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The Human Right to Water and Climate Change in South Asia: A Review of Law and Policy Challenges

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Abstract: This article reviews and analyses on the legal and policy debates around the Human Right to Water in the context of the increasing impacts of climate change in South Asia. The South Asian region faces a range of climate-related water issues, with increasing threat of water related conflicts at both within and between countries. While much progress has been made to improve water access across the region, a broad range of issues around fulfilling basic water needs are faced daily by millions of people. There are critical challenges to address such water inequality as well as conserving and protecting water sources, which are integral to meeting future needs. The human right to water has been recognised across South Asian countries, in some cases much before its acceptance at the international level. However, many questions remain about its scope, content, and realisation, as well as its underlying legal framework. This article reviews these questions, and its intersections with climate related impacts. These include issues of intersectoral and transboundary water allocation, groundwater use and conservation and ecosystem protection. The article goes on to analyse how the critical perspectives on the human right to water, including scholarship that advocates a transformation of the framing of the right, can be given effect in the region.

Keywords: water security; water law; climate change; South Asia; groundwater; water conflict

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Introduction

Water is vital for life, health, and supporting livelihoods and developmental needs in South Asia. Despite some progress, millions of people in the region still lack access to clean water, and water challenges are intertwined with development and climate change (UN Water 2020; UNICEF 2015; Water Aid 2019b). South Asia is particularly vulnerable to climate change, with Bangladesh, Nepal, and Pakistan among the top ten countries affected by extreme weather events in the past two decades (Eckstein et al. 2019). Monsoon rains cause frequent flooding, while drought is responsible for the highest number of deaths and economic losses among all climate-related hazards (Davis and Hirji 2019; NITI Aayog 2018). Inadequate laws and poor governance have led to declining groundwater levels, leaving the region without an important water 'buffer' during droughts (Cullet, Bhullar, and Koonan 2017).

Water use has intensified due to rapid urbanisation, industrialisation, population growth, and technological advancements, leading to increasing water conflicts between different communities, sectors, regions, and countries. Inequality is a major feature of South Asia. Wealthier residents in major cities often continue to have uninterrupted access to water during drought conditions, while the poor struggle to meet their basic needs (Water Aid 2019a, 4). Urban sectors draw water from rural areas, and this often leads to conflicts over water uses, including protests from communities who have lost out (Bhaduri 2015; Punjabi and Johnson 2019). Some of these protests, on occasion, have even turned violent. For instance, in Rajasthan, India, protests over a dam that diverted water to the capital city saw five farmers being shot protesting the diversion (Bhaduri 2015).

While climate change is one driving factor, a range of intersecting water issues such as industrial overuse of water, pollution, fuel water inequality and deprivation in the region. Legal and political frameworks are central to how water is used, allocated, distributed, and conserved, which is critical in driving the current crisis (S. H. Shah and Narain 2019; Cullet, Bhullar, and Koonan 2015). The current economic model based on resource exploitation and market-led growth shows little sign of changing.

Across South Asian countries, a robust jurisprudence recognising social and environmental rights has developed over the last 30 years (Razzaque 2004). The Human Right to Water (HRtW) has been widely acknowledged both internationally and domestically, and its realisation is critical to meet the water needs of people and ensure that water sources are protected and conserved (Brunner et al. 2015; Schiel, Langford, and Wilson 2020). The legal and policy framework operating

to implement the HRtW in South Asian countries is examined in this paper.[2] Justice issues should be at the centre of discussions related to rights, laws, and policies concerning HRtW, given the high levels of poverty and inequality in the region. Water issues interlink with other rights such as the right to a healthy environment, food, health, and sanitation. While these rights could be considered together, as they reinforce each other mutually, this article focuses on the HRtW.[3]

Water and climate change are closely interconnected, and these connections are increasingly relevant in law and policy discussions. Freshwater plays a central role in adaptation policy setting. Under the Paris Agreement, countries submitted Nationally Determined Contributions (NDCs) outlining their mitigation, adaptation and loss and damage related actions. More than 80% of NDCs that included a specific section on adaptation, contained actions related to freshwater (UNFCCC 2021, 32). All the NDCs of South Asian countries contain specific water components (Government of India 2022; Government of Nepal 2020; Government of Pakistan 2021; Ministry of Environment and Forests (Govt. of Bangladesh) 2021; Ministry of Environment (Sri Lanka) 2021). Water is thus central to climate change adaptation. More broadly, water is an essential connecting factor for achieving the Sustainable Development Goals (SDGs) (Douville et al. 2022; Miralles-Wilhelm 2022; Rockström et al. 2023). Failure of laws and policies that concern water, to adapt to climate change, not only puts SDG 6 (the water goal) at risk but also jeopardises most of the other SDGs, which are linked in one way or the other to water (Campos, Olago, and Osborn 2022).[4] The links between climate and water, from a rights-based perspective, need further integration and clarity. In this context, in 2022, the UN Special Rapporteur released a three-part thematic report specifically on the HRtW and climate change (UN Human Rights Council 2022).

Despite the clear acknowledgement of water and climate issues, law and policy reforms have usually lagged behind (Miralles-Wilhelm 2022). This article aims to contribute to this crucial ongoing discussion by highlighting the connections between the HRtW and climate change in South Asia, thus helping to fill the existing gap. This article reviews the legal and policy aspects of the HRtW and its implementation in South Asia, focusing on the increasing impact of climate change. It provides an overview of the key issues related to the HRtW in the region, connecting critical scholarship to legal principles and practices on the ground. The review is not exhaustive

[2] For the purposes of this article only, I use the term 'South Asia' to mean Bangladesh, India, Nepal, Pakistan and Sri Lanka.

[3] This article considers the 'human right to water' as a standalone right here, without attaching 'sanitation' which is often spoken of jointly (but has now developed into its own right separately).

[4] Most of the other SDGs depend heavily on water such as food (SDG 2), good health and wellbeing (SDG3), climate (SDG 13), energy (SDG 7), industry (SDG 9), sustainable cities (SDG 11), and responsible consumption and production (SDG 12). SDGs 14 and 15 concerning life on land and the oceans depend on the integrity of the planet's hydrological cycles.

but aims to summarise the themes arising from the literature and offer practical avenues to advance the HRtW in the context of climate change.

There are four sections in the article. Section one begins by explaining the linkages between access to water, climate change and human rights through an environmental justice lens. Section two then analyses the development and recognition of the HRtW at the international level and domestic level in South Asia, and the content and scope of the right. Section three then examines some of the key issues that arise across the region. Importantly, this section explores the role of water laws and policies that underpin the right, critically analysing the gaps and challenges. Section four goes on to examine how the broader literature around the HRtW, including scholarship that advocates a transformation of the framing of the right, can be given effect in the region via commons-based principles that shift water away from being seen as an 'economic good' or a resource capable of private ownership.

1. Climate Change and the Right to Water: Questions of Power and Structural Conditions over Physical Scarcity

Considerable progress has been made in providing individuals and households access to water over the past two decades. Nevertheless, the overall situation remains highly concerning. The data extracted from the WHO/UNICEF Joint Monitoring Program (2020) is presented in the table below. From a population standpoint, India stands as the country with the largest number of people (163 million) globally lacking access to clean water (Water Aid 2018). While the statistics indicate advancements in water access, they also serve as a stark reminder of the extensive work that remains to be done. Additionally, statistics alone fail to address vital questions necessary for understanding the relationship between climate change and the HRtW. This necessitates further attention to two approaches: 'water security' and 'environmental justice.'

