’ (2015) 40 *Water International* 401.

<sup>789</sup> *ibid* 413.

Ensuring equitable water use therefore becomes a complicated political issue. To see water management as an apolitical process is to wish away all the complexities involved.<sup>790</sup>

The experiences in Bangladesh regarding embankments and community participation are a warning against a depoliticised approach to participatory embankment management. From a HRTW perspective such an approach is problematic because, as discussed in Chapter Three, the HRTW is profoundly relational and universalised claims of ‘community’ do not recognise how HRTW and justice issues are intrinsically tied to relations of power (that can be reinforced through depoliticised notions of participation).

However, an alternative approach is to entrust the embankment as a ‘commons’ or as a public trust. Currently, the Bengal Embankment Act vests embankments as state property. Devolving the ownership of the embankment in this way could recognise that the embankment is not the property of the state. As discussed, the embankment mediates water, climatic processes, it can be a refuge to households from floods, but also building and fuel material for the poor during a crisis. Holding the embankment in trust or under a commons, rather than through an ownership structure, could begin a process of recognising the political and contested nature of the embankment, ultimately ‘democratising’ the embankment.

Ultimately the laws on the embankment are currently blind to climate, social, water relations on the ground. There is no real embankment policy for the region and other policies such as the State Action Plan for Climate Change are primarily concerned with the allocation of funding towards the same ends.

#### **5.4 Discussion: HRTW and the Multiple Layers of (in)justices**

The case studies above have illustrated several interrelated processes, laws, policies that mediate how the HRTW is realised. Several common themes can be observed.

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<sup>790</sup> *ibid* 411.

First, the lack of overarching framework. In relation to the Damodar, although there was a multi-purpose vision when the dam was built, as was demonstrated this was eroded over time. Water is primarily governed through the DVC's list of priorities, without an overarching framework that adequately considers inter-sectoral issues and without any reference of linkage to the human right to water (and the human right to the environment). Similarly, in the Sundarbans, attempts to provide a co-ordinating institution have largely failed, as the Sundarbans Affairs Department is not vested with the power to carry out its mandate adequately. Accordingly, the HRTW for ordinary residents in the Sundarbans is mediated by powerful departments, such as the Department of Irrigation and its control over the embankments.

The everyday relations over water in both case studies, between people, and people and hydro-climatic processes, influence who has or does not have water for basic uses. Law and policy play a large role in this because of the amount of power and discretion provided to particular actors, without an adequate framework that is based on issues of rights and justice.

Second, in Chapter Three it was argued that the role of participation through democratic means was an important aspect of the HRTW, though not an end of itself (section 3.3.5 above). In both the Damodar and the Sundarbans it is clear that the involvement in local communities and public participation is narrowly framed. For example, in relation to disaster management it was outlined that the lack of human rights language means that in disaster policies, decisions around provision of drinking water are mostly left to the discretion of the District Magistrate's Office and the PHED. Moreover, although the DM Act outlines an institutional framework that does include a role for local communities, it is largely in the initial disaster plan stage. while meetings before the plan are only one aspect, involvement in the disaster response largely remains in the hands of the government bureaucracy, through the District Magistrate and various NGOs it reaches out to. Accordingly, aspects of disaster management planning like vulnerability mapping and identifying groups that require more assistance like the rural poor, migrants, those living on *Char* lands, and so on, that require robust public participation and involvement of local government remains outstanding.

Third, the influence of ideas and discourses around water, land and society are significant process affecting the operation of law and policy and ultimately how water is distributed and accessed. In both case studies, the role of colonial and modernists ideas and discourses was illustrated and their role today through being embedded in law and policy. However, it is important to note that these ideas continue to prevail in new policies today. For example, in the case of the Damodar River, improving water access in blocks identified with significant water distress, is based on increasing the supply to water rather than more broadly considering the multiple factors that are causing water related issues across the region.<sup>791</sup>

Finally, in Chapter Three it was argued that the role of private sector and strategies of accumulation by dispossession had an important role in mediating the relationship between HRTW and hydro-climatic justice (section 3.3.4above). Both case studies also illustrated this relationship. In the case of the Damodar, the driver of the hydro-social relations was the DVC and its search for economic gains from utilising of water for its powerful hydro-power businesses. In the case of the Sundarbans, the role of tourism and coastal development, its activities in withdrawing water, building structures on the delta, and other related work was an important factor in the production of hydro-social injustice. Law and policy was inadequate in responding to these conflicts and contradictions and protecting rights-holders, for example, through inadequate definitions (such as not defining “eco-tourism”), or prescribing how the release of waters should be weighed and prioritised in the case of the DVC. These issues illustrated that while the HRTW existed in law in India, these broader processes had a profound effect in the realisation of the HRTW.

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<sup>791</sup> Interview with, Executive Engineer, Public Health Engineering Department (Mechanical Division), Asansol (29 March 2017); Public Health and Engineering (Government of West Bengal) (n 716) 20.

## CHAPTER 6.

# Rajasthan: Drought, Urbanisation and Water Conservation and the Human Right to Water

The north-western state of Rajasthan is India's largest state and provides a different socio-ecological landscape to examine the interactions between the HRTW and climate change than West Bengal. Rajasthan is the driest state in the country, characterised by its relatively low rainfall and physical water availability. Compared with an annual rainfall average of 1,100mm in India, Rajasthan's average is just 574mm.<sup>792</sup> In Western Rajasthan, this goes down to about 100mm on average.<sup>793</sup> Despite its size, the state has only one per cent of the country's surface water resources. Most of the population is rural and dependent on rainfall-agriculture. However, as this chapter will discuss, there is also rapid urban growth, drawing people away from agriculture.

The research for this chapter draws on field visits to two districts in Rajasthan. First, the Jaipur District, specifically the capital Jaipur and the Chaksu Block south of Jaipur. Second, the Jodhpur District in the South-western part of the state, specifically the rural areas in the arid western parts of the District. There are two parts to this chapter, examining how water, climate, socio-ecological relations and the HRTW intersect.

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<sup>792</sup> Government of Rajasthan, 'Rajasthan State Action Plan on Climate Change' (n 136) para 4.3.

<sup>793</sup> *ibid.*

The first case study, in Jaipur, analyses the HRTW in the context of rural to urban water transfers and changing hydro-climatic conditions. Urbanisation in Jaipur and surrounding townships have seen a strategy of reallocating water from rural areas to meet the needs of urban residents and the urban market economy. Law and policy have often legitimised these transfers, creating uneven access to water for rural communities, as well as diminishing the water sources for all. The second case study examines access to water in the western arid areas of Rajasthan, drawing on fieldwork in the Jodhpur district. In this fragile socio-ecological environment, physical water scarcity and hydro-climatic change are at the forefront of every activity. Water conservation, watershed development and rainwater harvesting strategies are essential steps in climate change ‘adaptation’ and the realisation of the HRTW in Rajasthan. Accordingly, the second part of the chapter discusses the policy framework for water conservation and its implications for realising the HRTW in the context of hydro-climatic change. Before examining the case studies, the first section provides a brief contextual and law and policy background.

## **6.1 Rajasthan: Contextual Background**

Freshwater is integral to the socio-ecological makeup of Rajasthan. In Rajasthan, there is only one river that flows throughout the year; thus, seasonal water variations are critical. Traditionally, lakes had an important role in freshwater management in Rajasthan, including a long history of man-made lakes built for freshwater use. While there is physical water scarcity, there is also spatial variability of water in Rajasthan. Most of Rajasthan has severe overexploitation and contamination issues related to groundwater.<sup>794</sup> The eastern part of Rajasthan has several rivers, as the first case study examines, and a drainage basin. In contrast, the western part has no rivers that flow through, and the primary water source is rainwater and an inter-state water canal.

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<sup>794</sup> See generally: Central Ground Water Board, *Ground Water Year Book Rajasthan 2016-2017* (Government of India 2017).

Hydro-climate processes in Rajasthan are particularly relevant because of the agricultural-based livelihoods of much of its population, the arid environment and the severe state of groundwater overdraft. While climate studies at a local scale are limited, temperatures are projected to increase by up to 5 degrees Celsius.<sup>795</sup> There also is an overall trend of decreased rainfall and a projected increase in extreme events, such as droughts and extreme rainfall episodes. In recent years, catastrophic floods have hit many parts of the state.<sup>796</sup> However, such extreme floods do not increase runoff, and they do not generally lead to any aquifer recharge. Thus, groundwater levels are unable to replenish. Rajasthan also has a history of droughts. The chance of occurrence of a meteorological drought is the highest in India, with recurrent droughts every 3 to 8 years.<sup>797</sup>

Rural areas in Rajasthan are mainly feudal, and Rajasthani society is traditionally highly patriarchal. Caste and gender have a crucial role in shaping decisions around water in Rajasthan. Relatedly, land ownership has a significant role in defining access to water. Historically, Rajasthan has had relatively large landholdings, and landowners are traditionally from higher castes. While there have been land reforms in Rajasthan, this has not necessarily translated to the rural poor making significant gains in land ownership. Like in many other parts of India, the effects of land reforms did see many large landowners lose land, and the previous tenant classes gain. However, for the most part, the landless remained landless.<sup>798</sup> As much of the landless population are from lower castes, tribal communities and women, the interface between these issues, land ownership and large landholdings remains, though the size land holdings have decreased in the last 20 years.

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<sup>795</sup> RK Yadav, K Rupa Kumar and M Rajeevan, 'Climate Change Scenarios for Northwest India Winter Season' (2010) 213 *Quaternary International* 12.

<sup>796</sup> Awasthi (n 14).

<sup>797</sup> Government of Rajasthan, 'Rajasthan State Action Plan on Climate Change' (n 136) s 4.3.1.3.

<sup>798</sup> Gupta, *Politics of Water Conservation Delivering Development in Rural Rajasthan, India* (n 164) 42–43; RJ Fisher, *If Rain Doesn't Come: An Anthropological Study of Drought and Human Ecology in Western Rajasthan* (Manohar 1997) 97.



These relations are particularly crucial in defining access to, and control over water. Rights to abstract groundwater in India are linked to land rights, so land-owning (higher caste) have greater access to water, often benefiting through on-selling groundwater at profitable margins. In rural areas, lower caste communities often face discrimination through being denied access to water tanks and tube wells, or are dependent on upper caste communities for water. This can lead to violence and abuse of lower caste women when they try to collect water from these sources.<sup>799</sup> These conflicts exacerbate during times of low rainfall and water stress.

Finally, water stress in Rajasthan also creates higher levels of migration to urban areas, both within and outside Rajasthan.<sup>800</sup> Such migration places a more significant burden on urban water demands but also reconfigures and transforms relations around water.<sup>801</sup>

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<sup>799</sup> Programme on Women's Economic, Social and Cultural Rights, 'Dalit Women in Rajasthan: Status of Economic, Social and Cultural Rights' (2008) 38  
<[http://www.pwescr.org/Dalit\\_Report.pdf](http://www.pwescr.org/Dalit_Report.pdf)> accessed 25 August 2018.

<sup>800</sup> A survey of 38,828 households in 2014 by Ajeevka Bureau found that 46% of households in Rajasthan have one or more members migrating for work. Of those who migrate around 60% migrate inside Rajasthan and 40% leave Rajasthan. See: Ajeevka Bureau, 'Their Own Country: A Profile of Labour Migration from Rajasthan' (2014)  
<<http://www.ajejevika.org/assets/pdfs/Their%20Own%20Country.pdf>>.

<sup>801</sup> MS Rathore and others, 'The Uncomfortable Nexus: Water, Urbanisation and Climate Change in Jaipur India' (Institute for Social and Environmental Transition-International, & Centre for Environmental and Development Studies 2011) <<https://www.i-s-e-t.org/resource-uncomfortable-nexus>> accessed 3 February 2018.

Figure 4: Map of Case Study Areas in Rajasthan



#### *6.1.1 Water and climate law and policy framework*

Much like the rest of India, law and policy for the water sector in Rajasthan is characterised by rules divided by the different sectors and uses of water. Such rules are often complex and fragmented. In recent years, there has been some effort to bring coherence through framework legislation, as well as a groundwater bill.<sup>802</sup> However, this has not yet translated into formal legislation. Groundwater and surface water are regulated through different sets of rules, adding to the fragmentation. There is no groundwater specific legislation in Rajasthan and groundwater rights are linked to

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<sup>802</sup> See: Draft Rajasthan Water Resource management Act, 2012 and Rajasthan Groundwater Rational Use and Management Act, 2005.

land. There is also no drinking water-specific law or policy in Rajasthan. In recent years, legislative reform has concentrated on institutional reform.<sup>803</sup>

As mentioned, groundwater levels in Rajasthan are severely depleted. The majority of blocks in Rajasthan have been classified by the Central Groundwater Authority (“CGWA”) as over-exploited (over 100% groundwater development).<sup>804</sup> The rest are either at ‘critical’ (90-100%) or ‘semi-critical’ (70-90%) stages.<sup>805</sup> Blocks which are not at such critical levels of exploitation are usually ones where water is saline, thus are not able to be used in any case. Thirty-four blocks are ‘notified’ by the CGWA, through its powers under the Environment (Protection) Act 1986. A notified block has restrictions on further groundwater abstraction (excluding in the case of drinking and domestic water use). However, existing users of groundwater in these areas can continue to exploit. Groundwater quality is also a significant issue throughout the state. Apart from salinity, fluoride, nitrate, and iron have all affected groundwater quality in different blocks of the state.<sup>806</sup>

While there is no framework legislation in the state as yet, Rajasthan does have a State Water Policy (“Rajasthan Water Policy”).<sup>807</sup> The Rajasthan Water Policy emphasises that water resource planning and management should be decentralised and participative and that the hydrological unity of water needs to be understood in such planning and management of water.<sup>808</sup> It also provides a guideline for water allocation priority that places ‘human drinking water’ as the highest drinking water priority.<sup>809</sup> This allocative priority list is reproduced below. The Rajasthan Water Policy also

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<sup>803</sup> The government has adopted the The Rajasthan River Basin and Water Resources Planning Act 2015 s 10. that establishes an Authority that is responsible for, among other things, the planning of all watershed, irrigation and drinking water projects.

<sup>804</sup> Central Ground Water Board (n 794) 43.

<sup>805</sup> *ibid.*

<sup>806</sup> Central Ground Water Board (n 794).

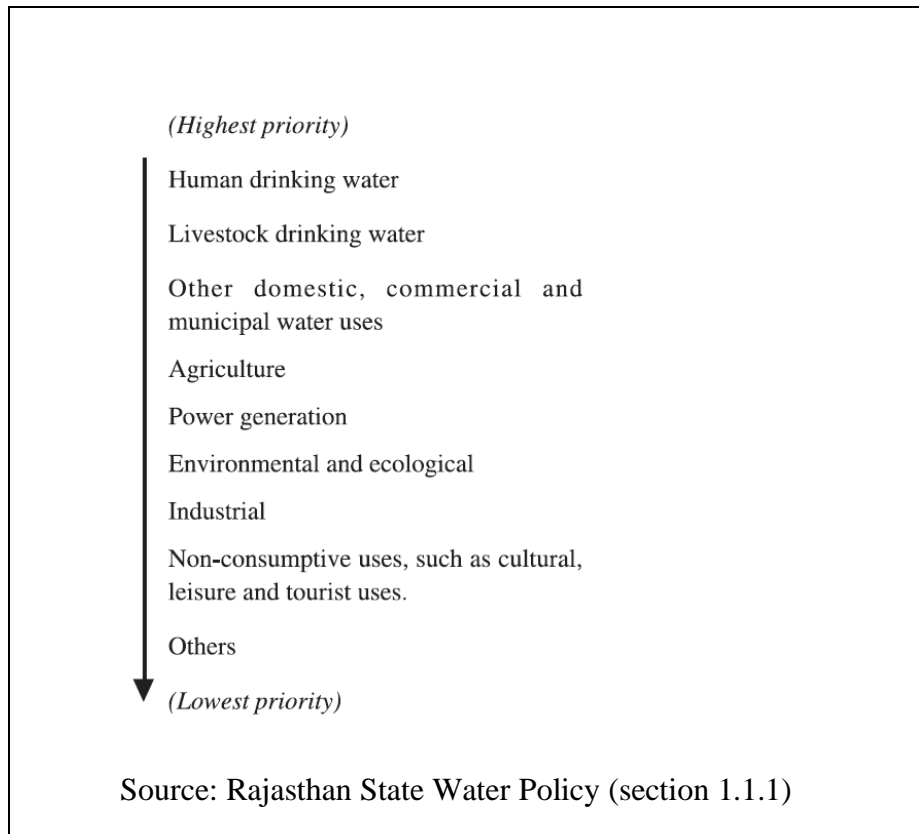
<sup>807</sup> Government of Rajasthan, ‘State Water Policy’ (2010).

<sup>808</sup> *ibid* 1.4.

<sup>809</sup> Government of Rajasthan, ‘Rajasthan State Action Plan on Climate Change’ (n 136) s 1.1.1.

outlines the need to abolish land rights-based groundwater rights; however, as mentioned above, this has not translated into legislative action yet.

Figure 5: Allocation Priority under State Water Policy



The state government has also released a State Action Plan on Climate Change.<sup>810</sup> The State Action Plan on Climate Change generally outlines a detailed list of actions and projects. Various nominated government departments implement these activities. However, as Chapter Four pointed out, the State Action Plans have had a minimal impact. In interviews with government department officials, the State Action

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<sup>810</sup> Government of Rajasthan, 'Rajasthan State Action Plan on Climate Change' (n 136).

Plan was seen primarily as another source of funding for projects, rather than broader policy coherence or coordination.<sup>811</sup>

## **6.2 Case Study I: Jaipur, Rural to Urban Water Flows and the Uneven Realisation of the HRTW**

Since the 1990s, there has been an urbanisation drive across India that has seen flows of resources, capital, people and water redirected towards cities. Governments and international policymakers have pushed urbanisation generally to increase GDP growth. The Asia Development Bank (“ADB”), an important multi-lateral donor bank driving urbanisation projects in Rajasthan, states that urban areas are central to future economic growth.<sup>812</sup> This is because the agricultural share of GDP is relatively small and has been in long-term decline. Between 2006 and 2016, the urban population of India has increased by nearly 100 million, and GDP contribution of urban India is expected to rise to a share of 70% of total GDP by 2020.<sup>813</sup> Jaipur, the capital of Rajasthan, is one of the fastest-growing cities in India.<sup>814</sup> Hydro-climatic issues are critical for urban development. Indeed, the ADB itself states that urban development in Asia faces critical water insecurity that is “compounded by increasing climate variability and water-related disasters that threaten numerous major urban areas, agricultural production, and coastal populations”.<sup>815</sup>

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<sup>811</sup> Interview with Executive Engineer, Water Resources Department (Jaipur, Rajasthan 22 June 2017).

<sup>812</sup> Brian Roberts and Kanaley Trevor (eds), *Urbanization and Sustainability in Asia: Good Practice Approaches in Urban Region Development* (Asian Development Bank 2006) 19.

<sup>813</sup> Ernst & Young, ‘India’s Growth Paradigm - How Markets beyond Metros Have Transformed’ (2017) <<https://www.ey.com/in/en/industries/media---entertainment/ey-leveraging-indias-newemerging-urban-markets>> accessed 29 August 2018.

<sup>814</sup> *ibid.*

<sup>815</sup> Asian Development Bank, *Asian Water Development Outlook 2016: Strengthening Water Security in Asia and the Pacific* (Asian Development Bank 2016) xiii.

The hydro-climatic and urbanisation issues that Jaipur faces are similar to other parts of India and South Asia.<sup>816</sup> These include rural to urban migration, the rapid growth of areas on the outskirts of the city, limited or low water supplies, heavily depleted groundwater at both local and regional scale and risk of water-related disasters such as floods and droughts.<sup>817</sup> Today, in order to meet the growing water demands of Jaipur city, water is being provided from a reservoir that lies 130km south of the city, the Bisalpur reservoir.

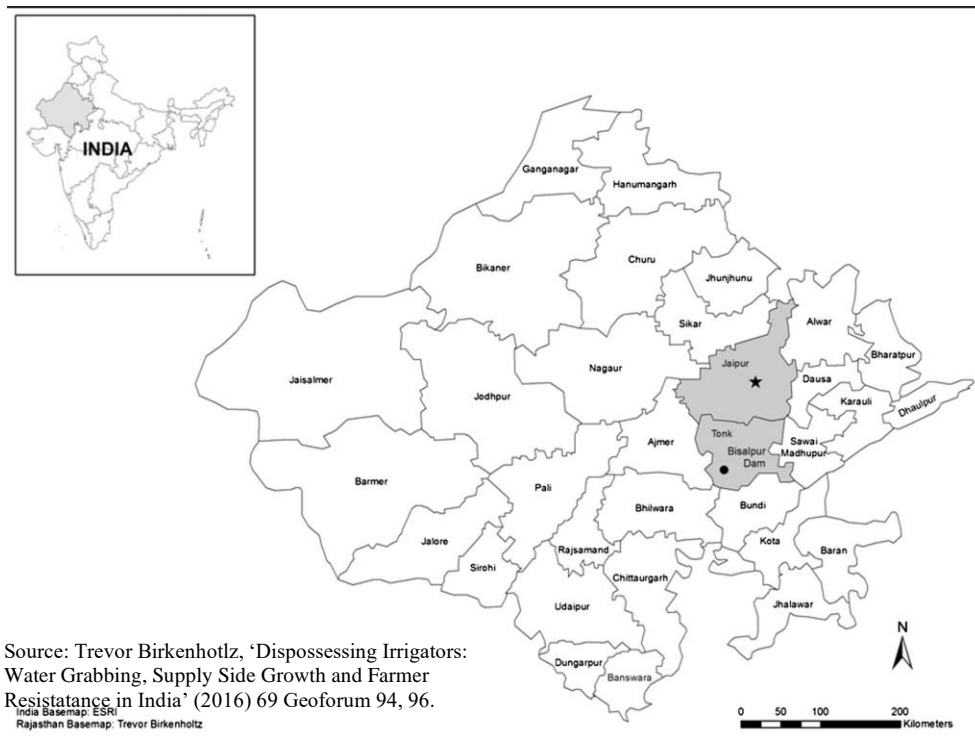
This case study analyses the unequal realisation of the HRTW in the Jaipur District. Law and policy have a significant role in the dispossession of water from rural communities to urban communities in the area. A narrow focus on drinking water and cost recovery have a vital role in how water is unequally and unjustly shared. Hydro-climatic change is inextricably linked to these issues, including due to the uncertain and uneven nature of rainfall. The future of hydro-social relations in Jaipur will depend on the ability to utilise the Bisalpur, something that is predicted to become more conflicted and contentious.

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<sup>816</sup> See generally: Vishal Narain and Anjal Prakash (eds), *Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanization* (Oxford University Press 2016).

<sup>817</sup> Rathore and others (n 801) 9–32.

Figure 6: Location of Bisalpur Dam



### 6.2.1 *Bisalpur to Jaipur pipeline and its construction in the context of urbanisation and cost recovery*

The Bisalpur dam reservoir was completed in 1995. It was initially intended to provide water for irrigation in the state and augment the supply of water to neighbouring towns. However, with Jaipur city facing significant water stress because of its growing urban population, the proposed use was expanded to include providing water to Jaipur through a pipeline project funded by the Japan International Cooperation Agency and the ADB.

The ADB had been working with the Government of Rajasthan since 1998 on the Rajasthan Urban Infrastructure Development Project (“ADB Urbanisation Project”).<sup>818</sup> The ADB Urbanisation Project involved significant infrastructural

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<sup>818</sup> Asian Development Bank, *Facilitating Infrastructure Development in India: ADB’s Experience and Best Practices in Project Implementation* (2011) 83.

upgrades and policy reforms, aimed at providing a model suitable to be rolled out to other cities.<sup>819</sup> The initial scope was for \$362 million of total investment, with \$250 million of that coming by way of a loan from the ADB.<sup>820</sup> After the first phase of the urbanisation project, there was a change in the project scope to include the construction of the pipeline to provide water from Bisalpur to Jaipur. The official reason for the project was because of recent drought and dwindling groundwater resources.<sup>821</sup> The pipeline would thus, “supply water to Jaipur city to reduce the city’s dependence on its severely constrained groundwater resources”.<sup>822</sup>

The ADB Urbanisation Project was directly influencing both water supply infrastructure and water policies in Rajasthan. A technical assistance grant provided policy reforms including the corporatisation of state utilities; improving the “revenue realisation” from water and sewerage charges; and the promotion of public-private partnership (PPPs) in urban water and wastewater sectors.<sup>823</sup> The reforms reflect the global policy shift towards water as an ‘economic good’ since the 1990s.

The Rajasthan State Water Policy further affirmed the idea of water tariffing and pricing that has influenced how government departments chose to invest in water-related projects.<sup>824</sup> Once again, the influence of international development banks has been significant. The ADB emphasised financial sustainability through urban water supply ‘optimising efficiency’ and ‘minimising losses’, reducing operation and

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<sup>819</sup> Asian Development Bank, ‘Asian Development Bank’s Involuntary Resettlement Safeguards: Project Case Studies in India’ (Asian Development Bank 2006) 11  
<<https://www.oecd.org/derec/adb/47108353.pdf>> accessed 8 August 2018.

<sup>820</sup> *ibid.*

<sup>821</sup> *ibid.*

<sup>822</sup> Urban Development Department (Government of Rajasthan), ‘Full Resettlement Plan: Bisalpur Water Supply Project’ 1 <<https://www.adb.org/sites/default/files/project-document/78357/bisalpur-water.pdf>> accessed 8 August 2018.

<sup>823</sup> Asian Development Bank, ‘Attached Technical Assistance: Capacity Development of Institutions in the Urban Sector in Rajasthan’ (Asian Development Bank 2014)  
<<https://www.adb.org/projects/documents/rajasthan-urban-sector-development-program-rrp>> accessed 1 August 2019.

<sup>824</sup> Government of Rajasthan, ‘State Water Policy’ (n 807) s 8.



maintenance costs.<sup>825</sup> Drinking water projects in Rajasthan, often with the support of international donor agencies, have been based on the commodification of water services. For example, the *Aapni Yojana* drinking water project that ran in northern Rajasthan billed villagers for water they previously got for free, on the rationale of cost recovery and efficiency gains.<sup>826</sup> Such a practise was observed in villages near Bisalpur that were visited for this case study.

The impacts of these structural and policy reforms are important in understanding how they have facilitated the transfer of water from rural to urban areas. Since the mid-1990s, cost-recovery has been an essential aspect of the Public Health and Engineer Department's ("PHED") operation.<sup>827</sup> One of the key areas where "full cost recovery" is demanded is the operation and maintenance of water supply projects. This is expressly stated in the State Water Policy and instilled through the technical assistance provided by the ADB.<sup>828</sup> Accordingly, government departments had to try to recoup the full cost of the operation and maintenance of water supply projects, through the tariffs people pay for their water.

Although the PHED is expected to recover costs, the tariff rates for water were set by the legislature under the Rajasthan Municipal Act 1994. Thus, the PHED is expected to recover their costs, but unable to set the tariffs they needed to do this, creating a dilemma for the department. As it stands, tariffs are significantly higher for domestic, commercial and industrial use. According to Birkenholtz, cost recovery is "28 and 297 times higher" correspondingly for "domestic and industrial uses versus irrigation" on a per kilolitre basis.<sup>829</sup> Domestic and industrial uses have an urban bias. For the PHED, under pressure to recover costs for their water supply programmes, it made perfect sense to re-direct water to urban domestic, commercial and industrial

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<sup>825</sup> Asian Development Bank, 'Proposed Multitranchise Financing Facility India: Rajasthan Urban Sector Development Program' (Asian Development Bank 2007) 5.

<sup>826</sup> O'Reilly and Dhanju (n 208).

<sup>827</sup> Birkenholtz, 'Dispossessing Irrigators' (n 421) 99.

<sup>828</sup> Government of Rajasthan, 'State Water Policy' (n 807) page 2.

<sup>829</sup> Birkenholtz, 'Dispossessing Irrigators' (n 421) 99.

uses where there is better cost recovery. In other words, the logic of cost recovery, instilled in civil servants and through policy reforms, combined with the tariff rates set by the legislature were significant in the decisions to reallocate water.

In addition to the reforms of the water sector, the Government of Rajasthan (with the help of the ADB) have focused on intensifying urbanisation. Rajasthan has released a suite of policies in the last two decades that push towards higher urban growth and investment, including focusing on tourism and special economic zones in Jaipur. For example, the Rajasthan Tourism Unit Policy 2015 encourages investment into tourism by making land readily available for hotels, as well as tax breaks.<sup>830</sup> Similarly, the Rajasthan Township Policy 2010 is centred around attracting investment into building urban townships in Rajasthan, freeing up land and providing financial incentives.<sup>831</sup> Special Economic Zones, such as the Mahindra World City in the periphery of Jaipur have also been constructed, drawing in investment, as well as flows of water.<sup>832</sup> This has been supplemented with a more significant allocation of spending by the state government for urban amenities and financial support from the ADB into urban development.<sup>833</sup>

#### *6.2.1.1 Climate change and ecological concerns in the basin*

The pipeline has been operational since 2009. However, there are fundamental questions regarding the long-term viability of the Bisalpur reservoir due to climate variability. It is predicted that annual rainfall under different climate scenarios in the Banas River Basin, which constitutes the catchment area for the Bisalpur Dam, will

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<sup>830</sup> Government of Rajasthan, 'Rajasthan Tourism Unit Policy' (2015) <<http://www.tourism.rajasthan.gov.in/content/dam/rajasthan-tourism/english/pdf/acts-and-policy/1-Rajasthan-Tourism-Unit-Policy-2015.pdf>> accessed 8 August 2019.

<sup>831</sup> Government of Rajasthan, 'Rajasthan Township Policy' (2010) <<http://www.naredco.in/pdfs/rajasthan-township-policy-2010.pdf>> accessed 8 August 2019.

<sup>832</sup> Birkenholtz, 'Dispossessing Irrigators' (n 421) 95.

<sup>833</sup> Asian Development Bank, 'Proposed Multitranche Financing Facility India: Rajasthan Urban Sector Development Program' (n 825).

decrease over time and there will be more extreme rainfall.<sup>834</sup> Despite the fact the Bisalpur-dam reservoir has been operational since 1995, the reservoir has only filled nine times between 2002 and 2017.<sup>835</sup> In other words, the reservoir has not operated anywhere near its initial planning. Even in years when the monsoons have been ‘good’, the reservoir has not filled, and the reservoir has only been able to provide Jaipur a fraction of allocated amount. In recent years, this has meant Jaipur has had frequent issues delivering water to residents.<sup>836</sup> At the same time, with a lack of alternatives, the Bisalpur dam-reservoir, the pipeline to Jaipur, has become the “lifeline” of Jaipur, as well as a number surrounding cities and towns.<sup>837</sup> Accordingly, there is an underlying tension between the rapid urbanisation, the demand for water, rainfall and climate extremes, and the insecurity of supply of water from Bisalpur.

#### 6.2.1.2 *The role of the judiciary in facilitating rural to urban transfers*

Administrative and judicial orders also have had an essential role in the reallocation of water from rural areas to Jaipur city. The catchment areas of the Bisalpur dam-reservoir is the Banas River. Through the 1990s, the Government had supported the construction of anicuts, and around 27,000 anicuts were constructed in the catchment areas. *Anicuts* are small earthen or concrete dams which impound or regulate the flow of water. Anicuts allow for groundwater recharge, and this is particularly important for communities that live on hills and away from lakes and canals that surround Bisalpur. In particular, farmers benefited through being able to capture rainwater and extract the recharged groundwater. However, from the perspective of filling the Bisalpur dam-reservoir, it was felt that the anicuts were

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<sup>834</sup> Rathore and others (n 801).

<sup>835</sup> Mark Everard and others, ‘Assessing the Feasibility of Integrating Ecosystem-Based with Engineered Water Resource Governance and Management for Water Security in Semi-Arid Landscapes: A Case Study in the Banas Catchment, Rajasthan, India’ (2018) 612 *Science of The Total Environment* 1249.

<sup>836</sup> ‘Jaipur to Face Water Scarcity Due to Cut in Supply from Bisalpur Dam’ *DNA India* (30 August 2018) <<https://www.dnaindia.com/jaipur/report-jaipur-to-face-water-scarcity-due-to-cut-in-supply-from-bisalpur-dam-2656771>> accessed 3 September 2018.

<sup>837</sup> ‘Jaipur’s Lifeline Bisalpur Dam Filling to the Brim’ *Times of India* (17 June 2016) <<https://timesofindia.indiatimes.com/city/ajmer/Jaipur-lifeline-Bisalpur-dam-filling-to-the-brim/articleshow/53248289.cms>> accessed 3 September 2018.

preventing recharge of the reservoir. In 2010, an administrative order of the state government banned anicuts in the Bisalpur catchment area.<sup>838</sup>

Additionally, the Rajasthan High Court had in 2004 and 2012 issued directions banning anicuts over 2m, including the destruction of any anicuts which were above the threshold.<sup>839</sup> In 2012, the High Court of Rajasthan took *Sou moto* action to address the drying up of the Ramgarh Dam.<sup>840</sup> Ramgarh Dam, about 32 kilometres from Jaipur city, was previously the primary surface water resource in Jaipur city. However, after years of overuse and degradation, it has dried up. The Court's concern was less focused on the broader issues of access to water and environmental degradation across the entire basin. The focus was on the fact that the dam was no longer "taking care" of Jaipur, which the Court stated was "trying to shine on the world map".<sup>841</sup> The Court passed orders to restrict anything that diverted water from flowing into the river, namely including anicuts that were used by rural communities. The judicial and administrative decisions had a devastating effect on rural communities that relied on this groundwater for irrigation, domestic and drinking water needs.

Overall, the structural changes in how water was governed by the government departments in the state, judicial decisions that prevented rural communities using techniques to utilise rainfall, and the policies to attract investment in urban projects, lead to increasing the demand for water and incentivised the need to transfer water into urban areas. These deliberate policy reforms have led to a situation where the pipeline is essential for the city's water demands today.

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<sup>838</sup> 'Curb on Construction of New Dams, Anicuts in State' *Times of India* (4 August 2010) <<https://timesofindia.indiatimes.com/city/jaipur/Curb-on-construction-of-new-dams-anicuts-in-state/articleshow/6254404.cms>> accessed 3 September 2018.

<sup>839</sup> *Sou Moto v State of Rajasthan* [2012] High Court of Rajasthan SBCWP 11153/2011; *Abdul Rahman v State of Rajasthan* [2004] High Court of Rajasthan DBCWP 1536/2003.

<sup>840</sup> *Sou Moto v State of Rajasthan* (n 839).

<sup>841</sup> *ibid.*

### 6.2.2 *Villages in Chaksu: A microcosm of hydro-climatic injustices for the dispossessed*

The diversion of water from rural areas has been controversial. When the Jaipur bound pipeline began construction in 2005, there were protests by farmers who were seeing their water being diverted. These protests turned violent, with at least five farmers being shot and killed by police.<sup>842</sup> This tragic incident characterises the conflicts, unequal flows and access to water in the area.

Chaksu is a block not far from where the protests took place in 2005. In Chaksu and the neighbouring Phagi block, a long-running campaign has now seen piped water supply from Bisalpur being installed progressively in the villages. While some villages have started receiving water, others are yet to do so. In interviews during field visits to the Chaksu block, which lie halfway between Bisalpur and Jaipur, interviewees expressed resentment at the everyday sight of pipelines transporting water from Chaksu away to the city.<sup>843</sup> Residents had been using groundwater from tube wells for the past few decades. However, groundwater tables have reduced drastically in the last ten years. The Chaksu Block is classified as ‘overexploited’ by the Central Groundwater Authority.<sup>844</sup> The lack of controls over existing groundwater users means that the regulatory can only restrict ‘new’ non-domestic use exploitation.

Residents express distress at the lack of groundwater in recent years. They also complain of the quality of groundwater, for example leading to arthritis and joint pains that they believed linked to the water, as well as the taste of water from groundwater tube wells.<sup>845</sup> The state government has recognised fluoride as a major

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<sup>842</sup> Bhaduri (n 35) 10.

<sup>843</sup> Several interviews from field visit to Chaksu Block; Bhaduri (n 35).

<sup>844</sup> Central Ground Water Board, ‘Report on Aquifer Mapping and Ground Water Management: Jaipur District, Rajasthan’ (2017) 20–21  
<[http://cgwb.gov.in/AQM/NAQUIM\\_REPORT/Rajasthan/Jaipur.pdf](http://cgwb.gov.in/AQM/NAQUIM_REPORT/Rajasthan/Jaipur.pdf)> accessed 27 August 2019.

<sup>845</sup> Interviews with local inhabitant, Chaksu village (Chaksu, 6 September 2017).

issue in Chaksu.<sup>846</sup> While fluoride issues in water are caused by geological makeup of rocks underground, its exposure is exacerbated by the over-extraction of groundwater. Fluoride is a significant public health issue in Rajasthan and recognised as major global public health concern by the World Health Organisation.<sup>847</sup> Excessive fluoride stimulates tooth enamel and skeletal fluorosis.<sup>848</sup>

Apart from the quality of water, quantity has always been an issue in the villages in this area. Groundwater situation in recent years has meant tube well water is scarce in the dry season, particularly in the pre-monsoon summer. Caste and power relations play a significant role at the local level as well. The Director of the Centre for Community Economics and Development Consultants Society (“CECOEDECON”), an NGO that works in the area, explained that *“with tube wells, politics and caste play a huge role in where standpoints were put and who got water”*.<sup>849</sup> There are no official records of the tube wells in the block. Livelihoods have been particularly affected because the level of water scarcity has prevented even subsistence levels of agricultural activity. While CECOEDECON and a few other NGOs work on livelihood activities, in general, there is a significant shift towards migrating toward the city.<sup>850</sup>

As mentioned, the long-running campaign to get water from Bisalpur to the villages in Chaksu and Phagi has now led to a roll-out of water supply projects to several villages. As with many other water supply projects in Rajasthan, a ‘cost recovery’ model is adopted where villagers contribute for consumption, as well for initial construction costs and maintenance. A community-based committee is formed for the management, operation and maintenance of the water supply source, including

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<sup>846</sup> Central Ground Water Board (n 844) 20.

<sup>847</sup> World Health Organisation (WHO), ‘Inadequate or Excess Fluoride: A Major Public Health Concern’ (2010) <<https://www.who.int/ipcs/features/fluoride.pdf?ua=1>> accessed 29 August 2019.

<sup>848</sup> *ibid.*

<sup>849</sup> Interview with Executive Director, Centre for Community Economics and Development Consultants Society (CECOEDECON) (Chaksu, Rajasthan 6 September 2017).

<sup>850</sup> A 2014 survey in Rajasthan found that 46% of households had at least one member of the household who had migrated to the city for work. See: Ajeevika Bureau (n 800).

for the collection of money from households. In the village of Bapugaon, for instance, water supply from Bisalpur started in early 2017. Supply is timed to come in around 7 am to a common tap for a limited amount of time (an hour or so usually). Women generally collect water in the morning, and this is a keenly contested affair. As one woman described to me “*we are friends now but come back at 7 am and we will be fighting for that water*”.<sup>851</sup> Whereas with groundwater tubewells, there may have been a more decentralised source of water available in several places in the village (depending on how many tubewells were in a village), piped water supply is much more centralised. Supply can be intermittent and irregular, and on those days, people go back to groundwater tubewells, despite their issues with fluoride. More recently, there have been reports of water ATMs in some parts of Chaksu, ostensibly filling this gap in access to people’s basic drinking water.<sup>852</sup>

The gendered roles around water are reflected in the different concerns around water in the villages. One woman interviewed said that “*men are not aware of the issues we face*” because “*they are only thinking of water for farming*”.<sup>853</sup> Livelihood activities also varied. While mustard, sorghum, millet and peanuts were grown in the block, they were rain-dependent crops. The erratic rainfall and lack of groundwater have created significant distress in growing these crops. Previously, a small river tributary was used, in particular seasons, for basic irrigation purposes. However, level of pollution and degradation means it is no longer able to serve this purpose. While rain-fed subsistence farming and small-scale farming is the mainstay of most of the households, some wealthier households that have private borewells/tubewells can grow wheat, a much more profitable crop. The water stress in some villages is alleviated by NGOs, who work on a project basis to organise

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<sup>851</sup> Group interview with several women village inhabitants (Bapugram Village, Chaksu, 6 September 2017).

<sup>852</sup> Himani Chandna, ‘Kiosks Providing Safe Drinking Water’ *BW Businessworld* (23 March 2017) <<http://businessworld.in/article/Kiosks-Providing-Safe-Drinking-Water/23-03-2017-114950>> accessed 27 August 2019.

<sup>853</sup> Group interview with several women village inhabitants (Bapugram Village, Chaksu, 6 September 2017).

villagers and create small rainwater harvesting structures (discussed in more depth later in this chapter). However, these are only in a minority of villages.

### *6.2.3 Dispossessing rural water: the human right to water and accumulation by dispossession*

The everyday hydro-climatic injustices experienced by residents in areas like Chaksu can be seen through the broader lens of processes that drive an unequal realisation of the HRTW. It is sometimes asserted that climate change will force rural to urban migration because of the hydro-climatic stress in rural areas. For example, Narain and Prakash write that the lack of agricultural growth, due to climate change, means that “poor people are forced to migrate to urban centres leading to increased population pressure in urban areas leading to rapid urbanisation”.<sup>854</sup> However, this only provides a partial explanation of what is going on in the context of the Jaipur District. In the case of Jaipur, the role of law and policy, the state government, international donor agencies, as well as hydro-climatic processes, are relevant to the co-production of the uneven realisation of the HRTW.

In Rajasthan, the reallocation of water from rural areas into urban areas has occurred through state-led measures. These measures have dispossessed rural populations of water to fulfil the strategies of market-friendly economic growth in Jaipur.<sup>855</sup> This reallocation of water from Jaipur can be analysed through the lens of “accumulation by dispossession”, discussed in Chapter Three, where the necessity of water for urban commercial and industrial growth has directed the state to transfer resources of rural population through political, legal and other means.<sup>856</sup> A combination of weak protections over water rights for poor rural communities, limited measures for ecological conservation and preservation, and investment decisions (to urbanise Jaipur), have facilitated the dispossession of water from communities. The

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<sup>854</sup> Narain and Anjal Prakash (n 816) 3.

<sup>855</sup> Birkenholtz, ‘Dispossessing Irrigators’ (n 421).

<sup>856</sup> *ibid.*



communities who have been dispossessed now lack water for basic livelihood uses in the interests of ‘urban development’.<sup>857</sup> [There is no compensation or reparation for rural populations who are dispossessed of water. Here, the transfer can be seen both in the context of the pipeline project that directly takes water from Bisalpur, a ban on anicuts (which I discuss later), as well as the over-extraction of groundwater in the Jaipur district that serves urban areas. For instance, groundwater is often bought privately by corporate entities in Jaipur, creating a market for the overexploitation of groundwater drawn from rural areas.<sup>858</sup> The limited legal rules around groundwater aid this overexploitation and reallocation towards Jaipur city.

As stated in section 2.1, a significant element of this state-led dispossession was through a suite of policies that have been introduced since the 1990s to encourage urban development. These policies came in conjunction with structural shifts in the way government water departments operated through the ADB led reforms increasing corporatisation, and conceptualising water as an ‘economic good’. As Chapters Three and Chapter Four explained, this has been a broader trend since the 1990s reflected in the Dublin Principles and international policy.<sup>859</sup> As a consequence, under a rationale of cost-recovery, government departments in Rajasthan have had a greater incentive in expanding into domestic water supplies to urban areas, industrial and commercial sectors rather than providing water to rural communities where cost recovery is difficult.<sup>860</sup> In other words, rather than a universal and human rights-based drinking water supply programme, decisions are made with cost recovery as a prominent priority.

The reallocation of water from rural areas near the Bisalpur Reservoir can be framed in advancing the HRTW for urban residents of Jaipur. The population of Jaipur has risen sharply in the last decade, with at least a quarter of residents now

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<sup>857</sup> Molle and Berkoff (n 34).

<sup>858</sup> Michael Levien, *Dispossession Without Development: Land Grabs in Neoliberal India* (Oxford University Press 2018) 173.

<sup>859</sup> International Conference on Water and the Environment (n 485).