Table 1: Access to Water in South Asia by Country (UNICEF/WHO 2020)

Country	Access to Basic Water[5]	Access to Safe Water[6]
Pakistan	54.3%	36%
Bangladesh	39.2%	58.5%
India	90.5%	n/a
Nepal	72.5%	17%
Sri Lanka	92.2%	n/a

[5] Basic Water is defined as being able to use a protected community source or piped water with a total collection time of 30 minutes or less for a round-trip, including queuing.

[6] Safe Water is defined as access to drinking water from an improved water source that is accessible on premises, available when needed and free from fecal and priority chemical contamination.

Water security approaches are notable for contributing to understanding water issues beyond simple scarcity-based frameworks (Cook and Bakker 2012; Zeitoun et al. 2016; S. H. Shah 2021). While there are a number of approaches taken in the literature, an 'integrative approach' towards water security has developed to highlight how water challenges are a product of the complex interplay of social, political, economic and cultural factors (Ahlers and Zwarteveen 2009; Zeitoun et al. 2016; Jepson et al. 2017; Loftus 2015; Malekian, Hayati, and Aarts 2017; Wutich et al. 2017). The integrative approach goes beyond the focus on simply increasing the supply of water. Zeitoun and others (2016, 149) argue that the approach grapples with the 'complexity' of water-society challenges, recognising context-specific diversity in such challenges, while maintaining a focus on the most marginalised. The integrative approach to water security, increasingly refers to governance and practice to mitigate and prevent unacceptable water-related risks for food, livelihood, health, ecological and personality security – all aspects of 'human security' (Harris et al. 2018, 343). This broader perspective becomes particularly valuable when analysing the relationship between water security and climate change.

Water insecurity arises from multiple drivers, with climate change being just one among them (Savelli et al. 2023; Grasham and Neville 2021; Taylor 2014). While climatic changes poses complex questions for water security, socio-political processes – underpinned by governance structures, institutions, policies, and laws – are central component to analysing the relationship between climate and water security (Grasham and Neville 2021; Roth et al. 2019). Integrative water security approaches have shifted the focus from overall physical water scarcity to a more comprehensive analysis of the socio-political and economic dimensions.

Environmental justice approaches complement the literature on water security by drawing our attention to distributional, procedural, and social justice factors that underpin the use and conservation of water (Kuehn 2000; Boelens, Perreault, and Vos 2018; Harris et al. 2018; Sultana 2018b). While water security literature highlights the importance of social and institutional contexts that water is managed, environmental justice frameworks go further to focus on *why* some people have water and some do not. This pivot is important because physical sciences and statistical analysis do not answer many vital questions that are important from a human rights perspective. Aggregated statistics around water access can mask inequalities and struggles 'on the ground' (Rodina 2016). As climate change materialises differently for people, depending on their social, political and economic positions, an over-emphasis on the physical impacts of climate change can be problematic where it leads to merely technical and managerial policy 'fixes' that do not

transform the underlying structures that produce inequality and injustice (Nightingale et al. 2020; Taylor 2014; Eriksen, Nightingale, and Eakin 2015).

A central focus is on relationships of power and the structural conditions that underlie HRtW issues. Indeed, water issues are primarily about power relations and distribution of water, rather than any overall physical scarcity of water (Roth et al. 2018; Sultana 2018b; Zwarteveen and Boelens 2014). The power to decide, control, allocate and manage water is held unequally. Such power is also often determined by intersecting relations of gender (Sultana 2018a; Ahlers and Zwarteveen 2009), caste (Behl and Kashwan 2022), and class (Mehta et al. 2019; Sugden et al. 2014; Krishnaraj 2011). This influences how the HRtW in realised unevenly and highlights the complex structural reasons for such inequality.

For instance, the phenomena of rural out-migration, primarily by male household members across South Asia, is partly linked to climate change. Women, who remain behind in the household, have a heavier responsibility to oversee water infrastructure and fulfill household water requirements (S. Ahmed and Eklund 2021; Sugden et al. 2014). The gendered vulnerability to climate change in this scenario is also influenced by the intersection of class and caste (Sugden et al. 2014). Women belonging to higher castes, who possess greater resources, can take advantage of emerging opportunities, adapt to changes, and shield themselves from climate-related shocks. Women from marginalised classes and castes lack such choices and face greater limitations in dealing with the effects of climate change (Sugden et al. 2014, 268–69). It also opens up opportunities for further water-related accumulation for more powerful groups and driver further relations of dependency and marginalisation for others (Taylor 2013, 2014). The example demonstrates how the realisation of the HRtW, in a climate context, is uneven and related to the structural factors that sustain and perpetuate water insecurity.

Issues of justice and injustice are shaped by the political economy of water and the role of the state and capital. The HRtW gained traction in the 1990s, while neoliberalism was deepening worldwide, including in South Asia. Two competing visions of water arose: i) water as an 'economic good', promoted by multinational companies and international financial institutions; and ii) water as a social, cultural and ecological 'good', that was fought for by activists, NGOs, local communities and indigenous peoples (Cullet and Madhav 2009; Shree 2020). This division has been critical to understanding the different debates around the HRtW.

In summary, the relationship between HRtW and climate change necessitates engagement with concepts of water security and environmental justice, that draw our attention to the multiple

drivers of water insecurity and the differentiated water-related impacts of climate change. The next two sections use this framing in its discussion of various issues related to the HRtW in the South Asian context.

2. Recognition, development, scope, and content of the right to water

Over the last four decades, the HRtW has been widely recognised under international and domestic law. This section analyses the development and recognition of the HRtW at the international and domestic level in South Asia. It then goes on to explore certain contentious aspects of the scope and content of the right, relevant to the realisation of the right in South Asia.

2.1. International and domestic recognition and development

The Human Right to Water was not explicitly recognised in the provisions of the Universal Declaration of Human Rights, or the two major international human rights treaties - International Convention on Economic Social and Cultural Rights (ICESCR), or International Covenant on Civil and Political Rights (ICCPR). Water was considered in the drafting process of Article 11 on the "right to an adequate standard of living", under ICESCR, however was not included in the final version of the ICESCR (Craven 1995, 25, 291–93; Gleick 1998, 490–91).

The first explicit articulation of a right to water, as a comprehensive stand-alone right, at the international level was in 1977 at the UN Water Conference in Mara Del Plata. A key resolution of the Conference was that "All peoples…have the right to have access to drinking water in quantitates and of a quality equal to their basic needs" (UN Water Conference 1977, 66). While this was not a treaty, and not legally binding, many scholars have noted the significant of this statement. Leo Heller (2022, 19)and Sharmila Murthy (2013, 92) frame it as the 'genesis' of shift in the discourse around the right to water. Peter Gleick (1998, 493), similarly, says it signified a 'second wave' of state practices in a transition towards an explicit right to water. Indeed, a key output of the conference was the period 1981-90 was declared to be the International Drinking Water Supply and Sanitation Decade (IDWSSD).