<sup>860</sup> Birkenholtz, ‘Dispossessing Irrigators’ (n 421).

living in slums.<sup>861</sup> Meeting the water requirements of city dwellers has been an underlying justification for reallocations. The judiciary in India has in the past justified the reallocation of water based on fulfilling the HRTW, including famously in the *Narmada Bachao Andolan v Union of India and Others* case.<sup>862</sup>

In *Narmada*, water was transferred through a major dam in Madhya Pradesh, and the primary beneficiaries would be those living in the western regions of India. Justice Kirpal saw fulfilling the water needs of the communities in the western regions as more critical than the HRTW claims of tribal populations who would be displaced from their homes and villages.<sup>863</sup> Moreover, the judge added that the displaced people would ‘benefit’ from being removed from their lives in rural tribal hamlets. The Court showed disdain for rural lives and livelihoods, implicitly suggesting that they are inferior or “backward” and urbanisation was a natural step of progress.<sup>864</sup> Although the *Narmada* judgement has been criticised by several commentators, its reasoning and justification endure in Indian jurisprudence in many ways.<sup>865</sup> For instance, the High Court has since issued orders in another case diluting the universality of the HRTW, saying that those who live in slums cannot claim the HRTW “on par with” those who live in lawfully constructed premises.<sup>866</sup> Rajagopal argues that since the 1990s, the judiciary’s activism “increasingly manifests several biases” including in favour of the urban middle classes and against rural farmers.<sup>867</sup>

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<sup>861</sup> ‘Slum Population Double in Jaipur in Eight Years, 22.5% of Total Population: Survey’ *DNA India* (19 July 2018) <<https://www.dnaindia.com/jaipur/report-slum-population-double-in-jaipur-in-eight-years-225-of-total-population-survey-2638965>> accessed 7 September 2018.

<sup>862</sup> *Narmada Bachao Andolan v Union of India and Others* (n 243).

<sup>863</sup> The number of displaced people has been disputed, with different estimates from different sources. Estimates range from 200,000 people to 500,000 people, the majority of whom are tribal. See: Philippe Cullet (ed), *The Sardar Sarovar Dam Project: Selected Documents* (Ashgate 2007) 20.

<sup>864</sup> Rajagopal, ‘Pro-Human Rights but Anti-Poor?’ (n 242) 163.

<sup>865</sup> Rajagopal, ‘The Role of Law in Counter-Hegemonic Globalization and Global Legal Pluralism’ (n 264); Cullet, ‘A Meandering Jurisprudence of the Court’ (n 351).

<sup>866</sup> *Pani Haq Samiti v Brihan Mumbai Municipal Corporation* [2014] Public Interest Litigation No 10 of 2012 (High Court of Judicature, Bombay).

<sup>867</sup> Rajagopal, ‘Pro-Human Rights but Anti-Poor?’ (n 242) 158.

The justification of the reallocation of water to realise the HRTW of urban residents also needs to be considered in the context of stratified access to water in Jaipur city itself. While the Bisalpur project has met the needs of international development banks and the state government in increasing Jaipur's water supply<sup>868</sup>, access to water in Jaipur itself is highly stratified<sup>869</sup>. There are also discrepancies between the government and development bank statistics of water supply in Jaipur and the actual quantity and quality of water accessible to all residents.<sup>870</sup> The discrepancies are most notable for the poor who are often left out of service delivery because they live in informal settlements. Poor residents and those in peri-urban townships often have to rely on purchasing water from tankers. These practices are consistent with other parts of India and South Asia, where certain sections of society are left out of urban planning, and there is a lack of rights-based discourse in water law and policy.<sup>871</sup>

Ironically, it is often people from rural areas like Chaksu and other blocks that have been dispossessed of water by urban areas, that move to cities and townships. Here they often settle in 'illegal' settlements, only to face further struggles in accessing basic water.<sup>872</sup> Thus, the utilitarian justification of dispossessing rural populations of water, which is explicitly made by both development banks and the state government in Rajasthan, to address the urgent human rights and drinking water needs of urban citizens does not hold up if considered in light of how water is shared and accessed in the city as a whole.

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<sup>868</sup> Ernst & Young Sustainability Co, 'Bisalpur Jaipur Water Supply Project (Transfer System)' (Japan International Cooperation Agency 2015) FY2015 Ex-Post Evaluation of Japanese ODA Loan <[https://www2.jica.go.jp/en/evaluation/pdf/2015\\_ID-P157\\_4.pdf](https://www2.jica.go.jp/en/evaluation/pdf/2015_ID-P157_4.pdf)>.

<sup>869</sup> see: Kathleen Roberts, Michael Reiner and Kimberly Gray, 'Water Scarcity in Jaipur, Rajasthan' (Jal Bhagirathi Foundation 2013) 23–33 <[http://www.civil.northwestern.edu/EHE/HTML\\_KAG/Kimweb/files/Jaipur%20Water%20Resources%20\(01.15.14\).pdf](http://www.civil.northwestern.edu/EHE/HTML_KAG/Kimweb/files/Jaipur%20Water%20Resources%20(01.15.14).pdf)> accessed 20 July 2018.

<sup>870</sup> Birkenholtz, 'Full-Cost Recovery: Producing Differentiated Water Collection Practices and Responses to Centralized Water Networks in Jaipur, India' (n 208).

<sup>871</sup> See generally: Narain and Anjal Prakash (n 816).

<sup>872</sup> Rathore and others (n 801).

#### *6.2.4 Climate change, the human right to water and the future of Jaipur*

As stated earlier, rainfall patterns in the river basin catchment around the Bisalpur Dam Reservoir are projected to see less rainfall annually. In recent years, there have been critical issues with Bisalpur not reaching capacity. In these situations, the framework for the allocation of water becomes critical. Currently, in Rajasthan, when there is a shortage of water, the legal framework provides very little guidance as to prioritisation. As outlined earlier, the Rajasthan State Water Policy does prioritise drinking water.<sup>873</sup> However, beyond this, its order of priorities lists livestock drinking water, other domestic commercial and municipal water uses, agricultural power generation, environmental and ecological uses before industrial and non-consumptive uses. As a policy instrument, the Government at any stage can change the allocation priority, without necessarily referring to any other law and legislative priority. Moreover, as it is not binding, neither the executive nor the judiciary necessarily has to be following the allocation priority order. Thus, Cullet and others argue that state water policies can be a starting point for allocation and regulation but remain rudimentary as the central regulatory tool.<sup>874</sup>

Recognition of drinking water as an allocative priority during times of scarcity is a clear recognition of the importance of the HRTW in the policy. However, it also reflects a narrow framing of the right. Recognition of the lives of rural populations and the importance of water for growing food, as well as the importance of maintaining the sustainability of water sources (through recognising environmental and ecological flows), are not reflected in the Rajasthan State Water Policy. The prioritisation of drinking water is also complicated because it reallocates a more significant share of water to urban areas (which also require a larger per capita share of water). Coupled with the de-prioritisation of agricultural water use this means that rural livelihoods are severely affected. This reflects a more significant issue of

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<sup>873</sup> Government of Rajasthan, 'State Water Policy' (n 807) s 1.1.

<sup>874</sup> Philippe Cullet, Lovleen Bhullar and Sujith Koonan, 'Inter-Sectoral Water Allocation and Conflicts' (2015) 1 *Economic and Political Weekly* 61.

framing water along sectoral lines that exacerbates the tension between rural and urban livelihoods.

Water is reduced to being able to be easily divisible across sectoral lines. As the Rajasthan State Water Policy does not refer principles of equity between users, there is an assumption of fairness once water is allocated for these different uses. Thus, a particular fiction underlines the Rajasthan State Water Policy that there is a specific quantity of water in a water body such as the Bisalpur Dam Reservoir that can be easily divided into different sectors. However, as outlined earlier, recognising the intertwined nature of urbanisation (and investment) processes in Jaipur, and the dispossession of water in rural areas, means recognising how decisions at different levels affect the entire hydro-social cycle. For instance, village residents in Chaksu did not receive drinking water until a prolonged protest against the prioritisation of water to urban areas. Furthermore, as farming is the main livelihood option, a major gripe for residents is the lack of water for livelihood activities. As other authors have outlined, this has led to further migration to cities.<sup>875</sup>

#### 6.2.5 *Summary*

The case study above illustrates how multiple contestations and processes give rise to HRTW issues in the context of climate change. First, the hydro-climatic and ecological processes have meant that the Bisalpur Dam Reservoir remains an uncertain source of water. Second, the processes of urbanisation, driven by a suite of policies from the late 1990s to today, have led to increasing demand for water in Jaipur city. Accordingly, flows of water have been reallocated from rural areas to urban areas. Integral to this process has been the cost-recovery policy frameworks that have also seen urban (drinking, domestic and industrial) water needs prioritised. Once again, this framework is driven by state-led policy changes, as well as technical assistance from ADB (linked to the broader international policy direction). While rural drinking water has received some importance, water for basic livelihood needs

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<sup>875</sup> Rathore and others (n 801); Birkenholtz, 'Dispossessing Irrigators' (n 421).

in rural areas has not. Third, the lack of regulation around groundwater, particularly regulation to conserve and preserve groundwater, has meant that groundwater is overexploited in rural areas to sell water to urban areas.

### **6.3 Case Study 2: Western Rajasthan and realising the Right to Water in Arid Environments**

The arid districts of Western Rajasthan have particularly critical hydro-climatic issues due to climatic, geological and social processes. Western Rajasthan is one of the most drought-prone areas in India, averaging drought every 2.5 years.<sup>876</sup> The region receiving an annual rainfall of 330mm with 85% of that rain received in just three months (June to September). Droughts are particularly severe and transform lives, livelihoods and socio-ecological relations, and hence, water is of central importance. Historically, the use of several rainwater conservation methods has been used by people to meet societal needs.<sup>877</sup> However, agriculture has always been, and remains, a particularly difficult task in these areas because of the lack of rain. Since the 1970s and 80s, groundwater exploitation (like in other parts of India) have seen significant shifts in hydro-social relations. Groundwater became a significant driver of change in Western Rajasthan, primarily because of its use in agriculture (as well as drinking and domestic water). Groundwater exploitation increased at a rapid pace. For instance, in the Jodhpur district, the stage of groundwater exploitation rose from 35% in 1991 to 168.1% in 2001 and 215.9% in 2011.<sup>878</sup> As a response to the water woes in Western Rajasthan, the Rajasthan Canal was built to transport water from the state of Punjab to Western Rajasthan. The canal was later renamed the Indira Gandhi Canal and started providing water to the western districts from the 1980s. The development of the canal saw a significant shift in cropping choices, with farmers now opting for

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<sup>876</sup> Narain, Pratap and Amal Kar, 'Drought in Western Rajasthan: Impact, Coping, Mechanism, and Management Strategies' (Central Arid Zone Research Institute 2005) 11.

<sup>877</sup> Amal Kar, 'Agricultural Land Use in Arid Western Rajasthan: Resource Exploitation and Emerging Issues' (2014) 24 *Agropedology* 179.

<sup>878</sup> *ibid* 190.

high water crops in command areas. Moreover, there were also gradual shifts from water conservation systems that had historically been used. Kar states that while there were gains from the agricultural yield for Western Rajasthan, there was also “over-use and mismanagement” that has severely affected the region today.<sup>879</sup>

This case study explores the role of rainwater harvesting and watershed development in rural Western Rajasthan. These projects and interventions provide an essential way to secure the HRTW in the context of increasingly erratic rainfall. Since the 1990s, this has become a significant element of the state’s strategies of rural development and improving access to water in Rajasthan. In recent years, a major scheme, *Mukhyamantri Jal Swavlamban Abhiyan*, was launched for watershed projects and rainwater harvesting.<sup>880</sup> Accordingly, this case study critically examines the role of law and policy towards the HRTW in the context of hydro-climatic change in the region.

### *6.3.1 Strategies to capture (erratic) rainwater in the desert and the popularity of water harvesting and rainwater harvesting for human rights and climate (adaptation) strategies*

Securing rainwater has been an essential task in Rajasthan because of its arid and dry environment. The importance of rainwater is also said to be part of the socio-cultural traditions of Rajasthani society. Mishra has written extensively on the historical rainwater harvesting traditions in rural Rajasthan, arguing that these practises allowed villages to withstand droughts, stave off famines, and make villages ‘self-sufficient’.<sup>881</sup> In recent decades, rainwater harvesting, and more broadly watershed development, has been resurrected by development agencies, non-governmental organisation, and government schemes.

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<sup>879</sup> *ibid* 188.

<sup>880</sup> Watershed Development and Soil Conservation Department, ‘MJSA : Mission and Objective’ (*Mukhya Mantri Jal Swavalamban Abhiyan*, 2015) <<http://mjsa.water.rajasthan.gov.in/mjsa/mission.html>> accessed 29 August 2019.

<sup>881</sup> Anupam Mishra, *The Radiant Raindrops of Rajasthan* (Research Foundation for Science, Technology and Ecology 2001).

Rainwater harvesting refers to the use of small-scale structures that collect water runoff and can also increase groundwater levels, improve drinking water access, or supplement irrigation water needs. There are different forms of rainwater harvesting technologies used across Rajasthan. These technologies exist at the individual household level and the village level. For example, an earthen check dam is built at the village level to increase groundwater, whereas tanks are often built for individual households. While rainwater harvesting technologies are designed to capture rainwater, some technologies (most notably tanks) are often used as a means of storing water that is purchased at a relatively high cost. Rainwater harvesting is an integral part of watershed development programmes that focus on single or clusters of villages as micro-catchment and, working within these boundaries, implement programmes of participatory soil conservation, rainwater harvesting, aquifer recharge and, more broadly, ‘community resource management’.

Watershed development and rainwater harvesting are both water conservation strategies used by the state and non-governmental actors. Both are seen as essential strategies for water security (and securing the HRTW) as well as climate change adaptation. For example, Singh argues that utilising the rainwater in Rajasthan through rainwater harvesting has “helped devise an integrated adaptive approach that has enabled the realisation of the right [to water] through generations in the harshest of climatic onslaughts.”<sup>882</sup> She argues strongly in favour of expanding rainwater harvesting strategies, which she sees as examples of “bottom-up approaches which local communities can develop, control, and manage with ease”.<sup>883</sup> Furthermore, government rationales around watersheds and rainwater harvesting are usually around

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<sup>882</sup> Nandita Singh, ‘Climate Change and Human Right to Water: Problems and Prospects’ in Nandita Singh (ed), *The Human Right to Water* (Springer, Cham 2016) 100.

<sup>883</sup> *ibid* 102.



the improvement of drinking water, livelihood and “climate-proofing” or “drought-proofing” a state.<sup>884</sup>

Watershed development activities and rainwater harvesting also mesh into the broader, global discourses and practices around climate change adaptation and sustainable development. India’s first Nationally Determined Contribution (“NDC”) under the Paris Agreement on Climate Change also includes rainwater harvesting and watershed development as part of its general adaptation strategies on climate change.<sup>885</sup> The NDC’s of several other countries in the Global South, such as Pakistan and Ethiopia also include similar activities.<sup>886</sup> In India, for instance, the international Adaptation Fund set up under the Kyoto Protocol is currently providing USD \$1.3 million for a project on watershed development in Rajasthan and Tamil Nadu.<sup>887</sup> The Green Climate Fund has also approved projects in different parts of the Global South that are based on watershed development.<sup>888</sup>

Similarly, policymakers have linked watershed activities to the Sustainable Development Goals (“SDGs”). The UN Food and Agricultural Organisation have identified that watershed development projects will be critical to combating climate change and its impacts (SDG 13), ensuring sustainable water management (SDG 6), protecting and restoring terrestrial ecosystems (SDG 15), ending poverty (SDG 1) and

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<sup>884</sup> Ministry of Water Resources, Rajasthan, ‘Rajasthan Makes Rapid Strides in Water Conservation’ (undated) 2 <<http://mowr.gov.in/sites/default/files/Best-Practices-MJSA-Rajasthan.pdf>> accessed 1 August 2019.

<sup>885</sup> Ministry of Environment Forests and Climate Change (n 573) 21.

<sup>886</sup> Government of Pakistan, ‘Pakistan’s First Nationally Determined Contribution’ (2015) 15 <<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Pakistan%20First/Pak-INDC.pdf>> accessed 24 August 2018; Government of Ethiopia, ‘Intended Nationally Determined Contribution (INDC) of Federal Democratic Republic of Ethiopia’ (2015) 5 <<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ethiopia%20First/INDC-Ethiopia-100615.pdf>> accessed 24 August 2018.

<sup>887</sup> Adaptation Fund (n 371).

<sup>888</sup> See for example: Green Climate Fund, ‘Project FP087: Building Livelihood Resilience to Climate Change in the Upper Basins of Guatemala’s Highlands’ (*GCF Projects + Programmes*, 29 August 2019) <<https://www.greenclimate.fund/projects/fp087>>; Green Climate Fund, ‘Project FP112: Addressing Climate Vulnerability in the Water Sector (ACWA) in the Marshall Islands’ (*GCF Projects + Programmes*, 29 August 2019) <<https://www.greenclimate.fund/projects/fp112>>.

achieving food security (SDG 2).<sup>889</sup> The SDGs are becoming the primary reference for national development policies, plans and programmes, and they will shape the future of international development cooperation.<sup>890</sup> Accordingly, watershed development and rainwater harvesting will have an increasingly critical role in development project activities in the coming years, in India and other countries in the Global South.

In the Indian context, water conservation has explicitly gained world-wide prominence, mainly through the work of Tarun Bharath Sangh, an organisation based in Rajasthan, and its promotion of ‘traditional’ rainwater harvesting techniques.<sup>891</sup> Rajendra Singh, the Chairman of Tarun Bharath Sangh, won the Stockholm Water Prize, sometimes termed the ‘Nobel Prize for water’.<sup>892</sup> Such recognition brings further international and national interest. Numerous NGOs are now operating in the state, building tanks, wells, ponds, and anicuts. MJSA mentioned earlier, is the state government’s flagship scheme. Under MJSA, nearly 100,000 water harvesting structures were constructed across more than 3,000 villages.<sup>893</sup> Apart from MJSA, the state has also included rainwater harvesting and watershed development in the State Water Policy<sup>894</sup> and State Action Plan on Climate Change.<sup>895</sup>

### 6.3.2 *Guidelines for watershed development*

While rainwater harvesting (and watershed development more generally) provides an important strategy in the realisation of the HRTW, there are aspects of

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<sup>889</sup> Food and Agriculture Organization of the United Nations, ‘Watershed Management in Action: Lessons Learned from FAO Field Projects’ (FAO 2017).

<sup>890</sup> *ibid* 2.

<sup>891</sup> Harrabin (n 570).

<sup>892</sup> *ibid*.

<sup>893</sup> Sushmita Sengupta, ‘Rajasthan’s Fight against Drought Is Showing Positive Results’ [2017] *Down to Earth* <<https://www.downtoearth.org.in/news/water/dry-no-more-57481>> accessed 29 August 2018.

<sup>894</sup> Government of Rajasthan, ‘State Water Policy’ (n 807) s 5.

<sup>895</sup> Government of Rajasthan, ‘Rajasthan State Action Plan on Climate Change’ (n 136) s 6.6.

such projects and programmes that require scrutiny from a hydro-climatic justice perspective.

Despite the increasing importance of watershed development in rural Rajasthan, there is a lack of specific legislation to govern current watershed interventions. The Soil and Water Conservation Act, 1964 is the only specific legislation, which reflects some of the early schemes that were carried out by the State government. However, these were scientific and technological interventions, significantly different from the more holistic purpose of watershed development activity today. In other words, the broader remit of socio-ecological relations, role of communities, individuals, and links with human development are generally missing.

In the absence of legislation, there are guidelines both at the Union and state level. The Centre has published a set of Common Guidelines for Watershed Development Projects (“Common Guidelines”) in 2008 (revised in 2011). The Common Guidelines provide a framework for state governments to tailor their approaches to implementing watershed development programmes while trying to bring some coherence and unification to approaches across the country. The Common Guidelines outline some basic guiding principles for watershed development, including (amongst others): equity and gender sensitivity, decentralisation, the centralisation of community participation and the role of technology.

The Common Guidelines provides some coherence and coordination in a state like Rajasthan, where watershed projects are widespread. The MJSA was launched by the state government to co-ordinate and drive all its watershed activities that are carried out by different departments and implementing agencies. Funding and targets mean that there is currently an ambitious drive to make villages ‘self-sufficient’ through watershed development.

### *6.3.3 Discourses and practices: ‘traditionalism’, community and equity*

The socio-cultural and developmental discourses and practices around watershed development and rainwater harvesting are important in understanding the framework and operationalisation of such projects. This section analyses these

discourses and practices by NGOs and developmental agencies, as such discourses and practices have had an important part in inspiring the design and objectives of government watershed schemes and associated policies and guidelines.<sup>896</sup>

Since the late 1980s, both in India and internationally, there has been a shift in development discourse from large-scale projects, such as irrigation canals and dams, to ‘participatory natural resource management’. Small-scale interventions based at the local level are often seen as the preferred developmental solution. This development shifts away from the centralised natural resource governance that characterised the post-independence period. Relatedly, there is at the same time a narrative of the decline of traditional water harvesting based on indigenous knowledge and technology emerged.<sup>897</sup> Agarwal, for instance, appeals to the “ancient traditions of our ancestors” that would ensure that India can be completely drought-proof and every village can meet its own water needs.<sup>898</sup>

Nandita Singh points to the benefits of ‘traditional’ and ‘indigenous’ practices over ‘modern’ systems in realising the HRTW in the context of climate change.<sup>899</sup> She states that:

“In recent decades, local communities have tended to give up and forget their traditional water supply systems, increasingly depending upon the new governmental interventions. The traditional wisdom in Rajasthan aimed at prioritizing water supplies for drinking and personal uses in a water-stressed area, based on the principle of “catching the rain where it falls.” [...]Neglect of this indigenous knowledge system and associated practices have led the local communities to deprived water access, with further negative

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<sup>896</sup> Priya Sangameswaran, ‘Community Formation, “Ideal” Villages and Watershed Development in Western India’ (2008) 44 *The Journal of Development Studies* 384, 391.

<sup>897</sup> This reflects a long standing debate in the Indian context about community and the role of village self sufficiency and resource management since the end of colonialism. One school of thought has been to favour village self sufficiency, following the Gandhian vision of ‘village republics’. Others have been critical of rural life and village as sites of ‘backwardness’, highly caste centred, and illiberal. Until 1991, one can say the latter vision took precedence and was reflected in centralized policies of the state. See: *ibid* 387.

<sup>898</sup> Agarwal (n 574).

<sup>899</sup> Singh, ‘Climate Change and Human Right to Water’ (n 882).

consequences even for the modern water supply alternatives as well as livelihood options in practice.”<sup>900</sup>

These appeals are examples of ‘new traditionalist’ discourse in Indian environmentalism. They centre upon a specific critique of colonialism and development that is accompanied by a specific reading of Indian ‘tradition’. As Sinha and others argue, “within this discourse, traditional or pre-colonial Indian society was marked by harmonious social relationships, ecologically sensitive resource use practices, and was generally far less burdened by the gender, economic and environmental exploitation which concern contemporary observers”.<sup>901</sup> Thus, organisations working in rainwater harvesting projects also appeal to reviving such ‘traditionalism’, going back to a time when hydro-social relations were implicitly seen as better.<sup>902</sup> For example, during fieldwork for this research, the Executive Director of a prominent water harvesting NGO in Jodhpur described their work as trying to revive the “village fabric” and “cohesive village units” that worked well before the government interventions in the water sector during the colonial and post-colonial era.<sup>903</sup> Village self-sufficiency is also a fundamental goal in watershed development programmes. Hence, many organisations emphasise an ethos of ‘volunteerism’ (and capital contributions) by villagers that make the projects possible.

On the other hand, Gupta highlights that historically in Rajasthan, there was a role for both small and large-scale water infrastructure.<sup>904</sup> He cites several instances of large water reservoirs or dams in feudal times that brought drought and famine relief, including the construction of Lake Jai Samand which at the time of building

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<sup>900</sup> *ibid* 92–93.

<sup>901</sup> Subir Sinha, Shubhra Gururani and Brian Greenberg, ‘The “New Traditionalist” Discourse of Indian Environmentalism’ (1997) 24 *Journal of Peasant Studies* 65, 67.

<sup>902</sup> Saurabh Gupta, ‘Demystifying “Tradition”: The Politics of Rainwater Harvesting in Rural Rajasthan, India.’ (2011) 4 *Water Alternatives* 347; Sangameswaran, ‘Community Formation, “Ideal” Villages and Watershed Development in Western India’ (n 896).

<sup>903</sup> Interview with Executive Director, Jal Bagharti Foundation (Jaipur, Rajasthan 20 June 2017).

<sup>904</sup> Gupta, ‘Demystifying “Tradition”: The Politics of Rainwater Harvesting in Rural Rajasthan, India.’ (n 902).

was the largest artificial lake in the world.<sup>905</sup> Accordingly, the correlation between ‘traditional’ and small-scale is not quite an accurate one.

Caste is an integral power relation that perpetuates through both discourses and practises. For example, while Mishra’s work, mentioned earlier, was important in outlining technologies used in Rajasthan historically, it provides very little analysis of caste practises. Communal rainwater harvesting technologies observed in the Jodhpur district during fieldwork did have a separation by caste. Sharma captures this trend in responding to the romanticised environmentalism of traditional watershed and rainwater harvesting discourses in India:

“...in spite of environmentalists’ immense contribution, they have often closed their eyes to the caste of water, and its linkages to touch, purity–pollution, the holy–unholy, and the sacred–profane. It is rather striking that the growing body of environmental scholarship on water, while discussing matters of culture, conservation, community, people, tradition, distribution, market, society, and economy, has often made no mention of Dalits. Environmental literature on water has tended to aggregate, rather than disaggregate, Dalit entanglements with water.”<sup>906</sup>

#### *6.3.4 Participation and the absence of recognition*

A key element in watershed development projects has been an emphasis on participation. Since the mid-1990s, participatory approaches have been entrenched into watershed development activities in India. A guiding principle under the Common Guidelines is the “centrality of community participation”, that is defined as “involvement of primary stakeholders” at the “centre of planning, budget, implementation and management of watershed projects”.<sup>907</sup> There is also a preference for participation and decentralisation through the democratically accountable village governance structures.<sup>908</sup> However, there is no strict requirement for this.<sup>909</sup> The all-

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<sup>905</sup> *ibid* 352.

<sup>906</sup> Sharma (n 24) 168.

<sup>907</sup> National Rainfed Area Authority, Planning Commission of India (n 575) s 2.

<sup>908</sup> *ibid*.

encompassing definition under the Common Guidelines makes it easy for almost any project to meet the requirements of participation.<sup>910</sup>

Though participation is an integral element of watershed development activity, it is mostly a part of the implementation and delivery of projects. The involvement of local communities under the MSJA is in creating an ‘action plan’ for implementing the project, which may include aspects of participation in the design of appropriate measures, budgeting costs (and cost-recovery), and establishing time frames for project delivery.<sup>911</sup> In this context, participatory watershed projects have been criticised for becoming a ‘box-ticking’ exercise, and where the actual project is run by a small group of actors.<sup>912</sup> While participation and decentralisation are in the Common Guidelines and the MSJA objectives, in reality, commentators have noted how watershed schemes are often top-down technical measures. As Gupta puts it, watershed projects thus become something that is “delivered to” the public, by the state (and NGOs), rather than produced by the communities in partnership with the state.<sup>913</sup>

As the previous section mentioned, gender and caste dimensions are central to watershed development. However, while gender is mentioned in the Common Guidelines, caste is mostly left out. The Common Guidelines include a principle that there should be a facilitation of “equity processes” through enhancing livelihoods for the poor, improving access to benefits of watershed development activities to the poor and especially women, enhancing the role of women in decision-making and

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<sup>909</sup> The wording falls short of requiring such an approach, as it states that “project management would improve with decentralisation...” and that “community organisation *may be* closely associated with an accountable to Gram Sabhas in project activities”.

<sup>910</sup> Singh, ‘Is Participatory Watershed Development Building Local Adaptive Capacity? Findings from a Case Study in Rajasthan, India’ (n 164) 44.

<sup>911</sup> Interview with Department Scientist, Integrated Watershed Management Programme, Rajasthan Watershed Department (Jodhpur, 26 June 2017); Watershed Development and Soil Conservation Department (n 880).

<sup>912</sup> Baviskar (n 164).

<sup>913</sup> Gupta, *Politics of Water Conservation Delivering Development in Rural Rajasthan, India* (n 164) 94–95.

representation, and ensuring access to usufruct rights from common property resources for the poor.<sup>914</sup> Beyond this, gender and caste are not well integrated into the Common Guidelines or the MJSA. There is also no recognition of rights, including the HRTW or the environment. In other words, the extent to which these dimensions are integrated into watershed projects becomes mostly a function of motivated individuals, project implementing agencies, rather than a requirement through law, policy or as right.

On the ground, this has an impact on who benefits from watershed projects. The purported benefits of watershed projects, such as improving access to water, providing livelihood options, are realised if there is both participation and equitable sharing of benefits of watershed projects. Chandni Singh finds in her work on watersheds in Rajasthan that ‘participants’ in watershed projects face social and cognitive barriers, such as not being able to understand the information provided or more general gender or caste-based social structures within watershed development communities.<sup>915</sup> On the other hand, a notable achievement of many of the watershed development programmes in Rajasthan have been to, at a minimum, bring different caste groups to sit together and participate in scheme, albeit, to varying degrees of success.<sup>916</sup> The two NGOs interviewed in this research had different approaches to tackle caste and gender, with one far ‘softer’ than the other one. With the Common Guidelines providing a lack of specific guidance on the issue, this leaves projects dependant on a significant level of discretion depending on who the Project Implementing Agency is, as well as the individual actors.

Where participatory approaches do not engage with the local socio-ecological and socio-political relations, they end up as a purely technocratic exercise without a

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<sup>914</sup> National Rainfed Area Authority, Planning Commission of India (n 575) s 2.

<sup>915</sup> Singh, ‘Is Participatory Watershed Development Building Local Adaptive Capacity? Findings from a Case Study in Rajasthan, India’ (n 164).

<sup>916</sup> Gupta, *Politics of Water Conservation Delivering Development in Rural Rajasthan, India* (n 164) 110. However, Gupta overall concludes that participation is “nominal” see Gupta (n 784) 160-161.



transformation of the relations in which people access water (or other basic needs).<sup>917</sup> In Rajasthan, the MJSA is an ambitious programme, measured on metrics and targets around the number of projects implemented and funds raised. While the urgency and scale of the programme are important, without adequate guidelines and policies on gender and caste dimensions (and their intersection), these important processes in realising the HRTW can be overlooked.

### *6.3.5 Who benefits from watershed projects: inequities in exploiting the commons*

Another important aspect is how villages are selected as well as who can access the benefits of the water sources, including groundwater recharge, that a watershed project can bring. In selecting watershed development projects, the Common Guidelines outline several criteria in selecting villages. These include drinking water scarcity, the proportion of scheduled castes/tribes in the village, and the willingness of the community to make voluntary contributions, as well as enforce equitable social regulations.<sup>918</sup> The MJSA is more specific, providing weighted criteria, with acuteness of drinking water forming nearly 50% of the weighting on selection of projects.<sup>919</sup> The proportion of SC/ST is given the second most weighting. Accordingly, both an effort to improve drinking water and to recognise marginalised communities have precedence in watershed projects. Such recognition is essential from a HRTW and hydro-climatic justice perspective.

While drinking water is an essential issue in the selection of villages for watershed development projects, this does not flow into measuring whether drinking water needs are actually being met. Whether they are met is also not a factor in assessing the implementation of watershed development projects. This is a significant missing element, as the ‘success’ of any watershed project should be measured by

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<sup>917</sup> O'Reilly and Dhanju (n 208) 627.

<sup>918</sup> Singh, ‘Is Participatory Watershed Development Building Local Adaptive Capacity? Findings from a Case Study in Rajasthan, India’ (n 164) 45.

<sup>919</sup> Watershed Development and Soil Conservation Department (n 880).

how they improve the drinking water situation for all villagers, as well as providing water for livelihood and ecosystems needs, rather than only scarcity at the outset. The increase in groundwater from watershed projects is important in the context of climate change, as groundwater is a vital buffer resource during droughts. However, as groundwater laws can benefit landowners who have the right to exploit groundwater mostly unabated, the benefits of projects that increase groundwater can be disproportionately favoured to wealthier and higher caste communities.

Gupta, for instance, finds that the biggest beneficiaries are relatively well-off farmers, who have the resources to spend extracting water, whereas small and marginal farmers could not gain much from the groundwater recharge.<sup>920</sup> This has an important implication on the ‘drought-proofing’ and climate change adaptation claims of many projects. For instance, when there is an increased level of groundwater, if there is not adequate attention paid to extraction practices, then all the extra water stored by harvesting structures can be quickly used up.<sup>921</sup> During fieldwork in Jodhpur, it was observed that many of the watershed projects did increase the groundwater charge, or provide an additional community pond. However, these sources were also being exploited by private water tankers, who sell this water at a profit. Those who benefit most from this, apart from the private tanker industry, are (wealthier, higher caste) landowners. Similarly, although not observed in the areas visited in Jodhpur, some commentators have noted that watershed activities in other parts of Rajasthan have primarily benefited agricultural water use for landowners.<sup>922</sup>

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<sup>920</sup> Gupta, ‘Demystifying “Tradition”: The Politics of Rainwater Harvesting in Rural Rajasthan, India.’ (n 902) 360–361.

<sup>921</sup> Anand Sharma, ‘Does Water Harvesting Help in Water-Scarce Regions? A Case Study of Two Villages in Alwar, Rajasthan’ (International Water Management Institute 2002) H029649 <[http://www.iwmi.cgiar.org/iwmi-tata\\_html/PartnersMeet/pdf/001-Abhi.pdf](http://www.iwmi.cgiar.org/iwmi-tata_html/PartnersMeet/pdf/001-Abhi.pdf)>; Dinesh M Kumar and others, ‘Rainwater Harvesting in India: Some Critical Issues for Basin Planning and Research’ (2006) 6 Land Use and Water Resources Research 1.

<sup>922</sup> Zareen Pervez Bharucha, David Smith and Jules Pretty, ‘All Paths Lead to Rain: Explaining Why Watershed Development in India Does Not Alleviate the Experience of Water Scarcity’ (2014) 50 The Journal of Development Studies 1209, 1221; Dolly Daftary, ‘Watershed Development and Neoliberalism in India’s Drylands’ (2014) 26 Journal of International Development 999.

Accordingly, the improvements to groundwater levels through watershed development can result in injustices between who benefits from watershed projects. As more extreme weather and meteorological droughts intensify due to climate change, the injustices can multiply. The Common Guidelines do not provide for watershed development projects to improve access to basic water ‘for all’ and/or the prevention of overexploitation. Ensuring this is a mandatory requirement and linking the progression from one phase to the next in the project, on such criteria, would have been an active link to the implementation of the right to water and the right to environment through watersheds.

## **6.4 Themes and Summary**

Several common themes can be drawn from the two case studies above, that also relate to some of the findings in Chapter 5.

First, the realisation of the HRTW is unequal, driven by economic, political, social and ecological processes. The first case study illustrated how the reallocation of water from rural to urban areas impacted rural communities negatively, particularly the landless and the poor. The reallocation was driven by economic investment that increased demand, as well as climatic and ecological factors that increased water needs in cities. The realisation of the HRTW has focused on drinking and domestic water. For rural communities, the focus has been on providing water stand posts with piped water supply. However, as pointed out, its implementation is stratified. For example, the villages in Chaksu did not receive water from the Bisalpur pipeline till 2015, despite a total ban on anicuts to capture water within the neighbouring areas and villagers visually observing pipes going into the city. The injustices produced protests, including violence, and tampering with the pipelines that go into the city.<sup>923</sup> In the second case study, the roll-out of watershed projects in Western Rajasthan demonstrated the gaps in the guidelines and policies around rainwater harvesting and

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<sup>923</sup> Bhaduri (n 35).

watershed projects. While the construction of these technologies is essential, there are critical social dimensions and power structures that can be overlooked.

Second, both case studies illustrate inequality and injustice in governing the water commons. In the Jaipur District, several policies and judicial decisions resulted in reallocating water to urban areas. Groundwater over-exploitation was an issue in both districts, due to a lack of governance and legislation. Though the rejuvenation of the water bodies, through watershed development activities, in particular, tries to counter the degradation of water tables, however issues of caste, poverty, and participation remain because of the inadequate legal framework. Ultimately, both case studies illustrate the importance a rights-based approach to governing the entire water commons.

Third, the case studies show both the gaps and shortfalls of participation. Chapter Three outlined the importance of participation to the HRTW. It was argued that participatory rights are recognised under both international and domestic law and are important in recognising the contestations around hydro-climatic relations. However, in Jaipur, communities were dispossessed of water without adequate recognition or consultation of their views. Instead, as outlined, the strategy of accumulation by dispossession takes place through state-led means of water allocation, as well as the lack of groundwater laws. For individuals and communities in these spaces, their main recourse of participation is through schemes around drinking water, or, technically, through their elected politicians.

Fourth, the case studies demonstrate the role of international actors, policies and norms. Several international actors are influential in decisions around the HRTW, for example, the ADB and Japan International Cooperation Agency's role in the Bisalpur to Jaipur pipeline and associated policy reforms. NGOs have an important role in both case studies too. As the second case study illustrated, the role of the project implementing agency has been critical in the realisation of the human right to water in watershed projects. With the increasing importance of these activities, under the influence of both national and international norms and funding around climate change adaptation, the Paris Agreement and the SDGs, the role of international and domestic law comes closer together. However, it is not necessarily going to be

through a traditional linear relationship between international legal treaties and resolutions translating into domestic law reforms. Instead, norms and policies from a more diverse arena of transnational policymaking (from the traditional UN-led treaties, like the Paris Agreement, to the policies of private sector actors, regional banks like the ADB) will continue to have an influence over these activities.<sup>924</sup>

Finally, this chapter has also illustrated the importance of discourses on hydro-climatic justice. One important theme is the discourse of scarcity. Political ecologists have illustrated how discourses of scarcity can be used to facilitate specific policy fixes.<sup>925</sup> In examining water relations in Western India, Mehta argues that the ‘naturalness’ of water scarcity has been used to drive infrastructural responses, such as dams, as an alleviation mechanism, rather than the underlying injustices of the political economy.<sup>926</sup> The reallocation of water from rural to urban areas demonstrates this. Urban ‘water scarcity’ is often used as a way to dispossess rural areas of water. Thus, even if done to further urban drinking water needs (and by correlation the HRTW), the broader effects on hydro-social relations across the region are not considered. As Molle and Berkoff note, the notion of the “thirsty city” that is often presented, is a city that has mushroomed beyond its local water sources, with highly stratified water use.<sup>927</sup> With a lack of democratic or legal structures that regulate the use of water between users, this allows the dispossession of water from weaker sections of society through infrastructure, under the guise of ‘scarcity’ and ‘need’.<sup>928</sup>

Likewise, discourses of scarcity can also be seen in watershed projects in Rajasthan. The urgency of ‘drought-proofing’ and ‘climate-proofing’ Rajasthan in

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<sup>924</sup> This relates to the emerging field of transnational environmental law, where many of these themes are studied. See: Veerle Heyvaert and Thijs Etty, ‘Introducing Transnational Environmental Law’ (2012) 1 *Transnational Environmental Law* 1.

<sup>925</sup> Erik Swyngedouw, ‘Technonatural Revolutions: The Scalar Politics of Franco’s Hydro-Social Dream for Spain, 1939-1975’ (2007) 32 *Transactions of the Institute of British Geographers* 9.

<sup>926</sup> Lyla Mehta, *The Politics and Poetics of Water: Naturalising Scarcity in Western India* (Orient Longman 2005).

<sup>927</sup> Molle and Berkoff (n 34) 9.

<sup>928</sup> See for example: Kaika (n 179).

both national and international discourses, has pushed the government towards strict targets of watershed development. However, as discussed earlier, this is mainly measured in quantitative terms. Ultimately, discourses of scarcity are an important mediator in the realisation of the HRTW, as they are used by different actors (such as the state, or capital, or NGOs) to advance specific policies (such as investment policies into pipelines) that can have differentiated impacts.

## **CHAPTER 7. Broadening the Human Right to Water: Envisioning Three Approaches that further Hydro-Climatic Justice**

The challenges identified in the previous chapters present profound issues for the HRTW in the face of hydro-climatic change. This chapter reflects on the case studies in Chapter Five and Six, as well as the legal and conceptual analysis in Chapter Two and Three. These challenges for the HRTW are both the nature of the right and the laws and policies that underlie the right. The question then becomes what the future of the HRTW can be. Accordingly, this chapter outlines ways to broaden the HRTW, informed by the understanding of hydro-climatic justice outlined in Chapter Two and the case studies in Chapters Five and Six. Grante, Kotze and Morrow argue that, in the context of the Anthropocene, we need to “reclaim the law, accepting that legal frameworks are man-made and therefore can be reimagined and redirected to address the vulnerability of both humans and the biosphere.”<sup>929</sup> The UN Special Rapporteur on extreme poverty and human rights advocates the need for human rights to contend with the “deep social and economic transformation, which

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<sup>929</sup> Grant, Kotzé and Morrow (n 101) 957.

almost all observers agree is urgent if climate catastrophe is to be averted”.<sup>930</sup> This chapter takes these cues to reflect on how the HRTW can be transformed.

At the same time, the suggestions put forward in this chapter draw on existing concepts, principles, laws and policies. An assumption through this thesis is that the realisation of the HRTW is important and relevant. While human rights have many critiques, as Chapter 2 argued, they also have an enduring appeal and continue to have importance in socio-legal frameworks. The fact that the HRTW is well understood and diffused through society, despite its many issues and criticisms, means there are good reasons to believe it provides mechanisms for furthering hydro-climatic justice. O’Connell argues that human rights provide an important (if at times inadequate) tool for social change today.<sup>931</sup> Rather than starting afresh, with analytically neat philosophical concepts, reforming an existing state of affairs is how change happens. O’Connell argues, drawing on Gramsci, that there is little to be gained from “introducing from scratch a scientific form of thought into everyone’s individual life”, but rather to “renovate and make ‘critical’ an already existing activity”.<sup>932</sup> That ‘activity’, in relation to this chapter and thesis, is the HRTW, as well as other principles, laws and policies that exist that could be renovated and radicalised.

This chapter has four parts that propose potential ways forward for the HRTW. First, that multiple uses of water should be recognised under the HRTW. This includes water for subsistence livelihood activities and water for ecological needs. Second, it is argued that the ideas that underpin the ‘right to the city’ movement can be drawn upon to reconceptualise the HRTW as a right to “transform the hydro social environments”.<sup>933</sup> While the right to the city is an idea largely discussed by urban geographers and social activists, its conceptualisation specifically as a right to

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<sup>930</sup> UN Human Rights Council, ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (n 87) 5.

<sup>931</sup> Paul O’Connell, ‘On the Human Rights Question’ (2018) 40 Human Rights Quarterly 962.

<sup>932</sup> Antonio Gramsci, *Selections from the Prison Notebooks* (International Publishers 1971) 330–331.

<sup>933</sup> Jamie Linton, ‘The Human Right to What? Water, Rights, Humans and the Relation of Things’ in Alex Loftus and Farhana Sultana (eds), *The Right to Water: Politics, Governance and Social Struggles* (Earthscan 2012).



produce new ‘spaces’, can be drawn upon for the HRTW to be framed to produce hydro-climatic justice. Thus, it provides a way to approach the HRTW in the context of hydro-climatic justice. Third, it is argued that HRTW needs to incorporate a solidarity rights dimensions in its approach. Solidarity rights provide a collective approach, recognising the inter-connected nature of how hydro-climatic injustice are produced. Finally, drawing on the relevant elements from the first three sections, the fourth section argues that the HRTW requires a more direct and expanded form of participation and as well as legal principles that protect the hydro-climatic commons. The discussion in this section draws upon existing legal principles (both in India and globally) that could be advanced in advocating ways forward. Ultimately, such an approach moves the human right to water, from a right to particular quantity and quality of water to a right to transform hydro-social environment and produce hydro-climatic justice.

## **7.1 Recognising multiple water uses**

Water is intrinsically linked to multiple other human rights and basic livelihood activities critical to human development, dignity and capabilities. As outlined in earlier chapters, these linkages are critical in the context of climate change. In West Bengal, communities living in the lower Damodar River Valley experienced water stress because of polluted water, flooding, and acute water shortages that impact not just drinking, domestic and sanitation water needs but also livelihood options. Similarly, communities in Western Rajasthan living in arid areas had a critical need for water to grow food and sustain basic livelihoods (section 6.3 above) . Watershed projects, with their focus on multiple water uses, have become an essential tool in meeting the water needs, particularly in the context of erratic rainfall and drought. Chapter 3 argued that that broader perspective that included subsistence livelihood and ecological dimensions (or ‘uses’) related to the human right to water were justified in the context of hydro-climatic justice (section 3.3.2 above). These arguments are not repeated here, except so far as to emphasise how these injustices materialise in the earlier case studies and what a broader perspective could entail. To be clear, while the term ‘livelihoods’ is used here, the discussion here is limited to subsistence livelihood water uses, rather than economic livelihoods in general.