In terms of international treaties, however, it was recognised only in specific contexts, in relation to particular categories of persons, under the Convention on the Elimination of Discrimination Against Women in 1979, the Convention on the Rights of Child in 1989 and the Convention on the Rights of Persons with Disabilities. In addition, various soft law documents during this time were increasingly recognising the HRtW. For instance, Agenda 21 of the United Nations Conference on Environment and Development in 1992, (the 'Rio Summit'), referred to

as 'the Programme of Action for Sustainable Development', endorsed the report of 1977 at the UN Water Conference in Mara Del Plata. Perhaps one of the most significant documents however was the output of the International Conference on Water and the Environment (1992) in Dublin, that put forward a statement of four key principles that became influential in the water sectors. The Dublin Principles, as they came to be known, stated under principle 4 that 'water has an economic value in all its competing uses and should be recognized as an economic good' and that within this principle it is 'vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price' (International Conference on Water and the Environment 1992) . The Dublin Statement was not produced through inter-governmental negotiation; thus, it is not an international law instrument per se. Nevertheless, the Dublin Statement is seen as instrumental in the process of privatisation of services that happened in the 1990s, and the framing of water policies by international agencies and multilateral banks, and thus has a paramount importance to HRtW (Cullet 2009, 26–27; Heller 2022, 19–20).

Against the backdrop of emerging water conflicts around the world, and pressure for rights-based responses, the UN Committee on Economic, Social and Cultural Rights ('the Committee') published General Comment 15 in 2002. General Comment 15 states that there is a HRtW under Articles 11 and 12 of the ICESCR. As stated earlier, the ICESCR did not explicitly articulate a right to water in 1966. Articles 11 and 12 protect the right to an adequate standard of living and the right to health, respectively. The Committee 'read in' the HRtW from the implicit terms of these articles, articulating that a 'free standing' right to water did exist under international law under ICESCR (Bulto 2011a, 298) . Under General Comment 15, the HRtW is defined as 'the right of everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses'. In 2010, resolutions from the UN General Assembly (2010) and the UN Human Rights Council (2010), explicitly recognised the existence of the HRtW under international law. The passing of the 2010 resolutions, along with subsequent resolutions[7] since then, at both the UN General Assembly and UN Human Rights Council , have affirmed the recognition of the right at the international level, while also 'clarifying and advancing' its scope and content (Heller 2022, 27–30). While there is certainly contention between countries, in particular over the expansion of its scope and content, the definition of the HRtW under General Comment 15 is cited as the basic definition that UN jurisprudence has developed a consensus around (Fantini 2020).

While General Comment 15 reflects the most authoritative guidance on the HRtW at the

[7] For a full list of resolutions passed by the UN General Assembly and UN Human Rights Council on water, see:

international level, it is not legally binding upon states. Moreover, some countries have developed their own independent understanding of the HRtW for a longer period. For example in India where, for instance, the right has been recognised for a longer period of time than formal recognition at the international level (Cullet 2013; Wahi 2022). Thus, while General Comment 15 is often used as the benchmark for the interpretation of the HRtW in the literature (see for e.g: Winkler 2012; Fantini 2020), it is not binding on states as such, and states are free to also go beyond its parameters. As this paper considers pathways to transform the HRtW, in section 4, this is important to keep in mind.

Meanwhile, the link between climate change and human rights has been increasingly recognised at the international level, in particular by the UN human rights community. The UN Human Rights Council (2008, 2009) has passed several resolutions explicitly acknowledging the linkages.[8] The Paris Agreement (2016), in its preamble, recognised the importance of human rights obligations in addressing climate change. In 2021, the first UN Special Rapporteur on the promotion and protection of human rights in the context of climate change was appointed (UN Human Rights Council 2021). Over the last decade, several UN bodies have also issued detailed reports and studies clarifying linkages, providing guidance, and encouraging further action (see for example: UN Human Rights Council 2017; UNEP 2015). Most notably, in the context of this article, the UN Special Rapporteur on the Human Right to Safe Water (2022) recently issued a three-part report on climate change and the HRtW.

The HRtW has been recognised for a much longer period in some South Asian countries. The HRtW was first recognised in India in 1991 (Subhash Kumar v State of Bihar & Ors 1991). The Indian judiciary has repeatedly affirmed its existence as a derived right under the Right to Life (Article 21 of the Constitution of India) (Wahi 2022). Pakistan and Bangladesh have similarly recognised the HRtW via the judiciary (General Secretary, West Pakistan Salt Miners Labour Union (LBA) Khewral , Jhelum v The Director, Industries and Mineral Development, Punjab 1994; Rabia Bhuiyan v Ministry of Local Government and Rural Development and others 2007). Additionally, in Bangladesh, the Water Act 2013 recognises the priority of the use of water for drinking and sanitation (section 3(2)).

One of the key reasons for its early adoption in India, was the rise of public interest litigation ('PIL') in the 1980s and 1990s, that brought in a rich vein of social and environmental rights

[8] Since 2008, the UN Human Rights Council has adopted a series of resolution, for a full list see: https://www.ohchr.org/en/climate-change/reports-human-rights-and-climate-change

focussed jurisprudence (Razzaque 2004; Sahu 2008). PIL brought forward several technical and procedural flexibilities. Standing rules were transformed to allow for claims to be brought on behalf of a public grievance, and to allow any person, acting bona fide, to advance claims of human rights violations on behalf of victims who could not due to their poverty, disability or socially or economically disadvantaged positions. Through these flexibilities, the Supreme Court heard a wider variety of petitions and proceeded to expand the nature and scope of fundamental rights in the Constitution of India, through an expansive interpretation of the right to life. PIL was not limited to India, with Pakistan and Bangladesh also seeing the growth of PIL in their jurisdictions (Razzaque 2004; M. S. Khan 2014).

While recognition of the HRtW has been clear in the legal systems of India, Pakistan, Nepal and Bangladesh, the status is less clear in Sri Lanka. There has only been articulation of HRtW in policy instruments, such as the National Drinking Water Policy 2007. However, Sri Lanka has signed and voted in favour of international treaties and resolutions that recognise the HRtW, including being one of the drafters of the landmark 2010 UN General Assembly Resolution recognising the HRtW. On the other hand, the lack of recognition domestically through legislation, or via the judiciary, means questions remain about its legal enforceability (Hirimuthugoda and Liyanage 2019; Konasinghe and Edirisinghe 2020).

Despite recognition in South Asian countries, there is a need to better define the contents of the HRtW and incorporate a consistent rights-based framework into water and environmental laws (Cullet 2013; Water Aid 2021). For example, in Pakistan, the absence of implementation plans and accountability frameworks at the federal or provincial levels has hindered the progress of drinking water and sanitation implementation (Water Aid 2021). In India, drinking water policies and programs have generally not incorporated a HRtW, resulting in inconsistent standards being applied and even discriminating against poor urban citizens (Cullet 2013; Pani Haq Samiti v Brihan Mumbai Municipal Corporation 2014). Scholars and organisations working on water issues have called for clearer standards and coherence with related laws to address these issues (Cooper 2018; Cullet 2013; Islam 2014; Sangameswaran 2007; Water Aid 2021).

Table 2: Recognition of the HRtW in South Asian Countries

Country	Recognition through	Reference	Case Details & Relevant passage
India	Judiciary reads into Article 21 of the	*Subash Kumar v State of Bihar* 1991 AIR	The petitioner brought a case against two iron and steel

	Constitution, Right to Life	420	companies, regarding the dumping of waste into water bodies and the health risks to the public. The Court stated that the right to water is derived out of the Right to Life, stating: 'Right to live is a fundamental right under Art 21 of the Constitution and it includes the right of enjoyment of pollution free water and air for full enjoyment of life."
Pakistan	Judiciary reads into Article 9 of the Constitution, Right to Life	*General Secretary, West Pakistan Salt Miners Labour Union (LBA) Khewral , Jhelum v The Director, Industries and Mineral Development, Punjab,* Lahore 1994 SCMR 2061	In this case, the petitioners were mine workers who alleged that the state had issued mining licenses, that had reduced the water catchment and polluted water sources, impacting on residents water use. The Supreme Court held that the right to have water free from pollution was derived from Article 9, the right to life, stating: "The right to have water free from pollution and contamination is right to life itself […] the right to unpolluted water is the right of every person wherever he lives"
Bangladesh	Judiciary reads into Articles 31 and 32 of the Constitution, Right to Life	*Rabia Bhuiyan v Ministry of Local Government and Rural Development and Others* 2007 27 BLD (AD) 261	This case was concerned with a write petition against the government for its failure to comply with its obligations under various environmental rules regarding the arsenic contamination of tube wells across the country. The directed the state's non-compliance with statutory duties "to ensure access to safe and potable water constitutes a violation of the right to life as guaranteed by Article 31 and 32 of the Constitution read together with Articles 15 and 18 of the Constitution."
Nepal	Constitutional recognition of a HRtW	Article 35(4)	35. Right to Healthcare (4) Each citizen shall have the right to access clean water and hygiene
Sri Lanka	Partially recognised by policy	National Drinking Water Policy 2007	The Government of Sri Lanka, while recognising that access to safe drinking water is a basic right

			of every citizen, is committed to the provision of adequate quantity of safe drinking water to the entire population at an affordable cost and in an equitable, efficient and sustainable manner."

2.2. The right to a particular quality and quantity of water

The HRtW has been generally defined as a specific entitlement to a quantity of water, which meets a certain quality. Water quality is vitally important, particularly in drinking water and domestic uses. Indeed, water pollution is a significant problem across South Asia (Azizullah et al. 2011; Hasan, Shahriar, and Jim 2019; Ridzuan 2021). Lack of sewage and wastewater treatment has been a concern for many decades and waterborne diseases are a major cause of death. In Bangladesh, for instance, 8.5% of deaths are caused by water, sanitation and hygiene issues (UN Water 2013). Of the countries examined in this article, a recent Yale University index on safe drinking water and sanitation, ranks all but Sri Lanka outside top 100 countries providing safe water (Wolf et al. 2022). Pollution and contamination issues have been central to the development of the HRtW and, relatedly, the right to the environment. The declaration of the HRtW by the judiciary in Pakistan, India and Bangladesh, all revolved around issues of pollution and contamination (see table 1, above). Nepal's constitution places the HRtW within the framework of the Right to Health (article 35). Climate change adds several complex challenges. For instance, floods, cyclones, exacerbated by climate change, increase risks to water and sanitation infrastructure. Damaged sanitation systems or flooding of sewer pumping stations can cause severe health hazards and cross-contamination (UN Water 2020, 48). High temperatures can also modify water quality, leading to contamination and degradation of freshwater sources (Delpla et al. 2009; Michalak 2016; Whitehead et al. 2009).

A key HRtW issue is developing rules and standards around water quality for drinking and domestic use. Developing and implementing water quality standards is essential for delivering safe water, but the lack of incorporation of these standards into legislation in South Asian countries has led to ambiguity, doubt, and a lack of accountability. Water quality standards place obligations on governments to maintain and monitor (McIntyre 2019). The most detailed and recognised form of standards internationally is from the World Health Organisation (WHO) (WHO 2017). However, countries in South Asia have developed and incorporated their own national-level standards (e.g. Nepal Drinking Water Standards 2062, National Drinking Water Quality Standards (Pakistan). For instance, Nepal has stricter guidelines for mercury and iron, but WHO guidelines

are stricter for arsenic (Warner et al. 2008). Beyond the relative merits of these standards, a key issue is that standards have not been incorporated into legislation. This produces an ambiguity and doubt on their legal status. For example, in India, several standards exist together, such as those developed by the Central Pollution Control Board, the Bureau of Indian Standards Specification for Drinking Water (BIS 10500: 1991) or the Central Public Health Engineering Environmental Organisation (CPHEEO). There is a complete lack of certainty on which standards apply in any particular situation (Menon 2021, 55). The ambiguity translates to a lack of accountability on governments to monitor and maintain drinking water quality standards (Cullet 2013; Water Aid 2021).

Access to a certain quantity of water is a well-established aspect of a rights-based approach to freshwater (UN Committee on Economic Social and Cultural Rights 2002, para. 12; Heller 2022, 44–46). Internationally, organisations such as the WHO and UNICEF have quantified a standard range of 50 to 100 litres of water per capita per day (lpcd) to fulfil basic needs, with 20-25 lpcd identified as the absolute minimum (OHCHR, UN Habitat, and WHO 2010). These guidelines hold significant implications as they become incorporated into development project planning in Global South nations, thereby gaining acceptance as a norm. The translation of lpcd into an individual entitlement has played a crucial role in establishing a 'minimum core' for the right.

Interestingly, different norms have been adopted by many countries for rural and urban areas. In India, the norm for rural areas now stands at 55 lpcd, with a 'goal' of 70 lpcd (Ministry for Drinking Water & Sanitation 2013, sec. 3), while higher levels are utilised for urban areas, such as 135 lpcd in the state of Rajasthan (Government of Rajasthan 2010). Similarly, Pakistan has established a norm of 45 lpcd for rural areas and 120 lpcd for urban areas (Government of Pakistan 2009, sec. 2). The division between rural and urban is problematic from a rights-based perspective, where each person has a universal entitlement that should, in theory, be equal (Cullet 2013, 66) The division is further complicated by the growth of peri-urban areas in South Asia, where the distinction between ‘rural’ and ‘urban’ is less obvious, undermining the rationale behind different levels of water provided to two categories of residents. Moreover, the large difference in entitlements, is problematic in the context of a higher proportion of rural population suffering facing scarcity in drinking water. Moreover, the adoption of these lpcd quantities is not written or defined in rights-based language. For instance, in Pakistan, quantities are expressly listed as ‘guideline values only’, providing a large amount of flexibility (Government of Pakistan 2009 see fn 1, pg 3). Once again, this creates a challenge in terms of enforceability and accountability of such standards and linking them sufficiently to the contents of the HRtW.

In addition to providing access to water, it has generally been understood at the international level that such water should be 'affordable'. This is reflected in relation to various drinking water policies in South Asia. For instance, Sri Lanka's National Drinking Water Policy states that the right to water will be met through providing an "adequate quantity of safe drinking water to the entire population at an affordable cost" (Sri Lanka Ministry of Water Supply & Drainage 2001, sec. 4). Affordability has been one of the most contested aspects of the HRtW. The debate on privatisation, for instance, revolved around the threat of greater water tariffs for piped water connections. The emphasis on access (rather than provision), in many ways, has been a gateway into pricing of water as a default position. In practice, it has also recast the state as a 'facilitator' between private actors and rights-holders, rather than provider of water (Cullet 2020, 262; Sampat 2007).