### *7.1.1 Human Right to Water and Livelihood Water Uses: poverty and adaptation*

In the context of climate change, the HRTW must incorporate an approach that includes recognising basic livelihood water uses. Subsistence farming, for example, is critical to livelihoods in India and the rural Global South. About 2 billion people in the Global South live in about 475 million small farm households, working on land plots smaller than 2 hectares.<sup>934</sup> The link between livelihoods, poverty and climate change adaptation has been made clear in recent years.<sup>935</sup> Strengthening livelihoods is an essential tool for climate adaptation. For example, the Paris Agreement expressly states the link between livelihood and adaptation and loss and damage.<sup>936</sup> General Comment 15 also makes the link between water and subsistence livelihoods, although in the context of the human right to food.

Currently, recognition of water for livelihoods is a feature of water policy in India to a limited extent. Rural drinking water schemes often provide for water for livestock in arid environments. Hence, for example, water was provided for livestock under the drinking water scheme installed in the villages in Chaksu, discussed in the case study of the Jaipur district in Chapter 6 (section 6.2 above). Interestingly, this requirement is not in the current National Rural Drinking Water Programme Guidelines.<sup>937</sup> Earlier, guidelines issued by the central government till 2009, included a requirement for 30 litres per capita per day for animals in arid desert environments.<sup>938</sup> But now there is no specific requirement for water for livestock or

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<sup>934</sup> George Rapsomanikis, 'The Economic Lives of Smallholder Farmers: An Analysis Based on Household Data from Nine Countries' (Food and Agricultural Organisation of the United Nations 2015) 1 <<http://www.fao.org/3/a-i5251e.pdf>> accessed 20 August 2019.

<sup>935</sup> See for example: Lennart M Olsson and others, 'Livelihoods and Poverty' in Christopher B Field, Vicente R Barros and Intergovernmental Panel on Climate Change (eds), *Climate change 2014: impacts, adaptation, and vulnerability: Working Group II contribution to the fifth assessment report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014).

<sup>936</sup> UNFCCC (n 97) article 7 and 8.

<sup>937</sup> Ministry for Drinking Water & Sanitation (n 559).

<sup>938</sup> Ministry of Rural Development, 'Accelerated Rural Water Supply Programme Guidelines' (1997) section 2.2.

subsistence livelihoods. Instead, it included a more general principle that “the importance of providing livelihood supply to all and its vital linkage with the health of the people must be recognised”.<sup>939</sup> Without a specific requirement on how such a principle can be met, this represents a step backwards in the realisation of the HRTW. As it stands, in interviews with the government offices in Jaipur, it was learned that engineers were generally working under their own departmental guidelines.<sup>940</sup> Accordingly, while in practice the scheme in Chaksu included a livelihood dimension, it was not borne from a specific requirement under the current policy or legislation.

Beyond the need for water for livestock in desert regions, a recognition of broad livelihood perspective that considers water for other productive uses, such as subsistence farming is necessary. The case study in the Sundarbans, in Chapter 5 demonstrated the importance of ponds to livelihoods in the Sundarbans. Rainwater harvesting structures such as ponds, tanks, and other infrastructure also play an essential role in the livelihoods in arid areas such as Rajasthan too. Different socio-ecological landscapes will have different subsistence livelihood activities. Hence, there is a limit to prescribing exact requirements (in terms of litres of water per day) or specify livelihood activities in every part of the country. However, a basis for these decisions could be from emerging principles of climate change adaptation law<sup>941</sup> (such as flexibility, participation, equity, and coordination) and the normative claims of hydro-climatic justice outlined in Chapter Two (distributional equity, procedural fairness, recognition and corrective justice).

First, a ‘bottom-up approach’ to livelihood use identification would be critical. Under international climate change law, a bottom-up approach to adaptation planning is used, where countries self-identify adaptation needs under the international climate regime. Similarly, states should also implement participatory and transparent

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<sup>939</sup> Ministry for Drinking Water & Sanitation (n 559) 2.

<sup>940</sup> Interview with Mukesh Goyal, PHED Executive Engineer, on 21 June 2017 (Jaipur, Rajasthan).

<sup>941</sup> See for example: Robin Kundis Craig, “‘Stationary Is Dead’ - Long Live Transformation: Five Principles for Climate Change Adaptation Law’ (2010) 34 Harvard Environmental Law Review 9; JM Verschuuren, ‘Climate Change Adaptation and Water Law’ in JM Verschuuren (ed), *Research Handbook on Climate Change Adaptation Law* (Edward Elgar 2013); Keessen and Rijswijk (n 430).

approaches to climate change adaptation under the Paris Agreement.<sup>942</sup> Decentralised and participatory approaches are essential in identifying livelihood water uses, notwithstanding the criticisms of participation identified in earlier chapters. One important aspect here, emphasised in earlier chapters, is that identification of livelihood water uses must consider gender, caste and poverty dimensions. For example, the views of the landless and their need for water are particularly critical in India, where groundwater rights have been tied to land ownership for over a century.<sup>943</sup> Second, water law scholarship has identified several critical principles to climate change adaptation for the water sector.<sup>944</sup> These principles could be useful in how the HRTW incorporating a multiple use perspective. One of the principles identified is greater cross-sectoral planning.<sup>945</sup> A key theme from the case studies in earlier chapters is the lack of coordination and coherence in the governance framework for the HRTW. Such a requirement would also be integral in identifying and operationalising a livelihood perspective, as livelihood water uses at one scale may cumulatively create issues on a larger scale. Finally, approaches that integrate adaptation principles of participation, transparency and co-ordination could be used to identify the type of water and infrastructure required for different livelihood uses. For example, the extent of aquaculture in the Sundarbans, and its use of water can represent a ‘mal-adaptation’, as discussed in Chapter 5, despite serving an vital livelihood activity.

### *7.1.2 Human Right to Water and Ecological ‘Uses’: conservation and preservation of water*

Chapter 3 argued that recognising ecological ‘use’ of water was an essential element for the HRTW to incorporate in the context of hydro-climatic (in)justice.

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<sup>942</sup> UNFCCC (n 97) Art. 7, paragraph 5.

<sup>943</sup> Cullet, Bhullar and Koonan (n 152) 650.

<sup>944</sup> See for example: Craig (n 941); Verschuuren (n 941); Keessen and Rijswick (n 430).

<sup>945</sup> Moritz Gies, Juliane Albrecht and Jadwiga Sienkiewicz, ‘Legal Aspects of Climate Change Adaptation’ in Sven Rannow and Marco Neubert (eds), *Managing Protected Areas in Central and Eastern Europe Under Climate Change* (Springer 2014) 144.

However, as Chapter 4 discussed, significant gaps exist in water law in India around environmental flows, environment impact assessments, and the National Rural Drinking Water Guidelines have not incorporated such requirements for drinking water schemes.

The case studies in Chapter 5 and 6 demonstrate the need for an ecological dimension to the HRTW. For example, in the case of the Damodar in West Bengal, the downstream impacts of the diversion of water by the DVC towards its hydel-electricity plants have caused significant deterioration of the environmental flows of the river.<sup>946</sup> For much of the year, the river stays dry as the DVC stores water in its reservoirs for its own use. During this time, because the river bed is dry, sand mining is rampant across the lower stretches of the Damodar.<sup>947</sup> The DVC Act does not include a requirement for environmental flows, and there is no HRTW link to maintaining a particularly flow for the river itself, despite its importance to livelihoods downstream. The flow also affects the formation of the river, as discussed earlier, with cascading impacts on flooding downstream that impacts the HRTW (among other rights).

A human rights-based approach that incorporates ecological dimensions requires consideration of both livelihood uses and ecological uses. In other words, there will need to be an approach that develops in line with emerging principles of climate adaptation law, such as participation, deliberation, transparency and co-ordination should be central to how the HRTW is understood. For example, participatory approaches are now part of international practises for ecological flow management, watershed management, and other preservation and conservation

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<sup>946</sup> Susmita Ghosh, 'The Impact of the Damodar Valley Project on the Environmental Sustainability of the Lower Damodar Basin in West Bengal, Eastern India' (2014) 7 OIDA International Journal of Sustainable Development 47.

<sup>947</sup> Anil Giri, "'Illegal' Sand Mining: 46 Trucks Seized in Durgapur' (*The Asian Age*, 19 December 2016) <<https://www.asianage.com/metros/kolkata/191216/illegal-sand-mining-46-trucks-seized-in-durgapur.html>> accessed 22 August 2019.

activities.<sup>948</sup> As Joy and Others point out, such an approach to ecological flows, for example, would entail deliberation between different water users, such as fishing communities, tribal communities, industries, state energy departments, irrigation departments etc.<sup>949</sup> In both the Damodar and Jaipur case studies, none of these principles were adequately incorporated. Rather decisions of environmental flows are made by individual judges or a small body of ‘experts’ without broader considerations.

Accordingly, it is argued that the HRTW needs to be expanded to incorporate multiple uses of water: drinking, domestic, livelihoods, and ecological uses. Such reform would recognise the interactions between the various processes that mediate how one accesses water. Moreover, such reform has a strong basis under developing principles of climate adaptation law. Bringing these under a human rights framework provides a stronger focus on issues of justice.

### *7.1.3 A Right to the City approach to the Human Right to Water*

A second (though not mutually exclusive) way to broaden the HRTW is to analyse ways that the rights-framework can enable rights-holders to transform hydro-social environments they may live in. The ‘right to the city’ offers an alternative framework to have a broader approach to the HRTW. The right to the city originates from the work of Lefebvre, who outlined the right to the city not as a (legal) human right, but rather a declaration, call for action or slogan to ‘produce’ new urban environments.<sup>950</sup> The right to the city has been a popular source of inspiration for urban geographers. But, as will be discussed below, its core ideas can be used beyond urban areas. This section provides a novel way forward to broaden the HRTW through Lefebvre’s ideas. In the final section, this discussion is linked to existing

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<sup>948</sup> For example, in relation to environmental flows, leading scientists and practitioners have emphasised participatory approaches through the Brisbane Declaration in 2018. See: International River Foundation (n 550).

<sup>949</sup> Joy and others (n 314) 44.

<sup>950</sup> Henri Lefebvre, *Writings on Cities* (Blackwell 1996).

concepts in human rights, water and climate change law that could be drawn upon to do this.

#### *7.1.4 Lived space and the production of hydro-social environments: going beyond Lefebvre's 'city'*

Lefebvre's primary interest was in 'space' and how urban environments are 'produced'.<sup>951</sup> Lefebvre had a sophisticated understanding of space that conceived of space as not just 'physical space' but also how individuals conceptualised space from the ideas and representations of space.<sup>952</sup> He called this a 'lived space' in which people reside, which is dynamic space of everyday environments. For example, an urban communal water source (such as a well) represented not just a physical space that provided water to residents, but also ideas of solidarity, collectivism in preserving and maintaining the water source. Water access was produced out of such social relations that may involve individuals, local communities, NGOs, private corporations, the state.

While Lefebvre's primary interest was 'urban' spaces, the ideas around space, the production of space, and the interactions between social, ecological, political processes are drawn upon in water and climate contexts through the idea of the 'hydro-social cycle'. The 'hydro-social cycle', that was discussed in greater depth in Chapter 2, analyses water as a socio-ecological process, with water and society seen as hybrid constructions that make and remake each other.<sup>953</sup> Water is not detached from climate change or social/economic phenomena 'impacts', but instead needs to be viewed as interrelated to the socio-ecological processes that manipulate, influence flows of water. This includes climate, ecological, economic, and political and other processes.

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<sup>951</sup> Henri Lefebvre, *The Production of Space* (Blackwell 1991).

<sup>952</sup> *ibid.*

<sup>953</sup> Linton and Budds (n 180); Swyngedouw, 'The Political Economy and Political Ecology of the Hydro-Social Cycle' (n 181).

The production of hydro-climatic justice is through these different processes interacting in this ‘hydro-social’ cycle. In this thesis, the case studies illustrated various hydro-social environments, where social (including legal), economic, ecological, climatic processes interacted producing and reproducing hydro-climatic (in)justices that saw an uneven realisation of the HRTW. In other words, while Lefebvre’s ideas focussed on ‘cities’, the concept to ‘spaced’ embedded in his idea of the ‘city’, is useful in examining hydro-social environments and the production of hydro-climatic justice. The word “produce” has been used in this thesis deliberately, to denote that justice and the differentiated hydro-social environments examined in this research are not naturally occurring; rather they are a result of deliberate actions and policies.

Lefebvre’s central interest was in the marginalisation of inhabitants of the city in the production of spaces. Purcell points out that in liberal-democracies, citizens are often only represented in decisions over spaces in indirect ways, such as through elections of politicians who make decisions by a limited amount of participation.<sup>954</sup> Thus, everyday decisions over hydro-social environments are produced through formal state structures, where residents have a limited voice or control over these decisions.

The power of financial capital in recent decades further alienates inhabitants from the hydro-social environments they live in. Purcell explains, in relation to cities, that “many of the decisions that produce urban space are made within the state, but many more of them are made outside it”.<sup>955</sup> The boardrooms of corporate entities make decisions that ultimately have a significant effect on the everyday lives of individuals and communities. This was observed in Chapter Five and Six, where water was being reallocated for greater economic use for hydro-power or urban development. Although conventional enfranchisement does give citizens some

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<sup>954</sup> Mark Purcell, ‘Excavating Lefebvre: The Right to the City and Its Urban Politics of the Inhabitant’ (2002) 58 *GeoJournal* 99, 102.

<sup>955</sup> *ibid.*



influence over the decisions made by capital, that control is “diffuse and partial since the state can only influence the *context* in which capital is invested” for example, through environmental restrictions or policies, it cannot control such decisions directly.<sup>956</sup> This approach has been used by geographers to look at gentrification, privatisation of urban water supplies, housing, and other forms of appropriation of common spaces.

Relating this back to the case studies, in Chapter 5 it was demonstrated that in the Sundarbans, the coast and the embankment has a significant role in how climate change impacts upon the HRTW. The coastlines are a ‘lived space’, where socio-ecological relations are intrinsically woven into how the HRTW is realised. Multiple processes interact here: sea-level rise, cyclones, embankment governance, coastal zone regulation, tourism policies, and aquaculture among others. However, it was demonstrated that local inhabitants are removed from decisions around the embankment, for example, that have significant, existential, impacts on their lives, particularly concerning water, inundating water sources with seawater and impacting lives and livelihoods. These decisions relate not just to ‘participatory’ rights through the state mechanisms, but more structural participation in the socio-economic and socio-political decisions along the coast. The interaction of such processes produces uneven realisation of the right to water on a daily basis.

#### *7.1.5 Connecting the right to the city to the human right to water*

The right to the city responds to the separation that inhabitants feel from the socio-ecological environments they live in. It is important to note that there is a lack of literature that explores how a right to the city would look practically or the role of law in this context. Lefebvre himself did not spend much time looking at how the

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<sup>956</sup> *ibid.*

right would look ‘practically’.<sup>957</sup> There is debate on whether the right can be examined as a legal (human) right or instead simply ‘a call for action’.<sup>958</sup>

Today, a diverse range of views thus exists and there has been a renewed wave of interest in Lefebvre’s right to the city from activists, NGOs and academics, including those examining water issues.<sup>959</sup> The right to the city has also seen codification into a legal form in Brazil.<sup>960</sup> Thus, although drawn from a political-philosophical concept, it has started to be talked about as a right, with legal implications, whether this was Lefebvre’s original intention or not. The right to the city is a ‘cry or a demand’ for giving residents a seat at the table of such decisions.<sup>961</sup> The demand is for a right not just to participate but ‘produce, transform and renew’ hydro-social environments.<sup>962</sup>

For Lefebvre, there were two subordinate rights, to the right to city that all inhabitants hold (that are adapted here in the context of hydro-social environments):<sup>963</sup>

- i. *A right to participation*, being a right to participate in any decision that contributes to the production of hydro-social environments. These could be at different scales (local, national, regional, international). The modalities of how

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<sup>957</sup> Kafui A Attah, ‘What Kind of Right Is the Right to the City?’ (2011) 35 *Progress in Human Geography* 669.

<sup>958</sup> Ugo Mattei and Alessandra Quarta, ‘Right to the City or Urban Commoning: Thoughts on the Generative Transformation of Property Law’ (2015) 1 *Italian LJ* 303.

Edesio Fernandes, ‘Constructing the Right to the City in Brazil’ (2007) 16 *Social & Legal Studies* 201; Attah (n 957).

<sup>959</sup> Purcell (n 954); David Harvey, ‘The Right to the City’ (2003) 27 *International Journal of Urban and Regional Research* 939. Also see: Loftus, ‘Water (in)Security: Securing the Right to Water’ (n 253); Patrick Bond, ‘The Right to the City and the Eco-Social Commoning of Water : Discursive and Political Lessons from South Africa’ [2012] *The Right to Water: Politics, Governance and Social Struggles* 190.

<sup>960</sup> Abigail Friendly, ‘The Right to the City: Theory and Practice in Brazil’ (2013) 14 *Planning Theory & Practice* 158.

<sup>961</sup> Purcell (n 954) 104.

<sup>962</sup> Lefebvre (n 950) 158.

<sup>963</sup> Mark Purcell, ‘Citizenship and the Right to the Global City: Reimagining the Capitalist World Order’ (2003) 27 *International Journal of Urban and Regional Research* 564.

such a right operates in practice is subject to debate, as the idea is to expand participation to decisions of not just public entities but also private entities. An essential element is the ability to have a central and direct ability to participate, including in decisions of capital, rather than indirectly through the state.<sup>964</sup> Hence, this goes far beyond what much of international and domestic law propose as a right to participation in relation to environmental rights, which is a say in public processes of decision making such as the granting of environmental clearances.

- ii. *A right to appropriation*, where appropriation refers to the right of communities to reoccupy and reclaim hydro-social environments and also produce new environments that meet the needs of inhabitants.<sup>965</sup> This is similar to the notion of commoning, where hydro-social environments are transformed into commons structures where the right to use, participate, and create such environment falls on all inhabitants.<sup>966</sup>

The need to consider the entire hydro-social environment, rather than simply an abstracted concept of ‘water’ can provide a way to also address structural issues. Bond argues that drawing from the Lefebvre’s right to the city would provide a way for HRTW to address structural injustices:

“a broader conception of rights would entail making water primarily an *eco-social*, rather than a commercial, good. Including eco-systematic processes in discussions of water rights potentially links consumptive processes (including overconsumption by firms, golf courses, commercial agriculture and wealthy households) to environmental sustainability.”<sup>967</sup>

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<sup>964</sup> Purcell (n 954) 102.

<sup>965</sup> Purcell (n 963).

<sup>966</sup> Lefebvre’s idea of the city was as an *oeuvre*, a creative space that is created through the imagination and production of all inhabitants.

<sup>967</sup> Bond (n 83) 48.

So, for example, in the case study of Jaipur examined in Chapter Six (section 6.2 above) an approach to the human right to water that examined the entire hydro-social environment, would not only look at urban consumptive needs of residents in the cities, but also consider over consumption by particular sectors, such as industrial sector, luxury malls, wealthy parts of Jaipur. Through a right to appropriate and participation in hydro-social relations, a deliberative process can put these uses against the needs of poor in Jaipur, rural residents in peri-urban areas like Chaksu, as well as broader ecological needs.

#### *7.1.6 Rights to participate and appropriate: a more radical approach for human rights*

As stated, there are two subordinate rights: to participate and appropriate. Although participation is not a new idea from a human rights perspective, for right to the city advocates participation is seen in a much broader way. Harvey argues for a right to democratically control in far greater terms, such that the collective inhabitants gain control over the “production and utilisation of the surplus” produced over hydro-social environments.<sup>968</sup> The allocation and (re)allocation of water is a source of the massive surplus (profit). For example, in Chapter 6, the reallocation of water from rural areas in Jaipur occurred through state-led means of dispossessing rural populations of water. This reallocation was a means of surplus production through (market-friendly) economic growth in Jaipur.<sup>969</sup> The necessity of water for commercial and industrial growth directed the state to transfer water from rural populations through legal, political, and other means (as discussed through the lens of ‘accumulation by dispossession’).<sup>970</sup> Accordingly, the demand from participation would be to democratically control these flows of water and have a more direct role in water use and distribution.

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<sup>968</sup> David Harvey, ‘The Right to the City’ (2008) 53 New Left Review 23, 37.

<sup>969</sup> Birkenholtz, ‘Dispossessing Irrigators’ (n 421).

<sup>970</sup> *ibid.*

Urban geographers engaging with the right to the city put forward a bold participatory right. Purcell argues for a demand to a “direct seat at the table” of decisions beyond the indirect participation communities may have through democratic structures of environmental and water regulation.<sup>971</sup> So for example, in the case of Jaipur, this could be direct participation in decisions around water allocation made by the Asian Development Bank and the Japan International Cooperation Agency (who financed the pipeline), State Government decisions, including more on-going governance of the dam and pipeline. Effectively, this would democratise (or rather, completely overturn) the ‘accumulation by dispossession’ strategies through a “radical transformations in the structures of political power”.<sup>972</sup>

The second subordinate right is the right to appropriation. The idea of appropriation is the right to ‘reclaim’ hydro-social environments as well as produce new spaces that meet the needs of rights-holders. Both rights (to participation and appropriation) are inextricably linked. However, appropriation here refers to being able to live, use, create, produce, and govern hydro-social environments. For example, the right to water, in a narrow framing provides a right to a quantity of water. However, a right to appropriation would demand the right to define the hydro-social environments people inhabit, including the basic rights of a quantity and quality of water (and other fundamental rights).<sup>973</sup>

In other words, the right to appropriation tries to maximise the ‘use value’ of the hydro-social environment. Use-value can be contrasted with ‘exchange value’. For example, the exchange value of water is its value in on the market, in a commodified sense. Seeing water as an ‘economic good’, as the Dublin Principles outline, is one example of conceptualising water through exchange value. On the other hand, ‘use-value’ is the actual utility of water, for example linking to earlier discussions around basic water use for sustenance, livelihood or even for ecological requirements. Within

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<sup>971</sup> Purcell (n 954) 104.

<sup>972</sup> *ibid.*

<sup>973</sup> Don Mitchell, *The Right to the City: Social Justice and the Fight for Public Space* (Guilford Press 2003).

this framework, right to appropriation aims at transferring control of hydro-social environments so that they are governed by ‘use-value’ rather than exchange value.<sup>974</sup> The right to more direct forms of participation overlap here, as ‘use value’ would be determined by a democratic form of control. For example, the reallocation of water from rural to urban areas in Jaipur, was an example of the appropriation of water for exchange value and an example of accumulation by dispossession. As discussed in that case study, one of the critical changes was the conceptualisation of water as an economic good that was partly a reason for how water was being allocated towards urban environments and growth.