Water access in South Asia is provided through various means, including piped water supplies, taps, standpipes, tanker trucks, rainwater or groundwater harvesting, or bottled water, each with varying costs. However, although piped water is generally more affordable, it is not accessible to everyone. For instance, in Mumbai, affluent areas receive water for seven hours each day, seven days a week, while some poorer areas are entirely cut off (Mitlin et al. 2019, 21). Moreover, as piped water does not provide round-the-clock access, people rely upon a more diverse range of sources, particularly where they lack water storage infrastructure.

With increasing climatic uncertainty, people inevitably rely upon a diverse array of sources to obtain water (Narain, Vij, and Karpouzoglou 2023; Vij, John, and Barua 2019). In this context, there is a need to revisit the traditional dichotomy between informal and formal water access, which oversimplifies the complex nature of water access. Indeed, the formal provision of piped water by the state has often been seen as a solution to address water access challenges. However, this approach overlooks the importance of informal networks of pipes, storage technologies, and water vendors, which complement formal water sectors rather than compete with them (Narain, Vij, and Karpouzoglou 2023). As a result, an emerging debate has arisen on the role of the informal water sector in the context of the HRtW, considering its role in providing water every day to households and individuals (Menon 2021; Grönwall and Danert 2020; Wutich, Beresford, and Carvajal 2016). The escalating pressures of climate change have meant that water tankers being the primary means of basic water, particularly during warmer summer months, is a common sight in South Asia (Schwartzstein 2020). The role of the informal water sector in meeting people's water needs has thus assumed critical importance.

Research on South Asian countries have predominantly taken a critical stance towards the

operation of the informal water sector, which is largely unregulated and seen as exacerbating existing injustices (Anwar, Sawas, and Mustafa 2020; Ranganathan 2014; Vij, John, and Barua 2019). While there is research from Latin America (Wutich, Beresford, and Carvajal 2016) that has highlights equitable practices by unionised informal water vendors and their potential role within a rights-based framework, there is a dearth of research specifically examining the sector from a human rights perspective in the South Asian region (Menon 2021). Relying upon the informal sector to fulfil the provision gaps of the state can inadvertently allow the state to evade its human rights obligations and responsibility of providing water access to individuals and households. Reliance on informal water can also be used to justify the commodification of water, where it is sold at a price (such as via a tanker), potentially compromising the HRtW. The emergence of Water ATMs in India, which are a type of vending machine that provide water at a cost, exemplifies this issue. Water ATMs exacerbate inequalities between those who can afford water and those who cannot, transforming citizens into mere customers (Cullet 2020). Accordingly, it is important that legal and policy frameworks aiming to address the realisation of the HRtW within the context of climate change should not solely focus on piped water supply. However, while accounting for the diverse ways in which people access water, the obligations of the state remain the same the state is accountable for fulfilling its obligations.

Finally, discussions about the HRtW often begin with issues of access and affordability. However, some argue that a rights-based approach should also include free water provision (Cullet 2020). This idea has received limited attention, but there are examples of free water policies in place in cities across the Global South, including India and South Africa (Delhi Jal Board 2015; Millington and Scheba 2021). During the COVID-19 pandemic, many countries also suspended household water payments (Amankwaa and Ampratwum 2020), and in the South Asian context some cities, such as Bangalore in India, provisioned free water (Kaggere 2020). Advocates of free water provision argue that it is consistent with the interpretation of other rights, such as the right to education and food, in South Asia (Cullet 2020, 266). The focus is on providing free basic water services, not extending free water to luxury uses for the rich. Given the high levels of poverty in South Asia and the challenges posed by the water and climate crises, the idea of providing free water as a basic human right deserves greater consideration.

2.3. Considering multiple uses in a climate context

Internationally, the HRtW has been narrowly defined to primarily include water personal and domestic use (Fantini 2020, 2) . This definition has been reinforced in practice since international

organisations such as the WHO and UNICEF have primarily focused on drinking water and had metric-based targets of 'access to safe drinking water' (Goff and Crow 2014). Drinking and domestic water are vital to life and integral to the HRtW. However, there is also a need to go beyond this narrow definition.

In the context of climate change, a compelling argument emerges for the incorporation of multiple water uses into the HRtW (Hall, Van Koppen, and Van Houweling 2014; Mehta and Langmeier 2020) At the heart of this argument lies the vital provision of water for 'productive activities', often around the household, such a small-scale farming, raising livestock and informal small-scale enterprises. Indeed, several studies show that people in rural areas often use water that is provided for domestic purposes to support such activities, as a necessity (Hall, Van Koppen, and Van Houweling 2014; Mikhail and Yoder 2008; Van Koppen and Smits 2012). In South Asia, a majority of the population in rural areas are small-scale or marginal farmers (FAO 2022). Studies in South Asia have shown how small-scale productive activites in rural areas play an essential role in livelihoods by contributing to household income, food security, nutrition and health (Mikhail and Yoder 2008; Van Koppen and Smits 2012).

A narrow definition of the HRtW, accounting only for drinking and domestic water use, fails to account for the various ways in which individuals and communities use water on a daily basis. In rural and peri-urban South Asia, for example, a common water source like a public tap or pond is often used for drinking, domestic, and productive livelihood activities, regardless of whether these were considered in the design of water services (Hall, Van Koppen, and Van Houweling 2014). When people face water stress during a drought or flood, conflicts between users and different uses arise (Prasad et al. 2012). Thus, recognising the basic water needs, beyond just drinking and domestic water, of individuals becomes crucial, as it serves to alleviate poverty, enhance food and water security, promote gender equity, and aid communities in adapting to climate change (Hall, Van Koppen, and Van Houweling 2014; Jepson et al. 2017; Mehta and Langmeier 2020). Therefore, recognising a more expansive HRtW for 'multiple uses' is crucial to addressing these concerns. This means that the development and planning of water sources for households and individuals must consider providing water for these different uses, rather than only focusing on drinking and domestic water use.

In support of this perspective, Mbano-Mweso (2020) suggests that drinking and domestic water uses could be viewed as the 'minimum core' of the HRtW, while acknowledging a broader range of water uses as part of the progressive realisation of this right. Conversely, some scholars oppose a broader interpretation, arguing that drinking, domestic water use, and sanitation are universal to all humans, while other uses are more context-specific and need not be included in a

universal human right (Bulto 2011b; Winkler 2017). Furthermore, concerns arise regarding the provision of excessive water quantities or the potential for incentivising water overuse (Woodhouse and Langford 2009).

There has been limited recognition at both international and national level to recognise a more expansive HRtW for 'multiple uses'. At the international level, some argue that General Comment 15 does provide a normative guide for countries to recognise an expansive definition (Mehta and Langmeier 2020). More recently, the UN Declaration on the Rights of Peasants adopted in 2019, includes a broad HRtW that expressly incorporates productive livelihood activities (UN General Assembly 2018, art. 21). Domestically, the courts in some South Asian countries have already made a link between livelihood needs and the HRtW. In India, the High Courts have, albeit inconsistently, recognised this link (Wahi 2022, 414). Water policies have listed 'priorities' in allocation of water, however this is not expressed in rights-language (see for e.g.: Government of Pakistan Ministry of Water Resources 2018, sec. 4).