#### *7.1.6.1 Issues of scale and democracy*

Given the openness of Lefebvre’s discussion on the right to the city, and its use by radical geographers, the above discussion is not without conceptual and practical issues. Two immediate issues arise with the right to the city’s approach through participation and appropriation. The first issue concerns scale. If the right to water is transformed as a right to ‘democratically participate in hydro-social relations’, at what scale does this occur. For example, withdrawals of water from one river basin, aquifer, have cascading impacts across scales. Hydro-climatic change and the Anthropocene have brought these connections under the immediate spotlight. However, the intertwined nature of relations between water, climate and ‘everything else’ means that many decisions and processes are interrelated. For example, the operation of a coal mine, or a hydropower dam, to everyday activities such as the operation of supermarkets, cars, factories, universities, schools, all of which rely on flows of carbon, water, and other resources. At what point can a line be practically drawn around which hydro-social relations are brought into focus, who participates, and at what scale.

Urban geographers have often been deliberately radical and provocative in their suggestions to date. Purcell, for example, suggests that there needs to be a direct

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<sup>974</sup> Purcell (n 963).

seat at the table for *any* decision that may impact the production of a particular space such that it demands an international participatory right.<sup>975</sup> Consider a hypothetical decision to build a large power plant in neighbouring Bangladesh that would likely see dispossession of land and water, displacement and cross-border migration into India (and perhaps other countries). As such a policy-decision would likely have an effect on the production of spaces in other countries, say those in West Bengal, by changing population geography, or cross-border hydro-climatic impacts, Purcell would argue that inhabitants in India (and other countries, including those in the global North that may be affected) would have a right to participate centrally in the Bangladesh government's land policy decision. As Purcell points out this approach "upends the current nested hierarchy with a complicated vision of overlapping and reconfiguring scales".<sup>976</sup>

However, this has controversial implications on several fronts. It could be viewed as arguing in favour citizens of India, a powerful country in the region, having rights over Bangladesh, a relatively weaker country. Moreover, if countries in the global North are also included, it may be suggesting a new form of neo-colonialism to provide residents of Global North a stake in the decision in the Global South. On the other hand, it could also be an approach to empower, for example, poor climate-vulnerable residents in the Indian Sundarbans, have a say in decisions that impact their vulnerability across borders. Going further, if the example was not in Bangladesh but a country in the global North, Purcell's approach suggests that decisions of water-intensive agricultural practices or coal mines and fracking in the Global North could have participation by Global South.

Nevertheless, such radical forms of participation seem utopian for now. In general Purcell and other geographers have been deliberately provocative without trying to link their ideas back to existing laws, policies and rights. Still, the overall demand for more direct forms of participation being central to the HRTW does open

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<sup>975</sup> Purcell (n 954) 104.

<sup>976</sup> *ibid.*

up space to reimagining providing voice across different scales that exist. Moreover, it proves a way to centre distributive justice, procedural justice and recognition at the core of the HRW. For example, in the case study of Jaipur, this could be a more direct voice for citizens in both Jaipur city and villages around the Jaipur would have a role in direct participation in decisions. Similarly, in the case study of the Damodar, the right to water could demand a central voice on a regional scale of communities in the whole river basin, to participate in decision making. Recall here, that the DVC Act 1948 confined decision making to a narrow group of actors (ministers, designated experts and government bureaucrats). A change in the DVC Act 1948 could instil a more comprehensive right to participate in decisions regarding how the river-basin is managed. A logical extension of this would be in a situation of a shared transboundary watercourse, such as a river or an aquifer.

A second challenge arises from the contestations and competition that are inherent in the struggle for hydro-climatic justice. If the right to water is reconceptualised to expand democratic production of the hydro-social cycle, such an expansion of democracy will inevitably be fraught with competing rights. In the case study of the Damodar in Chapter 5, water was being held back, diverted, by the DVC, through its hydroelectric dams, for energy production. Energy is an essential aspect to several rights, including the right to food, livelihoods and an adequate standard of living. Hence, contestations around energy and water may involve trade-offs between rights-holders particularly in the context of water scarcity. On the other hand, it could bring into focus issues of distribution and use, as Bond alluded to earlier, as the democratic production of the entire hydro-social environment is considered such that how (and who) the energy is being used can also be scrutinised.<sup>977</sup>

This relates to another tension, that greater democratic engagement (or participation) will automatically provide more sustainable and equitable outcomes. It is a point that is often glossed over by urban geographers. For example, if a marginalised minority community have the right to participate, occupy and use a

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<sup>977</sup> Bond (n 83) 48.



particular hydro-social environment, it can often be at the against the wishes of the majority, who may support laws that suppress these groups. But, under the right to the city approach, a collective right to democratically manage resources is advocated. In such situation it is precisely this sort of democratic management (or majoritarianism) that the right would also want to fight against.<sup>978</sup> A similar example can be seen in the case study of the Sundarbans, where a maladaptation is identified with the practise of aquaculture in the region. Greater democratic engagement, through the wishes of the majority could see decisions to continue mal-adaptive practises because of their profitability in the region.

## **7.2 Human Right to Water and Solidarity: recognizing multiple interconnections in a climate-pressed world**

The idea of solidarity in a human rights context provides another way to approach how law can coherently interact with the intertwined relations that produce hydro-climatic injustices. Though traditionally the human right to water has been framed as a socio-economic right (and thus “second generation” right), the argument here is that another pathway to recognising both the multiple processes that produce hydro-climatic injustices and the collective actions required to overcome these injustices is to reframe the HRTW with a solidarity dimension. Solidarity is not mutually exclusive to the two approaches discusses above. However, unlike the right to the city approach, it has a much firmer basis in law and policy. The final section of this chapter aims to bring these approaches closer together.

### *7.2.1 Background to Solidarity or “Third Generation” Rights*

Solidarity broadly refers to the idea of mutual support, connectivity, and recognition of that furthering the needs of others, collectively, also furthers individual and community needs. Solidarity behaviour may require a sacrifice, a cost to oneself

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<sup>978</sup> Attoh (n 957) 677.

for the benefit of another individual or the whole group.<sup>979</sup> Solidarity rights are a term for human rights that are enjoyed by individuals and collective entities (communities, groups or states themselves). Solidarity rights, by their nature, require substantial co-operation by social processes for their realisation.<sup>980</sup> Solidarity rights sometimes termed “third-generation” rights, bring forward rights that are interdependent on other subject areas. Examples of solidarity rights include the human right to a healthy environment, the right to peace, or the right to development.

Traditionally, civil and political rights were defined as “first generation” rights; social and economic rights, as “second generation” rights; and solidarity rights as “third-generation” rights. This terminology also reflected distinctions made between positive and negative rights. However, these distinctions are somewhat artificial and pejoratively used to dismiss second and third generation rights as aspirational. The distinctions between first generation rights as ‘civil and political rights’, second generation rights, as socio-economic rights and third generation rights as ‘solidarity rights’, are also over-emphasised and need to be re-evaluated. Environmental rights, for example, depend on first generation rights to life, participation and information; to second generation rights to health, water, or food; and have collective dimensions that rely on third generation rights.<sup>981</sup> Moreover, as has been emphasised by international law, all rights are universal, interdependent and interrelated.<sup>982</sup> Hence, the divisions are less applicable, are by the nature of environmental issues, and do not apply under the law.<sup>983</sup>

Today, social and economic rights are part of mainstream international and domestic human rights law. The HRTW has mostly been seen through the lens of a

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<sup>979</sup> Arto Laitinen and Anne Birgitta Pessi, ‘Solidarity: Theory and Practice. An Introduction’ in Arto Laitinen and Anne Birgitta Pessi (eds), *Solidarity: Theory and Practice* (Lexington Books 2015) 12.

<sup>980</sup> Prue Taylor, *An Ecological Approach to International Law: Responding to Challenges of Climate Change* (Routledge 1998) 201.

<sup>981</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 45–46.

<sup>982</sup> UNGA, ‘Vienna Declaration and Programme of Action’ (n 286).

<sup>983</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 45.

socio-economic right. As Chapter Three, discussed, the HRTW has been recognised around the world, as well as under regional and international instruments. On the other hand, solidarity rights are still nascent though gaining more recognition.<sup>984</sup> For example, the right to environment has now been recognised in several countries, although still to gain acceptance under international law.

Solidarity rights have been subject to several critiques.<sup>985</sup> Unlike traditional, mainstream human rights, it is difficult to identify ‘who’ would constitute a victim if a right is violated and who the duty-bearer would be.<sup>986</sup> The collective action required for the right to be realised means that a higher level of duty is borne, not just by the state, but other actors that are traditionally not considered to be duty bearers under human rights law. Thus, the ‘subject’ of the right shifts from the individual to include the collective. The subject could be either a group of people (e.g. a village, or a minority group) or even a state. The collective dimensions of solidarity rights are a radical departure from the individualism that has been central to human rights. For example, the UN Human Rights Council has mandated work on human rights and ‘international solidarity’, towards the possibility of developing a right to international solidarity.<sup>987</sup> International solidarity is the idea that states, as well as individuals, peoples, international organisation, work together towards achieving common goals. These could be climate change actions, human migration and the treatment of refugees and asylum seekers or creating a fairer global tax system. States, among others, need to work together including through the promotion and consolidation of international assistance towards these goals. As Freedman points out, in this context

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<sup>984</sup> Rosa Freedman, “‘Third Generation’ Rights: Is There Room for Hybrid Constructs within International Human Rights Law?” (2013) 2 Cambridge Journal of International and Comparative Law 935, 947–948.

<sup>985</sup> Carl Wellman, ‘Solidarity, the Individual and Human Rights’ (2000) 22 Human Rights Quarterly 639.

<sup>986</sup> Freedman (n 984) 952.

<sup>987</sup> UN Human Rights Council, ‘Report of the Independent Expert on Human Rights and International Solidarity’ (2018) A/HRC/38/40.

states are the primary rights holders and individuals are secondary, representing a radical departure of the dominant ideology of human rights.<sup>988</sup>

Solidarity rights are often said not to be justiciable and hence problematic as a human right. The main concerns are around identifying duty bearers, rights holders, and ‘victims’ of rights violations. However, human rights do not need to be justiciable to be human rights. As Alston asks, is the quality of being justiciable so indispensable as an attribute of human rights.<sup>989</sup> In any case, jurisprudence in the African human rights system in the last two decades has shown that solidarity rights can be justiciable.<sup>990</sup> Another significant challenge for solidarity rights is the global nature of their goals. Traditionally, human rights have developed embedded with the idea of state sovereignty. However, the assumption that issues can be resolved within national boundaries is not possible when it comes to issues of solidarity such as climate change, development and environment. Freedman argues that the scope of solidarity rights goes “beyond traditional territorial and extraterritorial applications of human rights obligations”.<sup>991</sup> Instead there is a global, collective, responsibility to ensure that all states can implement human rights. Thus, the scope of responsibility, for solidarity, extends beyond national boundaries. The criticisms of solidarity rights, summarised above, do not hold up when considered considering the relationship between human rights, water and climate change. This next-sub section outlines why a solidarity approach to the HRTW is necessary in this context.

### 7.2.2 *Solidarity: Centring on the Hydro-Social Relations*

As discussed, the mainstream understanding of socio-economic rights, such as the HRTW, has been constructed around the delivery or provision of the ‘good’ (in

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<sup>988</sup> Freedman (n 984) 953.

<sup>989</sup> Philip Alston, ‘Making Space for New Human Rights: The Case of the Right to Development’ (1988) 1 *Harvard Human Rights Yearbook* 3, 35.

<sup>990</sup> Werner Scholtz, ‘Human Rights and the Environment in the African Union Context’ in Anna Gear and Louis J Kotzé (eds), *Research Handbook on Human Rights and the Environment* (Edward Elgar Publishing 2015).

<sup>991</sup> Freedman (n 984) 954.

this case water) or enabling access to the good has been the central focus. In contrast, a defining feature of a solidarity rights is being centred around a broad objective, for example the right to ‘peace’, ‘development’, a ‘healthy environment’ or the ‘self-determination’ of a population. Because of the broad objectives of solidarity rights several further points of difference can be made with the mainstream approach to socio-economic rights:

- (i) that the right cannot be satisfied by merely the provision of a ‘good’ (such as a quantity of water or a parcel of food);
- (ii) that there could be specific subordinate rights to the overarching solidarity right (including, for example, the right to a particular quantity of drinking water);
- (iii) that several actors can have obligations to facilitate the rights of others, beyond just the ‘state’. Note, this is not to derogate from the duties of the state. The duties of the state must remain and expand. However, the role of other actors could be expanded to more than just a minimum right of ‘respecting’ human rights, but corresponding duties to facilitate;
- (iv) that such actors should work together (‘in solidarity’) towards such a particular (perpetual) end, such as a healthy environment or sustainable development;
- (v) that the right is held by individuals, and/or by groups of people (“peoples”).

Accordingly, an essential aspect of a solidarity right is to collectively mediate social relations towards an overarching objective.

While the collective dimensions of solidarity rights are a radical departure from the individualism that has been central to human rights, the HRTW has in fact always had a strong collective dimension in how it is understood. The first time the HRTW came to the fore in an international forum was at the 1977 UN Conference on

Water in Mar del Plata, Argentina, where the HRTW was articulated as a collective right, held by “all peoples”.<sup>992</sup> The collective responsibility and action required to meet this right was also emphasised. Langford points out how collective dimensions were also an important part of negotiations around General Comment 15 on the right to water at the UN.<sup>993</sup> General Comment 15, in the end, included recognition of the ‘public’ nature of water.<sup>994</sup> Importantly, a solidarity approach does not mean a derogation of an individual’s water needs. Rather, that individual needs are approached from a collective perspective, recognising the interdependence of different actors to meeting individual needs.

Furthermore, the actual practice of how individuals and collective groups access water is inherently dependant on solidarity-based relations. The importance of communal water ponds, water harvesting structures were discussed in Chapter 6, in the case study of Rajasthan, where ideas of sharing, communal management, are integral to how water is accessed. Similarly, in the Sundarbans, during times of hydro-climatic stress those without water often depend on the solidarity of those with groundwater tube-wells, or ponds, to gain access to the minimum levels of water. The emphasis on solidarity here is not to discount that exclusionary practises can exist alongside solidarity practices (for example, in relation to caste and communal water sources, as earlier chapters discussed), instead to emphasise the relational nature of water access, and how solidarity practises mediate the human right to water. Thus, objections to collective dimensions being recognised in the HRTW are also not reflected in how human rights are practised and understood ‘on the ground’.

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<sup>992</sup> UN Water Conference (n 272) 66.

<sup>993</sup> Malcolm Langford, ‘The United Nations Concept of Water as a Human Right: A New Paradigm for Old Problems?’ (2005) 21 *International Journal of Water Resources Development* 273, 276.

<sup>994</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 1.

### *7.2.3 Solidarity reflected in law and the emerging right to international solidarity*

A principle of solidarity is reflected in both international and domestic law in several fields, even if not expressly stated. Under international environment law, the principle of common but differentiated responsibility (“CBDR”) is one example of solidarity. CBDR recognises the responsibility for states to “co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem”.<sup>995</sup> It also recognises that countries have different responsibilities, based on factors such as historical emissions and resource use, as well as different capacities, based on levels of socio-economic development. CBDR is an example of the manifestation of an understanding of international solidarity, where issues require global collective action, but differences are recognised.<sup>996</sup>

International cooperation, a central element of solidarity, is also recognised as an aspect of the HRTW. Under Article 2(1) of the ICESCR all state parties have obligations to progressively realise rights, “individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources”.<sup>997</sup> Article 23 of the ICESCR provides a non-exhaustive description of the actions that can be taken. The scope of such assistance extends only to provide as much as the state is in a position to assist with. General Comment 15 elaborates that states “should facilitate realisation of the right to water in other countries, for example through provision of water resources, financial and technical assistance, and provide necessary aid when required”.<sup>998</sup> General Comment 15 also includes the principle of CBDR where “economically developed States parties have a special responsibility and interest to assist the poorer developing States in this

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<sup>995</sup> Rio Declaration on Environment and Development 1992 principle 7.

<sup>996</sup> Angela Williams, ‘Solidarity, Justice and Climate Change Law’ (2009) 10 Melbourne Journal of International Law 493, 506.

<sup>997</sup> International Covenant on Economic, Social and Cultural Rights Art. 2(1).

<sup>998</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 34.

regard”.<sup>999</sup> State practise is yet to reflect that these obligations are seen as binding, rather to date they are seen mostly moral and political aims.<sup>1000</sup>

In the last ten years, there has been a slow progression towards integrating a principle of solidarity under international law, as well as develop a ‘human right to international solidarity’.<sup>1001</sup> The UN Human Rights Commission (the predecessor of the UN Human Right Council) gave a mandate for an Independent Expert on human rights and solidarity in 2005.<sup>1002</sup> Recently, a draft declaration of international solidarity was provided by the independent expert to the UN Human Rights Council.<sup>1003</sup> ‘International solidarity’ essentially is individuals, peoples, States and international organisations working together towards achieving common goals. The components of such solidarity are ‘preventative solidarity’, where unified actions proactively address shared challenges (for example, climate adaptation actions); ‘reactive solidarity’ in response to situations of crisis (such as during climatic disasters) and international co-operation (for example, climate change finance).<sup>1004</sup> While individuals and states hold the rights to solidarity collectively, the obligations fall on state parties. Climate change is an important identified theme of the independent expert’s work. Several areas are noted under the rubric of climate change and international solidarity, including (a) equity in climate finance; (b) nexus between climate finance and progressive realisation of economic, social and cultural rights (for

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<sup>999</sup> *ibid.*

<sup>1000</sup> Leb (n 455) 645.

<sup>1001</sup> The work of the independent expert is available publically, see: ‘The Independent Expert on Human Rights and International Solidarity’ (*UN Office of the High Commissioner for Human Rights*) <<https://www.ohchr.org/EN/Issues/Solidarity/Pages/IESolidarityIndex.aspx>> accessed 18 August 2019.

<sup>1002</sup> Office of the High Commissioner for Human Rights, ‘Human Rights and International Solidarity’ (2005) E/CN.4/RES/2005/55.

<sup>1003</sup> UNGA, ‘Report of the Independent Expert on Human Rights and International Solidarity’ (2017) A/72/171.

<sup>1004</sup> UN Human Rights Council, ‘Draft Declaration on the Right to International Solidarity, Annex to the Report of the Independent Expert on Human Rights and International Solidarity’ (2017) A/72/171 Art. 2.



example, the for funding in the water sector in developing countries); (c) the question of common but differentiated responsibilities.<sup>1005</sup>

### 7.2.3.1 *Domestic and regional examples of solidarity principles in law*

Domestic and regional jurisdictions provide further elaboration of how a principle of solidarity could be relevant for the HRTW. In Europe, the idea of solidarity has a place in numerous treaties and declarations, including in the realm of water law.<sup>1006</sup> For example, the European Flood Directive 2007/60 EC (“Flood Directive”) states that solidarity means (i) member states should not take any measures, that increase flood risks in other states, unless these actions are coordination, and that (ii) members should seek fair sharing of responsibilities.<sup>1007</sup> International solidary under the Flood Directive is illustrated through a reciprocal obligation to overcome difficulties through collaboration. Moreover, in the Netherlands, water laws also incorporate a principle of solidarity. For example, Keessen and Others argued that the Dutch Delta Programmes justify redistributions of funds to more impoverished and flood-prone areas as a compulsory measure.<sup>1008</sup> At the same time, this does not extend to other activities by the Dutch water boards (i.e. activities that are not in relation to flood events).<sup>1009</sup> Accordingly, Keessen and Others argue that there is a greater need for solidarity in the context of climate change adaptation.<sup>1010</sup>

In South Africa, the concept of *Ubuntu* has been used by the Courts to emphasise relationality of human rights. *Ubuntu* translates to “humanness” and can be

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<sup>1005</sup> UN Human Rights Council, ‘Report of the Independent Expert on Human Rights and International Solidarity’ (n 987) para 38.

<sup>1006</sup> For example:

<sup>1007</sup> Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks 2007 preamble and Art. 4.

<sup>1008</sup> Andrea Keessen and others, ‘Solidarity in Water Management’ (2016) 21 *Ecology and Society* 35, 41.

<sup>1009</sup> *ibid.*

<sup>1010</sup> *ibid.*

seen broadly as the idea that to develop one's humanness is only through solidarity and relational identities with others.<sup>1011</sup> The South African Constitutional Court has stated that Ubuntu translates to “key values of group solidarity, compassion, respect, human dignity, conformity to basic norms and collective unity.”<sup>1012</sup> For example, in a human rights case where the occupiers of privately owned land were being evicted, the Court refused to evict the occupiers until reasonable steps were taken to find alternative lodging.<sup>1013</sup> The notion of *ubuntu* was central to the Court's reasoning, noting that the basic idea of society cannot be one where intolerable hardship is felt, where it could be avoided.<sup>1014</sup> The Constitutional Court has commented saying that ubuntu signifies a combination of “individual rights with a communitarian philosophy”.<sup>1015</sup> The idea of *ubuntu* is not restricted to human solidarity, but also reflects solidarity between humans, nature, and spirituality. Kotze, notes that through recognising the concept of *ubuntu* the Courts have reinforced the idea that the South African environmental right applies collectively, and not individually, to “everyone” for the sake of fostering harmony in any collective reality such as the Earth system.<sup>1016</sup> Seeing the realisation of human rights, through *ubuntu*, reflects an understanding that the realisation of rights is through socio-ecological relations and a relational understanding of justice.

In the Indian context, the directive principles and fundamental duties under the Constitution can provide scope for a solidarity approach to the HRTW. First, Part IV of the Indian Constitution lists several Directive Principles of State Policy (“DPSP”). The DPSP provide directions for the state in how to secure economic and social goals

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<sup>1011</sup> Lisa Forman, ‘Justice and Justiciability: Advancing Solidarity and Justice through South Africans’ Right to Health Jurisprudence.’ (2008) 27 Medicine and Law 661, 680.

<sup>1012</sup> *S v Makwanyane and Another* [1995] ZACC 3 (Constitutional Court of South Africa) [307].

<sup>1013</sup> *Port Elizabeth Municipality v Various Occupiers* (CCT 53/03) [2004] ZACC 7 (Constitutional Court of South Africa).

<sup>1014</sup> *ibid* 37.

<sup>1015</sup> *ibid*.