Overall, this section has demonstrated that the HRtW is recognised internationally and domestically in South Asia. However, what is less clear is the content of the right itself, at least domestically. This is because laws and policies have been produced without reference to the HRtW. Moreover, several laws, policies, as well as standards (in the case of water quality) exist that can overlap or contradict each other. This produces a number of gaps and ambiguities as to the scope and content of the right. Finally, while internationally the HRtW generally has a narrow understanding, based broadly around providing drinking and domestic water, there is scope within the South Asian jurisdictions to expand this to include other livelihood uses. This is necessary to meet people's basic water needs, alleviate poverty, improve food and water security, improve gender equity and help communities adapt to climate change.

3. Critical issues for the Realisation of the Right to Water

While countries in South Asia have recognised the HRtW, implementation is still a significant challenge. The above section examined some of the issues around the content and scope of the right. Beyond this, there are many areas of water and environmental law, more generally, that intersect with the realisation of the HRtW. This section examines three such areas: inter-sectoral and transboundary water conflicts, groundwater and the protection of ecosystems and nature.

3.1. Inter-sectoral water conflicts

Competition between different sectors for water is a major source of water conflict in South Asia. Allocation of water according to principles of fairness and environmental justice is vital to ensure the realisation of HRtW. As climate change alters water cycles and the timing and

distribution of water, the rules around such allocation are critical (Cullet, Bhullar, and Koonan 2015; Flörke, Schneider, and McDonald 2018). Water law is a relatively old area of law, compared to environmental and human rights law. It has evolved over time as new interests and uses arises without necessarily reconciling the differences (Dellapenna and Gupta 2008; Cullet and Gupta 2009). In India, for instance, despite the growing water crises, different laws address different water uses and sources of water. No legislation provides a way to mediate allocative priority between different water uses. Water policy offers a partial solution, with sub-national water policies often providing a guideline. However, policy is not binding or justiciable, making it an inadequate substitution for legislation. In the South Asian context, scholars have pointed out that laws operate with different aims and principles in how they are regulating water, without incorporating modern understandings of hydrology and climatology, as well as recent developments in human rights, development policy and environmental law (Cooper 2018; Cullet 2011; Water Aid 2021).

The allocation of a limited quantity of water among different uses is often referred to as 'inter-sectoral allocation' of water (Cullet, Koonan and Bhullar 2015). The growth of urban areas across South Asia, for instance, has seen intensive water use, often withdrawing water that was otherwise used in rural area (Meinzen-Dick and Appasamy 2002; Narain and Prakash 2016; Roth et al. 2019). Climate-related impacts such as urban heatwaves and droughts drive further water demand in cities, potentially intensifying rural-to-urban water transfers (Caretta et al. 2022, 616–17; Flörke, Schneider, and McDonald 2018). The absence of laws and regulations that integrate fairness in allocation of water, particularly in relation to the most marginalised sectors of society, but also in relation to ecosystem and non-human water needs has meant increased water conflict.

The lack of rules exacerbates water scarcity among the poor, impacting their HRtW. Such conflicts have often been termed 'water grabbing', a situation where powerful actors are able to "take control of, or reallocate to their own benefits, water resources already used by local communities or feeding aquatic ecosystems on which their livelihoods are based" (Mehta, Veldwisch, and Franco 2012, 196). Indeed, one of the key aspects here is curbing the over-exploitation and overconsumption of water by particular sectors and sections of society. Recent droughts and heatwaves in different parts of South Asia, and other places in the Global South, have demonstrated visible distributive injustices and unsustainable consumption patterns of privileged social groups (Savelli et al. 2023, 4; Bhardwaj 2019). Neoliberal reforms have been central to driving such inter-sectoral water conflicts and injustices. The rationale of 'cost-recovery' and water as an 'economic good' is significant to decision-making over where water flows. These reforms have incentivised the reallocation of water from rural to urban areas in India, since users are more likely to pay for water, and utilities can gain revenue (Birkenholtz 2016; Wagle, Warghade,

and Sathe 2012).

3.2. Transboundary water governance

Transboundary water sharing is similarly an area of increasing concern. There are two major river basins in the region (Indus, Ganges-Brahmaputra), that cross over India, Nepal, Bhutan, China, Afghanistan, and Bangladesh, supporting the lives and livelihoods of nearly a billion people. The rivers basins are critical for drinking, domestic use, agriculture, and energy related water use. Climate change is already having significant impacts to these transboundary basins. For instance, glacial areas in Nepal have already decreased by nearly a quarter (Bhattacharya et al. 2020, 2). Reports indicate that more than a third of the volume of glaciers in the region will be gone by 2100 even if warming is kept to 1.5 degrees globally (O. Ahmed 2019). Such glacial melt has been linked to major floods across South Asia and transboundary rivers in the region (Nepal, Pakistan, India). Transboundary rivers in South Asia are also heavily engineered spaces. Climate impacts and water flows, interact with hydropower dams, barrages, embankments, and diversions that have been built over the last century. Thus, law and policy become integral to how water is used, diverted, and distributed across the region, and the protection and realisation of a HRtW.

The UN Watercourses Convention 1997 is the main international convention governing transboundary watercourses.[9] However, none of the South Asian countries have signed the convention to date. The Watercourses Convention integrates several principles that can also be considered as customary international law, meaning they are today part of general obligations of states under international law. These include the principles of no-harm (Article 7), equitable and reasonable utilisation (Article 5-6), and cooperation (Article 8-9). Furthermore, the Watercourses Convention states that conflicts should be resolved with special regard being given to the requirements of "vital human need" (Article 10(1)). Scholars have argued that this phrase, "vital human needs" is aligned with the HRtW. For instance, Bulto (2011a, 313)argues that 'vital human needs' is a 'shorthand expression for the minimum core of the human right to water'. McIntyre argues that it 'corresponds closely' with the obligations of States and the entitlement of indviiduals under the HRtW. (Bulto 2011b; Hildering 2020). At the same time, aligning with the idea of the HRtW, many scholars point out that the expression falls short of imposing obligations to provide for, or satisfy, human needs in the way a right does (Bourquain 2008; Leb 2012; McCaffrey 2005).

Regional water treaties in South Asia, do exist between various states over certain water bodies.

[9] Other conventions do exist, such as the 1992 UNECE Water Convention and its Protocol on Water and Health, however, to date, they have less universal acceptance. The UNECE Water Convention was only opened up for all UN member states to accede to it in 2013 (On the relationship between the UNECE Water Convention and the HRtW see: Mcintyre 2015).

But they do not generally contain provisions around equitable and reasonable sharing, a key principle of the UN Watercourses Convention. Nor do they include any mention of the HRtW or 'vital human needs' (Jolly 2018, 149–50). There is also very little said about environmental considerations, such as sustaining water flow, ecosystems, or incorporating climate change in the treaty (Hanasz 2017, 40–44; Jolly 2018; Mirumachi 2015, 78).