<sup>1016</sup> Louis J Kotzé, ‘Human Rights, the Environment, and the Global South’ in Shawkat Alam and others (eds), *International Environmental Law and the Global South* (Cambridge University Press 2015) 181.

of the Constitution. Under Article 48A, the state is directed to “endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country”.<sup>1017</sup> While not justiciable, the Courts have stated that fundamental rights are guided by DPSP. Fundamental rights, such as the HRTW, should be interpreted in the light of this duty. According to Razzaque, where there is a conflict between the two, the fundamental right should be made to confirm and seek synthesis with the DPSP.<sup>1018</sup> Furthermore, citizens have duties and under Article 51 A, every citizen has a “duty to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.” Duties are also not justiciable; however, they have again been read by the Courts in the context of fundamental rights.

Read together, a fundamental right, along with DPSP reflect the idea of solidarity required in tackling environmental and water issues. There is a need for more work on fundamental duties in relation to the environment. There is a significant gap in the literature around fundamental duties regarding the environment. There are a few different reasons for this. First, as duties are not justiciable and sometimes seen as aspirational, there has been a focus on rights itself. Second, the state should be the focus for the realisation of human rights, as the state bears a large responsibility at different levels for social and environmental issues in India. The state’s failings around socio-economic rights and poverty issues are clear, as the earlier chapters also illustrated, hence there are good reasons to focus on the state. Finally, there is a risk of individualising responsibility upon citizens for their environment through a notion of duties, rather than focussing on structural causes.

The final concern is particularly important in the Indian context. For example, Chapter 3 mentioned that in recent years, the Supreme Court had adopted an individualised discourse of human rights, often at the detriment of the poor. For example, the Supreme Court blamed poor inhabitants living near the Yamuna river for

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<sup>1017</sup> Constitution of India Art. 48A.

<sup>1018</sup> Razzaque (n 480) 72.

river pollution and ordered their ‘removal’.<sup>1019</sup> The High Court of Bombay, in a recent order, also stated that while there is a fundamental right to water, such a right did not extend to those living in ‘illegally constructed’ dwellings (i.e. slums).<sup>1020</sup> These examples illustrate a danger that emphasising duties could provide another approach to ‘blame the poor’. Expanding the use of constitutional duties could see the notion of duties used to further individualise unjust judgements. Moreover, it could distract from structural causes of the uneven realisation of the HRTW.

On the other hand, arguably, such a reading of duties would be against the very concept of solidarity. Elements of distributive justice, recognition, fairness, altruism are features of solidarity as a concept in social sciences. These principles are reflected in how the Independent Expert on human rights and international solidarity has examined the issue of international solidarity. The concept of CBDR, discussed earlier, reflects how recognising differences between actors is an important aspect of solidarity. Furthermore, a solidarity rights approach also advocates for holding powerful non-state actors to account, for example through reading the HRTW in India, within the context of duties and under Article 51 A of the Constitution “to protect and improve the natural environment”.<sup>1021</sup>

#### *7.2.4 Envisioning a Solidarity Approach to the Human Right to Water*

A solidarity approach to human rights has several benefits from a justice perspective. Such an approach can centre upon the principle that the various actors, across a hydro-social environment, ‘work together’ towards furthering hydro-climatic justice. It reflects the fact that hydro-climatic change is a complex problem that has collective impacts and requires a collective approach. A solidarity approach is different from the current approach that focuses solely on the obligations of individual states primarily providing access to water to its citizens and protecting pollution of water bodies. The obligations of the state to provide drinking, domestic and water for

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<sup>1019</sup> *Wazirpur Barta Nirmata Sangh v Union of India* (High Court of Delhi).

<sup>1020</sup> *Pani Haq Samiti v Brihan Mumbai Municipal Corporation* (n 866).

<sup>1021</sup> Constitution of India Art. 51A.

multiple uses, as well as regulate and prevent pollution, remain. But solidarity can also bring into focus other actors, as well as the need to centre HRW decisions around the principles of distributive justice that is often at the core of solidarity.

The benefits of this approach are evident in relating to the case studies in Chapter 5 and 6. For example, in Chapter 5, the case study in the lower Damodar Valley illustrated a disjuncture between the DVC and the West Bengal state government relating to timing, release of water from the dam. This was particularly critical with climatic changes, and water stress in the region. Within the state government itself, there were disagreements around how the dam was operated between different sectoral departments such as irrigation, PHED, or the disaster management whom each had their own silo-ed areas of responsibility. A solidarity approach would demand coherence and obligations on each of these actors to work towards the realisation of the HRTW. Currently, as Chapter 5 illustrated, the DVC or the Irrigation Department has little to no obligations to promote or protect the HRTW.

In Chapter 5, the case study in the Sundarbans also illustrated how economic and social processes, relating to tourism and fishing, mediate the realisation of the HRTW. The role of duties on actors in these sectors is one benefit from in envisioning a solidarity approach to the HRTW. For example, the (over)use of water by the burgeoning tourism industry for non-essential uses has a direct impact on the water tables that mediate water provided for basic uses in the region. Notwithstanding the primary duties of the state in A solidarity approach provides a basis for utilities the notion of duties, that has a basis under the Indian Constitution, that correspond to the duties on states in realisation of the HRTW.

The lens of solidarity can also provide a way to focus on the extra-territorial dimensions of the HRTW. As Chapter 3 discussed, water and climate issues permeate sovereign boundaries. This is increasingly relevant, in both the South Asian context and globally. While there has been limited traction on expanding the HRTW to incorporate extraterritorial obligations, in the future this may become more relevant under current projections of climate change. Chapter 3 pointed out one such issue, where the diversion of water in West Bengal through the Farakka Barrage, exacerbates the salinisation of the river, erosion, threatens the Sundarbans region in

Bangladesh and has significantly impacted access to water for drinking, livelihood and food production in Bangladesh.

Similarly, actions in Bangladesh, such as the recent plans to build a coal fired power station in the Sundarbans, can have impacts across on the Indian side.<sup>1022</sup> A solidarity approach to human rights would place duties on both states to work together, along with other states, to further the HRTW. Such an approach may demand that other actions are taken seriously, such as the need for “international assistance and cooperation, especially economic and technical” mentioned in General Comment 15.<sup>1023</sup> Although recognising the existing principles of cooperation<sup>1024</sup>, notification<sup>1025</sup> and consultation<sup>1026</sup> that are part of international environmental law, a benefit of this approach is to refocus water diplomacy towards justice.

A key task is to reorient water diplomacy, where individual sovereign states often horse-trade to maximise utility of water within their states (particularly around groundwater, where there is a lack of international rules even in a transboundary context) towards a focus on human rights, poverty, livelihoods, and hydro-social environments across borders. The further development of the right to international solidarity under the auspices of the UN Human Rights Council, mentioned earlier, could be a beneficial development in the future.

### **7.3 From a Human Right to Water to a Human Right to Produce Hydro-Social Environments**

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<sup>1022</sup> Sahana Ghosh, ‘A Cross-Border Coal Power Plant Could Put Sundarbans At Risk’ [2018] *Mongabay-India* <<https://india.mongabay.com/2018/08/a-cross-border-coal-plant-could-put-sundarbans-at-risk/>> accessed 5 September 2019.

<sup>1023</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 38.

<sup>1024</sup> See: International Law Commission, ‘Draft Articles on Prevention of Transboundary Harm from Hazardous Activities’ (2001) Text adopted by the ILC at its fifty-third session Article 4; Convention on Environmental Impact Assessment in a Transboundary Context 1991 Article 8.

<sup>1025</sup> See: Rio Declaration on Environment and Development Principle 19; Espoo Convention Article 3; International Law Commission (n 1024) Article 8.

<sup>1026</sup> Rio Declaration on Environment and Development Principle 19; International Law Commission (n 1024) Article 9; Espoo Convention Article 5.

This final section brings together the three approaches discussed above to argue that the HRTW should be broadened to an individual and community right to water has to transform the hydro-social environments they live in.

### *7.3.1 A Right to Commons: Strengthening the Hydro-Social Commons*

Several commentators have argued that the right to water has to transform towards a greater democratic role of individuals and communities in appropriating hydro-social spaces such that they are governed by ‘use values’. For example, Linton argues that the right to water needs to go beyond an individual right towards a right to change social relations around water.<sup>1027</sup> He argues that the right to water needs to be involved in the processes that define hydro-social relations. Loftus, similarly, argues that the right to water should be expanded to a democratic right to forge “waterscapes in dramatically different ways” implying a right to “participate democratically in the production, distribution and exchange of water”.<sup>1028</sup> Jepson and Others argue that we need to move towards individuals, households and communities being able to “navigate and transform hydro-social relations to access the water that they need” in ways that support increasing human capabilities.<sup>1029</sup> Finally, Clark illustrates how narratives of everyday struggles for water justice use the HRTW to thwart narrow interpretations of the right and engage in ways to manage water communally.<sup>1030</sup> She argues that a HRTW is engaged in a strategic battle for an “alternative vision of society” albeit one that is locally articulated and claimed.<sup>1031</sup>

The ‘commons’ usually refers to ‘common-pool resources’, such as water, which are not able to easily dividable and hence need a common frame of management. The ‘commons’, as a verb, however, is the actual practice of how a

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<sup>1027</sup> Linton (n 933).

<sup>1028</sup> Loftus, ‘Water (in)Security: Securing the Right to Water’ (n 253) 5.

<sup>1029</sup> Jepson and others (n 320) 49.

<sup>1030</sup> Clark, ‘Water Justice Struggles as a Process of Commoning’ (n 426); Clark, ‘Of What Use Is a Deradicalized Human Right to Water?’ (n 442).

<sup>1031</sup> Clark, ‘Water Justice Struggles as a Process of Commoning’ (n 426) 95.

resource is managed. The right to appropriation, in terms of the right to water, can be interpreted as a ‘right to common’. That is, the right to produce environments that are held in commons. Such a right would mean the HRTW entails that water, and even broader aspects of hydro-social environments, should be held as a common.

### 7.3.2 *A Right to a Water Commons: Public Trust and Common Heritage*

The public trust doctrine and common heritage of humankind are two examples of commons-based legal principles that are relevant to furthering solidarity, as well as a right to appropriation (under Lefebvre’s right to the city, discussed above). These two principles have particular salience in the Indian context. As Chapter Four explained the Supreme Court had stated that the Public Trust Doctrine applied to surface water in India.<sup>1032</sup> The High Court of Kerala had also mentioned it in relation to groundwater.<sup>1033</sup> However the Supreme Court had cast some doubt over this in *obiter* comments.<sup>1034</sup>

#### 7.3.2.1 *Public Trust Doctrine*

The public trust doctrine introduces a commons-based understanding of how water is governed. Central to such an understanding is the relationship between water, society, climate and other socio-ecological processes. Several commentators have proposed that principles of public trust could be vital in re-orientating environmental law and water governance in the context of climate change.<sup>1035</sup> Several commentators also argue that expanding ‘trust principles’, re-orientates an ethic of inter-generational resource protection and more equitable intra-generational resource use.<sup>1036</sup> As discussed in Chapter 3, the Public Trust could be one way to expand the ‘ecological

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<sup>1032</sup> *M.C. Mehta v Kamal Nath & Ors* (n 310).

<sup>1033</sup> *Perumatty Grama Panchayat v State Of Kerala* (n 505).

<sup>1034</sup> *State of West Bengal v Kesoram Industries* (n 505).

<sup>1035</sup> Takacs (n 341); Jackson, Brandes and Christensen (n 512); Scanlan (n 278).

<sup>1036</sup> Mary C Wood, ‘Nature’s Trust: A Legal, Political and Moral Frame for Global Warming’ (2007) 34 *Boston College Environmental Affairs Law Review* 577; Klaus Bosselmann, *Earth Governance: Trusteeship of the Global Commons* (Edward Elgar Publishing 2015); Takacs (n 341).



use' requirements of a HRTW.<sup>1037</sup> As Takacs notes, public trust would require a consideration of both equity and ecology with an attempt to balance these considerations.<sup>1038</sup> Bosselmann argues that the concept of the trust, more generally, can re-orient the role of governments from one of discretion over the environment, to one of obligation.<sup>1039</sup> This obligation could well be to different actors: rights-holders that include women, children, disabled, marginalised lower castes, and indigenous groups, but also future generations, and non-human natures such as water bodies and ecosystems. Paired with the right to participation, described earlier, the right to water would be re-oriented towards a demand for the public trust that includes an expanded conceptualisation of participatory processes.

Much of the literature around water and the public trust has focussed on expanding the use of the public trust doctrine in water governance. But there is also a need to expand the public trust over different resources that interact with water. As the earlier chapters have argued, water injustices are intrinsically linked to multiple processes. In this context, the right to appropriation (in the spirit of the right to the city) demands an expansion of the public trust to a broader set of 'resources' or processes.

In the Sundarbans, for example, the HRTW would need to include a demand for a public trust over the embankments. As discussed in Chapter 5, the embankments mediate a range of hydro-climatic injustices. The everyday issues around water that people face are tied to the governance of the embankment. Yet the embankment also has significant effects on the stability of the delta and eco-systems. Currently, embankment legislation in India provides the state government with a large amount of discretion over the embankment. A HRTW, in its current framing, demands that a certain amount of clean drinking and domestic water is provided to individuals (namely through the tubewells that exist). Bringing both water and the embankment

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<sup>1037</sup> Section 3.2

<sup>1038</sup> Takacs (n 501).

<sup>1039</sup> Bosselmann (n 1036).

under the commons would further the HRTW. HRTW could then expand to include duties beyond the provision of drinking and domestic water but also its interactions with how the ‘lived environment’ of the embankments in the Sundarbans are governed and provide a stage for different interests to deliberate on how this lived environment is produced. This would provide a route to further hydro-climatic justice.

Beyond resources on the ground, in the context of climate change there is currently a wave of litigation extending the public trust doctrine to the air. This movement originates in the United States of America, where so-called ‘atmospheric trust litigation’ is being litigated in several different states and at a federal level.<sup>1040</sup> While Courts in the US have long recognised the public trust, this has generally been with regard to waterways and wildlife.<sup>1041</sup> However, as commentators have pointed out, the Courts have over the years extended the scope of the public trust as understandings of the environment evolved.<sup>1042</sup> For example, as modern science illustrated the connectivity between surface and groundwater, the Courts extended the public trust to groundwater stating that the public trust "does not remain fixed for all time, but must conform to changing needs and circumstances."<sup>1043</sup> Accordingly, in many states in the US have now started to recognise public trust over the atmosphere. This recent development is promising, particularly as it opens up pathways for greater scrutiny of government decisions that exacerbate climate change.

Drawing from Lefebvre’s original idea of space, it is the idea that such environments are used, managed, shared, distributed and produced through democratic means. An approach that further a right to ‘commoning’ hydro-social

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<sup>1040</sup> The atmospheric case of *Juliana v United States* is an on-going litigation across various different states. The various orders, motions are available on: <http://climatecasechart.com/case/juliana-v-united-states/>

<sup>1041</sup> Mary C Wood and Charles W Woodward, ‘Atmospheric Trust Litigation and the Constitutional Right to a Healthy Climate System: Judicial Recognition at Last’ (2016) 6 Washington Journal of Environmental Law & Policy 633, 654.

<sup>1042</sup> *ibid*; Carolyn Kelly, ‘Where the Water Meets the Sky: How an Unbroken Line of Precedent from Justinian to Juliana Supports the Possibility of a Federal Atmospheric Public Trust’ (2019) 27 New York University Environmental Law Journal 183, 201–202.

<sup>1043</sup> *In Re Water Use Permit Applications* [2000] Hawaii Supreme Court 9 P.3d 409 447.

environments, promotes both a right to appropriation and a solidarity approach. The principle of the public trust is one such way to further commons. Recent efforts to extend the public trust to the atmosphere illustrate the potential for how different aspects of the hydro-social cycle can be reclaimed into a commons system.

#### 7.3.2.2 *Common Heritage of Humankind*

The principle of Common Heritage of Humankind originated in international law in the early 1970s.<sup>1044</sup> It gained prominence through its incorporation in the Law of the Sea Convention<sup>1045</sup> and the Moon Treaty<sup>1046</sup>. Under the common heritage, a resource cannot be appropriated for exclusive use, it must be used for peaceful purposes, its use and access will fall under a common management system and any benefits derived shall be equitably shared and preserved for future generations.<sup>1047</sup> To be clear, this does not mean that the resources held under common heritage are enclosed from use, rather their use is regulated in a way that compels any activities shall be carried out for the benefit of humankind as a whole, and that benefits are shared equitably.

Under international law, common heritage is usually reserved for internationally shared resources, like the seabed, that are outside sovereign territories. Sovereignty is a controversial and central topic to international law and states have permanent sovereignty over their natural resources.<sup>1048</sup> However, the principle of common heritage can still apply to national resources, without fully ceding such sovereignty. For example, under the UNESCO Convention concerning the Protection of the World Cultural Heritage and Natural Heritage, specific resources and sites

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<sup>1044</sup> UN General Assembly, 'Resolution 2749 Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction' (1970) A/RES/25/2749.

<sup>1045</sup> Convention of the Law of the Sea 1982 article 136.

<sup>1046</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies 1979 Article 11.

<sup>1047</sup> Bosselmann (n 1036) 76.

<sup>1048</sup> UNGA, 'Permanent Sovereignty over Natural Resources' (1962) Resolution 1803 (XVII).

located within sovereign states have common heritage status.<sup>1049</sup> ‘World Heritage Sites’ that have been identified and classified as such carry with them obligations on states to conserve and protect them. International assistance is provided for these activities.

Accordingly, it is arguable that freshwater could, at least in part, be treated as common heritage. Cullet argues that the concept of common heritage would provide “an apt starting point to address the global water cycle as an issue which is both of common interest to all states and beyond the control of anyone or any group of states”.<sup>1050</sup> One of the key benefits of the common heritage principle is that it immediately links water from the local to the global level. This is particularly important in the context of climate change. Similarly, commentators have pointed out that common heritage could be used to hydrologically disadvantaged states a legal interest in the global hydrologic cycle.<sup>1051</sup> Others argue that common heritage could provide further scope for holding state parties to account for pollution of water sources.<sup>1052</sup>

As earlier chapters have illustrated, one of the key overarching issues for the HRTW is that it is a body of water law that allows different actors to carry out activities without regard to how this affects other users, the broader water cycle. The principle of common heritage provides a way to re-common hydro-social relations, such that water abstraction in a village in Rajasthan is managed in a way that endeavours to connect it to water use across state and national boundaries. Moreover, the principle can also be used to declare that particular types of water, for example

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<sup>1049</sup> UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage 1975 (1037 UNTS 151).

<sup>1050</sup> Philippe Cullet, ‘Water Law in a Globalised World: The Need for a New Conceptual Framework’ (2011) 23 *Journal of Environmental Law* 233, 245.

<sup>1051</sup> Stéphanie Kpenou, ‘Fresh Water as Common Heritage and a Common Concern of Mankind’ in Mara Tignino and Christian Bréthaut, *Research Handbook on Freshwater Law and International Relations* (Edward Elgar Publishing 2018) 27.

<sup>1052</sup> Feris (n 342) 17.

fossil aquifers, are given special protection in order to protect the hydro-social environments for future generations.

### *7.3.3 Broadening the scope of participation*

Democratic participation in the production of the hydro-social environments is central to re-conceptualising the right to water. Such an approach argues that a HRTW should entail a right to be able to “participate democratically in securing the production and distribution of water for all”.<sup>1053</sup> Of course, participatory approaches to the HRTW are not new. As Chapter Three discussed (section 3.3.5 above), participation is a human rights principle that has become integral to several human rights, including the HRTW, and natural resource governance more generally.<sup>1054</sup> General Comment 15 states that participation needs to be a principle of formulating and implementing national water strategies.<sup>1055</sup> Public participation is also an element of climate change adaptation strategies under the Paris Agreement.<sup>1056</sup> Moreover, in India there has been a general participatory framework through devolved control over local water decisions to local bodies of governance.

However, as previous chapters have shown, this approach has significant limitations that go beyond merely better implementation. In Chapter Five, the case study of the lower Damodar river valley illustrated how inhabitants of downstream areas suffered the impacts of heavy flooding, because of the decisions of the DVC. The ability of the DVC to allocate water and withhold and release water had a profound impact on lives and livelihoods downstream. Communities living downstream have democratic rights in managing local village level water decisions. However, such rights do not extend to a right to participate in the decisions around the dam, which is a highly technocratic, expert-driven exercise. In Chapter 6, it was demonstrated how in the Jaipur District in Rajasthan water is diverted through the

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<sup>1053</sup> Loftus, ‘Water (in)Security: Securing the Right to Water’ (n 253) 355.

<sup>1054</sup> Hellum, Ik Dahl and Kameri-Mbote (n 427) 63–68.

<sup>1055</sup> UN Committee on Economic Social and Cultural Rights (n 274) para 48.

<sup>1056</sup> UNFCCC (n 97) Article 7, paragraph 5.

Bisalpur Pipeline taking water from the Banas River into Jaipur city. Communities living by the river had limited opportunities to participate in the decisions around the reallocation of water to Jaipur. Similarly, as discussed in earlier chapters (section 4.3.3 above), individuals and communities have had limited scope for participation in groundwater governance. While decentralisation of water governance to a village level does provide participatory rights concerning decisions at the local level, this matters very little in a situation where the groundwater has been depleted, and surface water sources have been appropriated.

Furthermore, more general criticisms of participatory governance mechanisms are also relevant here, particularly around caste and gender as outlined earlier. Nevertheless, the right to a more radical conception of participation, as outlined under the right to the city approach, would advocate a more direct “seat the table” for inhabitants. As discussed above (section 7.1.6) in case of Jaipur, this could be direct participation in decisions around water allocation made by the development banks, governments including more on-going governance of the dam and pipeline, effectively, democratising the entire hydro-social environment.

Importantly, the right to participation outlined here, is inextricably linked to a right to appropriation (or a right to a hydro-commons). This is because participation *without* rearranging property relations over water, to ‘re-common’ water, only furthers procedural justice. Participatory governance schemes over natural resources have faced widespread criticism over the last two decades, mainly because they depoliticise environmental governance and do not challenge existing power structures.<sup>1057</sup> For example, in India, participatory water schemes in the water sectors have excluded the landless (as water rights are linked to land rights) thus further entrenching injustices.<sup>1058</sup> The case of the landless (often intrinsically linked to gender and caste) is important, because they represent one of most vulnerable populations

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<sup>1057</sup> Dewan, Mukherji and Buisson (n 788).