There have been several disputes within the region around water sharing, and more generally criticisms around the inequities built into the treaty regime. For instance, the construction of the Farraka Barrage in the Indian Ganges has diverted water from Bangladesh. Downstream communities have been impacted by lower flows of water and salination, which has impacted vital freshwater use (Baten and Titumir 2016; Siddique 2015). While the Ganges Treaty, signed in 1996, regulates water distribution from the Farakka Barrage, the basis for sharing decisions is on historic water flows. Thus, it has failed to account for a changing climate, and increased water use across the basin. Recent data has shown that 65 per cent of the time Bangladesh did not receive its guaranteed share during critical dry periods with high water demand (Rahman et al. 2019). For the most part, South Asian countries have pursued approaches that reinforce their sovereignty over water, utilising water largely for economic development within their own countries. There is a significant need, in this context, for advocating a rights-based approach that considers ecosystem and basic livelihood uses of water beyond the territorial limits of each country (Jolly 2018, 150).

3.3. Use and conservation of groundwater

In recent decades, groundwater has been a key area of conflict and contend in South Asia. Groundwater is critical to fulfilling the basic water needs in the region. In Pakistan and India, for instance, groundwater provides 85 to 90 percent of domestic water use in rural areas (S. A. Khan, Puthucherril, and Paul 2021, 1; Lytton et al. 2021). Groundwater acts as a crucial buffer during drought periods, thus serving an important role in a climate context (Green et al. 2011). With more climate-related drought in future years, groundwater demand is likely to increase (T. Shah 2009a). Unfortunately, in South Asia, usable and sustainable groundwater has depleted and been contaminated in many parts (MacDonald et al. 2016). This has serious consequences for millions of people across the region.

Central to this crisis has been the absence of law, policy and governance that protects the HRtW and ensures equitable and sustainable groundwater use (Cooper 2018; Cullet, Bhullar, and Koonan 2017; Koonan 2016). Colonial groundwater laws continue to operate in some countries like Pakistan and India. These laws were written at a time when groundwater and surface water were seen as distinct entities. The Easements Act 1882 (in Pakistan and India) gives landowners

unfettered access to water under their land. As a result, landownership becomes a proxy for water rights. This has particularly grave consequences for landless and marginalised people in rural areas. For instance, in India, the nexus between caste and landownership means that access to groundwater becomes determined by caste(S. A. Khan, Puthucherril, and Paul 2021).

The lack of regulation of groundwater, without adherence to social or environmental standards, has resulted in the emergence of informal or private groundwater markets in the region (Meinzen-Dick 1996; Prakash 2005; T. Shah 2009b). This issue is compounded in recent years by unplanned urbanisation and a neoliberal policy climate, further exacerbating the growth of these unregulated markets due to burgeoning demand from urban sectors (Vij, John, and Barua 2019, 1082). Given that groundwater serves as the primary source of water for many communities in South Asia, people are increasingly reliant on these markets. This is particularly the case for water obtained from tankers, used to meet basic needs in urban and peri-urban areas. This is increasingly common in situations of drought and heatwaves that are increasing with climate change. The water being purchased also is often outside the purview of regulation. For instance, in India, it is unclear what standards apply in law regarding quality of water bought from tankers (Menon, 2021).

Within this context, private water traders often engage in aggressive pricing and extraction practices (Ranganathan 2014). Consequently, a situation of conflict and injustice arises, disproportionately affecting the most marginalised individuals who are unable to afford the inflated prices. The relationship between the state and private actors is intricate. For instance, in some cases there is a nexus between local politicians, the local elite, and water sellers (Anwar, Sawas, and Mustafa 2020; Vij, John, and Barua 2019). These actors collaborate to exploit the situation for their own profit and benefit, while the marginalised population bears the brunt of the consequences, facing further marginalisation and deprivation (Anwar, Sawas, and Mustafa 2020). A number of studies have shown how these markets are embedded in local power relations, norms and practices, inherently bound up with caste and gender (Dubash 2002; Prakash 2005) .

While there have been attempts at reforming groundwater laws, the reforms have often been unclear (in relation to overturning the existing regime) or partial. In both Pakistan and India, legislative reforms around groundwater will have to happen at the state or provincial level, as they are responsible for water under the respective constitutional arrangements (Alam 2019; Sankaran 2009). In India, there have been efforts to pass new legislation through model laws released from the centre, but there has not been much traction from state-level legislatures (Cullet, Bhullar, and Koonan 2017, 652–54). However, in Pakistan, in recent years there has been progress, for instance the provinces of Punjab and Khyber Pakhtunkhwa passed legislation (Punjab Water Act 2019; Khyber Pakhtunkhwa Water Act 2020) to comprehensively manage and regulate water within its

provinces. A key challenge remains in reforming laws to reflect ground and surface water as a single integrated resource, and account for environmental justice considerations in the allocation of groundwater between different users (Cullet, Bhullar, and Koonan 2015; Srinivasan and Lele 2017).

In contrast to India and Pakistan, where ground water and surface water have largely remained distinct units under the law, Nepal and Bangladesh have enacted legislative reforms that look at water in a more comprehensive way. However, a closer examination reveals significant gaps in incorporating social or environmental objectives. In Nepal, the Water Resources Act vests ownership of all water (ground and surface) to the State and introduces a licensing regime for the use of water resources. However, the licensing regime has gaps which exempt drinking and irrigation water uses undermining the effective regulation of groundwater (Allan 2005, 552; Sharma, Gupta, and Basnayake 2021, 17). In Bangladesh, the Water Act 2013 vests all rights over groundwater resources in the state (section 3(1)). Islam (2021, 52) argues that this legislative provision can be interpreted as being in line with the public trust doctrine, which has been recognised in Bangladesh through the judiciary. Ideally, this would mean the state, as a trustee, must steward water, prevent capture by private interests, and ensure fairness in allocation. However, the Water Act 2013 (Bangladesh) allows for the unlimited abstraction of privately-owned water sources, running counter to the assertion of state ownership of all water resources (Islam 2021).

International groundwater law, unfortunately, provides little coherent guidance here. While groundwater governance has broadly evolved in the last three decades, building several key social, economic, and environmental principles, there aren't specific legally binding treaties for groundwater resources that aren't transboundary aquifiers or basins. Furthermore, coherence between these principles across different instruments is also a major gap. In a detailed study of major international groundwater conventions and soft law instruments, Conti and Gupta conclude that the framework of the collective principles, across different instruments, do not adequately address the potential impact of climate change. They point to, for instance, crucial environmental principles such as the precautionary principle, missing from key treaty instruments, such as the UN Watercourses Convention.

Overall, groundwater law and policy in the region remains a critical issue that has driven a crisis, undermining the ability of groundwater to act as a crucial buffer during climatic stress. Legislative reforms are necessary and long overdue in jurisdictions like Pakistan and India where colonial laws continue to exist. There is a need to decolonise the law and address current challenges and place a HRtW at the centre of such reform.

3.4. Ecosystems, Nature and River Rights

As the above sections have demonstrated, there is an urgent need in South Asia for greater levels of conservation and protection of water sources and ecosystems. Realising the HRtW requires ensuring that long-term damage is not done to the very resources that support populations and the livelihoods (Brooks 2007; McIntyre 2012). Protection of water-related ecosystems also play an important role in climate mitigation (Lundberg Ingemarsson et al. 2022). Reading the HRtW in conjunction with other rights, such as the right to food and the right to a healthy environment, means an approach is required that centres upon conservation and protection and beyond just delivery of water to people.