<sup>1058</sup> Priya Sangameswaran, ‘Water Rights for the Landless in Western India: From Pani Panchayat to Water Entitlements’ (2009) 21 *European Journal of Development Research* 195; Seema Kulkarni, ‘Women and Decentralised Water Governance: Issues, Challenges and the Way Forward’ (2011) XLVI *Economic & Political Weekly* 64.

during a drought or a flood.<sup>1059</sup> Even where included, landless communities face barriers of effective participation since there is a large material inequality in the rights held by landowners, as well as broader structural power relations (such as between caste and gender).

However, a right to appropriation puts forward an approach that would argue for a re-commoning of water bodies themselves that involves a fundamental restructuring of hierarchical power relations over water. In other words, furthers distributive justice, through redistributing unequal control over water. Ultimately, combining with a principle of solidarity, a broader right to participation puts forward an idea that all inhabitants of a hydro-social environment have a right to collectively participate the democratic decisions over how these environments are used, shaped and produced. So, for example, landless labourer in and the large landowner have the same and equal right over how groundwater is abstracted in an aquifer, or embankment is maintained. Such a fundamental shift in social relations over water is crucial for the human right to water in the context of hydro-climatic change. It signals a deliberative process for the HRTW that ultimately has scope also for non-human perspectives to be drawn in.

## **7.4 Summary**

The approaches above are not exhaustive in the ways the HRTW should be transformed and reimagined in the context of hydro-climatic injustice. Rather, they are some suggestions of ways forward, particularly in the Indian context. It is important to remember that these reforms are unlikely to come from top-down legislative reforms or judicial orders. Nor would such an approach be ideal. Rather, they depend on social groups, civil society activists, academics, and other actors to deliberate alternative imaginations. Ultimately, the content and scope of the rights, like hydro-climatic (in) justices, is authored through contested processes in occurring in different contexts. This chapter provides some suggestions of ways the authorship

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<sup>1059</sup> Kulkarni (n 1058); Abdur Rafique, 'Floods, Poverty and Seasonal Migration' [2003] *Economic & Political Weekly* 943.

could come ‘from below’.<sup>1060</sup> Finally, this chapter has provided approaches that examine water through a broader paradigm. As discussed, the HRTW in its current framing has been focussed on providing a specific quantity of water. The approaches suggested above shift away from this narrow focus, which has been shown to be inadequate in the context of hydro-climatic change, towards recognising what Bond terms the “eco-social” value of water.<sup>1061</sup>

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<sup>1060</sup> Balakrishnan Rajagopal, *International Law from Below: Development, Social Movements and Third World Resistance* (Cambridge University Press 2003) 271.

<sup>1061</sup> Bond (n 83) 48.



# CHAPTER 8.

## Conclusion

Hydro-climatic change does, and will continue to, produce many questions for the realisation of human rights. This thesis has asserted that the relationship between the HRTW and climate change needs be conceptualised through analysing the various processes that interact in producing rights issues and injustices. In other words, climate change is not merely an external factor that has a linear (negative) relationship to the HRTW. Rather, as the preceding chapters have demonstrated, a web of interrelated processes co-produce rights issues and injustices.

This concluding chapter briefly outlines the limitations of this research, before recapping the main conclusions and findings. It then reflects on some of the key themes around justice and rights. Finally, it outlines the contribution of this thesis to the field and the implications and of the research.

### **8.1 Thesis Conclusions**

There were two main arguments and conclusions from the research. First, that the HRTW faces several issues of justice in the context of hydro-climatic change. Law and policy, together with several other processes, contribute toward producing sites of hydro-climatic injustice. Second, that the HRTW, and the laws that underpin its realisation, need to be reformed, reimagined, and reconceptualised in the context of how water, climate, and society interact. A narrow approach to the HRTW that centres upon providing a certain quantity of water is generally not able to respond to the multifaceted dimensions of how people experience water and climate stress. This point was demonstrated in detail through the case studies within the thesis.

### **8.2 Summary of main arguments in relation to research questions**

The first research question outlined in Chapter One (section 1.3.1 above), asked: *(i) How do ideas of 'justice' interact with how the human right to water is realised in a climate context?*

Accordingly, Chapter Two outlined a framework for hydro-climatic justice that was utilised in the rest of this thesis. The framework for hydro-climatic justice outlined divided justice into three elements: (i) normative claims of justice; (ii) evidence of (in)justices; (iii) processes that drive (in)justices. The first element assists with making claims of how things should be, as well as identifying injustices. The second element evidences the injustice, demonstrating how a particular situation gives rise to socio-ecological harm or inequality. Chapter Five and Six provided evidences of injustices in the case studies. The third element, concerns process or why things are how they are. It was stated that, using political ecology, we could interrogate the role of law in society and its interactions with social, political, economic and ecological processes.

It was also argued in Chapter Two that such an approach is particularly useful in examining the relationship between HRTW in the context of climate change. As Kotze has pointed out, human rights and law have never had to grapple with issues as existential as the fundamental transformations that are required in the current moment.<sup>1062</sup> The approach of interrogating the realisation of the HRTW through a hydro-climatic justice lens allowed the thesis to tease out the processes that create injustices and human rights breaches, such that we can then begin to imagine the transformations that rights, and the laws that underpin human rights, need to undertake.

The second research question outlined in Chapter One (section 1.3.1 above) asked, *(ii) to what extent is the human right to water, and the laws and policies that underlie its realisation, able to meet the challenges of climate change from a justice context?*

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<sup>1062</sup> Kotzé, 'Reflections on the Future of Environmental Law Scholarship and Methodology in the Anthropocene' (n 117) 146.

This question was answered in three parts. First, Chapter Two outlined the justice context used in this research, as above. Second, Chapter Three and Four mapped the legal framework at both an international and domestic Indian level for the HRTW and the laws that underpin it. Third, Chapter Five and Six outlined four case studies that examined the relationship between HRTW and hydro-climatic justice.

Chapter Three analyses the different dimensions of the HRTW through the lens of hydro-climatic justice. First, it was outlined that the HRTW had widespread recognition around the world, including in India. However, there were significant challenges with how the HRTW was interpreted and what aspects were recognised under different laws and policies. For example, although people use water for several basic uses and it has a vital role in the lives of humans and non-humans, what uses are recognised under the HRTW is contested. Chapter Three argued that there needed to be for an approach that recognised multiple uses that included at the very least drinking, domestic use, sanitation, subsistence livelihoods, and ecosystems use. In the context of climate change, this was important because of the way climate change materialises. However, although there is scope for such an approach, under both domestic and international law, there were several gaps because many countries, such as India, had not adequately put forward legislation or policy that recognised this. Instead, the focus has primarily been on drinking water and domestic water, often led by international policy from international organisations. While noteworthy in itself, such an approach did not appropriately recognise or respond to the range of everyday hydro-climatic injustices that were felt by individuals and communities. Chapter Three went on to analyse specific elements of the HRTW from a hydro-climatic justice lens including inequality, caste, gender, privatisation, participation and extra-territorial rights.

Building on the first two chapters, Chapter Four then focused on the Indian context. Chapter Four mapped the law, policy and institutional framework for realising the right to water in India. The chapter outlined that India had a fragmented statutory and policy framework, creating numerous challenges for the realisation of the HRTW. For instance, there is no overarching legislation for climate change or water in India. There is thus a myriad of laws relating to water at different levels

(Union or State), often relating to different uses or types of water, from both pre and postcolonial eras. As such, a tension exists because different principles, approaches, and conceptual understandings. As laws are from different periods, there are many contradictions. For instance, while the Courts have been influential in introducing several environmental and human rights principles into existing law (such as the polluter pays principle and the public trust doctrine) the extent to which these have translated into legislation and policy has been limited.

Chapter Five and Six then specifically examined four case studies across two states in India. The case studies illustrated the way multiple processes, including the law, hydro-climatic processes, economic policies, institutional and social power structures, co-produce differentiated hydro-climatic injustice. Several conclusions flow from these chapters, including:

- (i) *Incoherence, contradictions and gaps in the legal framework:* As outlined in Chapter Four, water and climate issues in India are governed through a myriad of laws, policies, guidelines, administrative and judicial orders. The case studies illustrated how, despite recognition of the HRTW and principles of environmental law in the legal and policy framework, significant gaps exist in the broader integration into law and policy. The case studies examined a number of laws and policies analysing how the HRTW, though it may exist under the law, it sits alongside several other instruments that can contradict and conflicts with its realisation. As the case studies illustrate these ‘more specific’ laws and policies can have a much more significant influence in mediating the HRTW and producing sites of hydro-climatic injustice.
- (ii) *Top-down institutional mechanism and the lack of meaningful democratic participation:* The two case studies also illustrated how particular government departments have influential and authoritative roles. For example, in Chapter Five, it was emphasised how the DVC and the role of irrigation department was particularly authoritative, lead primarily by a small group of actors who had a large role in mediating hydro-climatic justice across the region. It was also illustrated how narrow forms of participation, such as those examined in

relation to coastal zone management, had a limited impact in fostering a rights-based approach.

- (iii) *The need to look beyond drinking water scarcity:* While drinking water scarcity issues were prevalent in all the case studies, it was also highlighted that there was a need to look beyond drinking and domestic water that had been the primary concern of policy makers. In Chapter Six, the case of the peri-urban villages of Jaipur illustrated the scale of hydro-climatic injustices and further problematised how the focus on drinking water was partly responsible for rural to urban water transfers.
- (iv) *Colonialism, Capitalism and the HRTW:* As Chapter Two also mentioned, two important processes that were analysed in this thesis, in their role in producing and (re)producing injustices were colonialism and capitalism. This can be seen in two ways in particular:
  - a. *Discourses and ideas of water, land and society:* Ideas, originating from colonial foundations of water law, around the relationship between land, water, society, and their embeddedness in law and policy, have an important effect on hydro-climatic justice today. In Chapter Five, the two case studies illustrated how the regions were built around separation between land, water and society, when in fact the material relationship is much more intertwined. Today, the law continued to reflect such a separation and, as a consequence, the state's policy fixes are often geared towards supply-side answers to water scarcity, flood management, and other technocratic means.
  - b. *Water grabbing and accumulation by dispossession:* The relationship between the HRTW, privatisation and climate change was analysed in several case studies. In this context, privatisation was demonstrated not through the sale of public utilities, as is often discussed in relation to water, but rather the reallocation of water due to the economisation and

marketisation of water. In Chapter Five, the demand for hydropower and its economic value, coupled with a legal framework that allowed the DVC a large amount of discretion, resulted in allocation decisions that increased HRTW issues downstream. Similarly, in Chapter Six, the marketisation of water incentivised rural to urban water transfers. Both case studies demonstrate that HRTW issues and vulnerability to climate change (of downstream communities in the Damodar, and rural communities in Jaipur) are not natural, inevitable, or driven purely by extreme weather conditions, but rather are tied to policies and laws that reduce water to its commercial value.

- (v) *The role of international and non-state actors:* Chapter Five and Chapter Six also highlighted the role of international policies and non-state actors. As was discussed, the influence of international non-state actors, such as regional development banks, NGOs, as well as their norms, procedures and standards, were significant in the realisation of the HRTW. The role of such transnational norms had, arguably, a much more significant influence than state-led international and human rights law. For example, the HRTW had not been integrated into disaster management legislation and policies, drinking water policies, or other instruments analysed in Chapter Five and Six. However, many principles from international policies, norms and guidelines (such as conceptualising water as an economic good or the minimum guidelines for disaster responses under NGO internal guidelines) had a much more significant influence, had been incorporated into policies and had a significant influence ‘on the ground’.

Finally, Chapter Seven outlined some potential ways forward for the HRTW. It was argued that the HRTW needs to incorporate an approach that looks at the multiple uses of water, not just focus on drinking water. Furthermore, the right to the city framework and solidarity rights approach provided ways to reconceptualise the

relationship between water, climate and society. It was argued that the HRTW needs to transform from (its current framing) as a right to a specific quantity of water into a right to transform hydro-social environments. While there are many ways this reimagination and transformation can be done, that may be specific to different local, national and international contexts, the principles discussed in this chapter were the public trust doctrine, common heritage of humankind, and participation. It was argued that these principles and rights needed to be approached together, in other words, providing for participation without a broader ‘commoning’ would not be furthering justice and the HRTW.

### **8.3 Reflections on Hydro-Climatic Justice**

While Chapter Seven reflected on the human right to water and suggested several ways to broaden the debate, a few salient points can also be made concerning hydro-climatic justice and its relationship to human rights. The relationship between human rights and climate change in this research was examined through the lens of hydro-climatic justice as was outlined in Chapter Two. Several distinct challenges specific to water and climate issues were also outlined, such as the materiality of water as a flowing resource, the scale and causes of climate change and fragmentation of agency. Moreover, the importance of understanding the different processes that drive injustices was highlighted. This provided a relational and contextual understanding of how hydro-climatic change materialises on the ground. The research was able to tease apart the operation of the law, power of different actors, ecological, political and economic processes that influenced how people experienced rights-issues.

Although in Chapter Two the distinct challenges of water and climate were outlined, the approach can be utilised to examine other specific rights. For example, the right to food and its relationship with climate change is a critically important issue.<sup>1063</sup> However, in order to analyse the web of inter-related processes that mediate

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<sup>1063</sup> Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (n 95) 80–82.

this relationship (such as distributive issues, the influence of global food corporations, and land rights), an approach that builds a justice framework drawing on both climate justice and food justice could be utilised.<sup>1064</sup> Such an approach avoids the tendency to naturalise or universalise the impacts of climate change and human rights.

The justice approach used in this thesis also emphasised the role of privatisation, neo-liberalism and strategies of accumulation by dispossession. The literature on ‘human rights and climate change’ has generally under-represented this phenomenon.<sup>1065</sup> This is an important point, particularly as many of the suggested approaches to promote and enhance human rights in the context of climate change, such as adaptation and mitigation activities, will lead to further private sector involvement. The approach used in this research examined this through the accumulation by dispossession lens deliberately to emphasise the deliberate and structural nature of how hydro-climatic injustices materialise. In other words, rather than arguing that there were negative ‘externalities’ (rights-breaches) arising from market-led urbanisation, hydropower and coastal development, the theory of accumulation by dispossession argues that these are in fact integral to processes of capital.<sup>1066</sup>

The concept of the Anthropocene, discussed in Chapter One (section 1.1.2 above), provides a lens through which an individual drought or a flood cannot be seen out of its global context, or as separate from the social connections to the environment. This thesis has demonstrated how the lens of the Anthropocene must also be viewed through a framework of justice, as Schlosberg has also pointed out.<sup>1067</sup> While the Anthropocene encompasses us all, its production materialises differentially across space and time. As the preceding chapters have illustrated, paying attention to

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<sup>1064</sup> On food justice see, for example: Carmen G Gonzalez, ‘Food Justice: An Environmental Justice Critique of the Global Food System’ in Shawkat Alam and others (eds), *International Environmental Law and the Global South* (Cambridge University Press 2015).

<sup>1065</sup> Albeit some have highlighted the role of the corporation: e.g. Gear, ‘Human Rights and the Environment: A Tale of Ambivalence and Hope’ (n 101).

<sup>1066</sup> Harvey, *The New Imperialism* (n 411) 137–182.

<sup>1067</sup> Schlosberg, ‘Disruption, Community, and Resilient Governance: Environmental Justice in the Anthropocene’ (n 49).



local-to-global processes and power structures serve as an important tool to understanding how human rights can be protected and realised.

Finally, as the previous section highlighted, the case studies above have also demonstrated the on-going effects of colonial and post-colonial ideas around land, water, climate and society. These epistemologies of dualism, separation, and domination over the environment pervade and mediate who has access to water and how particular hydro-climatic processes materialise. A common element to these ideas is not just a dualism between humans and non-humans (such as with water, ecology or the climate), but also between humans through hierarchies of gender, caste, land ownership, expertise and institutions. As Grear has argued, the climate crisis is a crisis of human hierarchy.<sup>1068</sup> These epistemological assumptions continue to pervade law and policy today, in particular through discourses around naturalised scarcity and depoliticised impacts of climate change.<sup>1069</sup> Adelman has highlighted how ecological and climate justice is impossible without epistemic justice.<sup>1070</sup> As Kotzé writes, new epistemic frameworks are required for human rights to contend with the climate crisis and Anthropocene.<sup>1071</sup>

## 8.4 Research Contribution and Implications

Finally, this thesis has three main contributions that were outlined in Chapter One (section 1.3.6 above): (i) the research contributes towards broadening the conceptualisation of the HRTW in the context of hydro-climatic change; (ii) the research contributes to the emerging literature on water and climate change law in India, at a much-needed time. While the thesis analyses several areas of law through examining interactions, the research provides scope for future legislative and policy reforms; (iii) the research contributes to the literature on human rights and climate

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<sup>1068</sup> Grear, 'Towards "Climate Justice"?' (n 101) 110.

<sup>1069</sup> Swyngedouw, 'Depoliticized Environments: The End of Nature, Climate Change and the Post-Political Condition' (n 199).

<sup>1070</sup> Sam Adelman, 'Epistemologies of Mastery' in Anna Grear and Louis J Kotzé (eds), *Research Handbook on Human Rights and the Environment* (Edward Elgar Publishing 2015) 26.

<sup>1071</sup> Kotzé, 'The Anthropocene, Earth System Vulnerability and Socio-Ecological Injustice in an Age of Human Rights' (n 101).

change, combining theoretical analysis of the relationship with grounded, empirical and legal analysis through the case study of India, a country with multiple hydro-climatic issues in the Global South.

The research illustrates a need to broaden the horizon for human rights and climate change literature, beyond the silos of human rights and environmental law and to draw in and examine geographic, economic and political disciplines through the socio-legal approach adopted. At a practical level, the research in this thesis also has policy relevance, in particular through the analysis in Chapter Three and Four that illustrate gaps in the law and policy frameworks. The research has also illustrated why it is important to analyse domestic law, as well as highlighting the importance of transnational and international soft law policies and instruments. The issues outlined throughout the thesis, more generally, also have relevance to research and policy on the HRTW beyond India, providing scope for other jurisdictions, that have similar legal framework, such as those in South Asia.

# APPENDIX 1

## Select List of Interviews

### Interviews in West Bengal

Interviewee Details	Place of Interview	Date of Interview
Additional District Magistrate	Bardhamman, West Bengal	24 January 2017
District Disaster Management Officer	Bardhamman, West Bengal	24 January 2017
District Land Records Officer, Minor Mineral, DLLRO	Bardhamman, West Bengal	17 March 2017
Executive Engineer, Irrigation Department (DVC)	Bardhamman, West Bengal	21 March 2017
Executive Engineer, PHED (West Bengal)	Asansol, Bardhamman, West Bengal	29 March 2017
Executive Engineer, PHED (West Bengal) (Mechanical Division)	Asansol, Bardhamman, West Bengal	29 March 2017
Executive Engineer, PHED (RCFA II)	Asansol, Bardhamman, West Bengal	29 March 2017
Water Engineer, Asansol Municipal Corporation	Asansol, West Bengal	29 March 2017
Board Member, Sankalp (NGO)	Salanpur, Bardhamman, West Bengal	17 May 2017
Project Officer, Sankalp (NGO)	Salanpur, Bardhamman, West Bengal	17 May 2017
Head of Sundarbans Programme, WWF India (NGO)	Kolkata, India	12 June 2017
Head of Livelihoods, PRASARI (NGO)	Kolkata, India	12 June 2017
Project Leader (Sundarbans), PRASARI (NGO)	Sandeshkhali II, (Sundarbans), West Bengal	16 June 2017
Block Development Officer	Barjora, Bankura, West Bengal	27 June 2017
Group interview and observation post-flood	Pingrui and Kuldiha, Bakura,	28 July 2017

	West Bengal	
Junior Engineer/Facilitator, PHED (West Bengal)	Mousini Island, West Bengal	23 August 2017
Group interview with female village inhabitants, Balikhala Beach,	Mousini Island (Sundarbans), West Bengal	23 August 2017
Group interview with female village inhabitants, Namkhana	Mousini Island (Sundarbans), West Bengal	23 August 2017
Group interview with female village inhabitants, Sandeshali	Jelia Khali, Sandeshkhali, West Bengal	23 August 2017
Field Officer, Gosaba, PRASARI (NGO)	Gosaba (Sundarbans), West Bengal	27 August 2017
Field Officer, Bali 2, PRASARI (NGO)	Gosaba (Sundarbans), West Bengal	27 August 2017
Group interview with male village inhabitants	Gosaba, West Bengal	27 August 2017
Village Pradhan	Shombunaga, Gosaba, West Bengal	28 August 2017

### Interviews in Rajasthan

Interviewee Details	Place of Interview	Date of Interview
Executive Engineer, Pollution Control Board	Jaipur, Rajasthan	27 June 2016
Executive Director, Jal Bhagirathi Foundation	Jaipur, Rajasthan	20 June 2017
Executive Director, PHED (Rajasthan)	Jaipur, Rajasthan	21 June 2017
Director of Regional Office, Regional Director of Central Ground Water Authority	Jaipur, Rajasthan	21 June 2017
Executive Engineer, Water Resources Department	Jaipur, Rajasthan	22 June 2017
Assistant Engineer, Regional Office of Central Ground Water Authority	Jodhpur, Rajasthan	22 June 2017
Field Engineer, Jal Bhagirathi Foundation	Jodhpur, Rajasthan	23 June 2017
Project Officer, Jal Bhagirathi Foundation	Jodhpur, Rajasthan	23 June 2017
Additional District Magistrate	Jodhpur, Rajasthan	25 June 2017
Director, School of Desert Sciences	Jodhpur, Rajasthan	25 June 2017
Chief Scientists, Central Groundwater Authority	Jodhpur, Rajasthan	26 June 2017
Scientist, Integrated Watershed Management Programme, Ministry of Water Resources, Rajasthan	Jodhpur, Rajasthan	26 June 2017

Project Manager, Gravis (NGO)	Phalodi, Jodhpur District, Rajasthan,	27 June 2017
Group interview with several women village inhabitants	Phalodi, Jodhpur District, Rajasthan	27 June 2017
Senior Hydrologists, Central Groundwater Authority	Jaipur, Rajasthan	5 September 2017
District Officer, BDO Office	Chaksu, Jaipur, Rajasthan	5 September 2017
Executive Director, Centre for Community Economic and Development Consultants Society (CECOEDECON) (NGO)	Chaksu, Jaipur Rajasthan	6 September 2017
Project Manager, Centre for Community Economic and Development Consultants Society (CECOEDECON) (NGO)	Jaipur, Rajasthan	6 September 2017
Group interview with several women village inhabitants	Bapugram Village, Chaksu	6 September 2017

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