There has been some recognition, under international law, of the importance of ecosystem protection in relation to the HRtW. General Comment 15 focuses on recognising the importance of ensuring there is enough water for human needs (see para 7, 11, 26 and 34). However, this has been criticised as being anthropocentric and ignoring the ecological value of water (McIntyre 2012; Neimanis 2014). There are potential connections between the HRtW and the Sustainable Development Goals (SDG) framework. For example, SDG6, which focuses on water, aims to achieve universal and fair access to safe and affordable drinking water for all. It also includes targets for reducing pollution, preserving, and restoring water-related ecosystems, promoting international cooperation, and developing infrastructure. By analysing these intersections, Spijkers(2020)suggests that SDG6 could be seen as an encouragement to states to fulfill their obligations regarding the HRtW in a more sustainable manner. However, Lele (2017)points out that SDG6 targets fail to address issues of 'biophysical (in)justice' through the (in)equitable distribution of water across sectors. As I have emphasised in this paper, the allocation of water use among different users is crucial in addressing current water challenges. Additionally, the language used in SDG goals and targets does not effectively align with existing human rights obligations, lacking specificity and direct correlation (Knox 2015). Overall, what we are left with from international law and policy is an assortment of principles, and general recognition of the linkages between the HRtW and ecosystem protection, without a clear and coherent framework to address the tensions.

Environmental flows are an important aspect of ecosystem protection in relation to the HRtW (Chen and Olden 2017; Scanlon et al. 2006). Environmental flows broadly refer to maintaining a level of water to sustain freshwater and estuarine ecosystems and the livelihoods and well-being that depend on them (International River Foundation 2018). Despite their importance, environmental flows are a neglected area across South Asian countries. The phenomena of 'disappearing' and 'dying' rivers due to overexploitation from hydropower, industrial use, and

waste exemplify the scale of the crises (Erlewein 2013; Khalid 2018). Such overexploitation has severe impacts on the HRtW by reducing the quality and quantity of water available.

Environmental flow monitoring is still in its infancy in South Asia, and there is a lack of knowledge and experience. Additionally, environmental flow has not been integrated into the legal framework. In India, for instance, the National Water Policy 2012 recognises the importance of environmental flow by stating that "water is essential for the sustenance of ecosystems, and therefore, minimum ecological needs should be given due consideration." However, as has often been the case, policies have defined environmental flows as 'minimum flows,' which has been criticised as implying leaving enough for maximum abstraction of water (Anantha and Bhadbhade 2020). Moreover, the language of the policy ('should') does not oblige the state. Instead, there have been only ad-hoc interventions by the central government in India to enforce the protection of environmental flows on some rivers (Ministry of Water Resources 2018).

Recent developments in Bangladesh, Nepal, and India around the right of rivers signify a legal innovation aimed at addressing the ecological well-being of rivers, particularly the depletion of flows during dry seasons. While recognition of rights of rivers has grown in recent years across the world, its formulation varies across jurisdictions. In South Asia, there is a trend of judicially recognising the rights of rivers, with guardianship given to a state institution. Bangladesh and India, for instance, assigned legal guardianship to state institutions (Islam and O'Donnell 2020; Kothari and Bajpai 2017; Jolly 2022). For instance, in the case of *Mohd. Salim v State of Uttarakhand & others* (2017), the petitioner challenged the state's actions in allowing private actors to construct near by the riverbed, and the failure of the state to constitution a river board for administration, construction, maintenance and operation of the projects relate. However, the Court ordered three bureaucrats and politicians - the director of 'Namami Gange', the Uttarakhand chief secretary and the advocate general of the state - to protect, conserve and preserve the rivers as their legal guardians. Such cases, thus, while invoking the rights of nature discourse, retrench the role of the state, despite the fact that the states' failure to implement existing environmental laws has contributed to the current crisis (Jolly 2022). In contrast, cases in Colombia and New Zealand have placed local communities and indigenous peoples at the forefront of legal guardianship(O'Donnell 2021). From an environmental justice perspective, the South Asian formulation of river rights does not adequate incorporate considerations of distributive or procedural justice. It risks perpetuating the dominance of a powerful actor over marginalised group by centralising power. Moreover, though rivers have been granted legal personhood, the specific aspects of such a right, such as specifying environmental flows, remains undefined (O'Donnell 2021). While the focus on water-related ecosystems, through the rights of rivers jurisprudence, is

broadly a positive thing, the formulation of river rights in South Asia has numerous challenges in transforming the root causes of water-ecosystem degradation.

4. Transforming the Right to Water

The recognition of the HRtW, both internationally and in the countries of South Asia, is a significant accomplishment that has been achieved through the efforts of activists, communities, and NGOs. However, the preceding sections have identified numerous gaps and challenges in realising the HRtW, particularly considering the intersection with climate change in the region. The HRtW, as currently framed in South Asia, has primarily focused on providing access to a specific quantity of water that meets a particular quality standard. Unfortunately, this limited focus has not been successful in addressing the prevalent water poverty and inequality throughout the region. The legal and policy framework supporting the HRtW has many critical gaps in dealing with multiple intersecting challenges, as outlined in the earlier sections. Accordingly, it is necessary to consider alternative approaches. This final section outlines pathways to empower rights-holders to transform the structural conditions under which water is used, conserved and access.

As explained in section one of this paper, water insecurity and poverty are rarely related to a lack of absolute freshwater but rather rooted in power, poverty and inequality (United Nations Development Programme 2006, 2; Joy et al. 2014; Mehta et al. 2014). The ecological degradation of water bodies, similarly, is a consequence of power hierarchies that give certain actors the ability to exploit or pollute water unabated. Accordingly, several authors have contended that the HRtW needs to shift towards a right to transform the socio-ecological conditions and relationships that mediate one's access to water. For instance, Bond (2012, 198) argues that we need to go beyond techniques that "individualise and commodity water consumption, delinking it from its sources and disposal". Linton (2012)argues that the HRtW needs to go beyond an individual right towards a right to change the social relations around water. What these authors share is a vision for the right to be transformative. As Prieto (2021, 292) puts it, the HRtW in its current form, risks becoming an apolitical tool that could lose its power as a concept that leads to social and ecological transformation .

One path towards such a reframing is a stronger emphasis on both participation and the re-commoning of water. Loftus(2015, 5) contends that the HRtW should be expanded to a democratic right to forge "waterscapes in a dramatically different ways" implying a right to "participate democratically in the production, distribution and exchange of water". This would entail democratising property relations around water. Clark (2012, 181) argues, in defining and negotiating the content of the HRtW, a participatory component would allow poor and marginalised communities the "political space to demand inclusive and equitable water policies

and services".

To date, participatory governance in South Asia has often been driven in a top-down manner. Water sector reforms in the past three decades, frequently driven by development assistance programs, have established participatory schemes that operate outside of constitutionally-led local democracy frameworks, such as village-level governments (Cullet 2015). Participatory schemes in the South Asian water sector have been criticised for their depoliticised nature (Dewan, Mukherji, and Buisson 2015) and susceptibility to elite control (Chakrabarti 2016; Cullet 2009, 138-170; Dewan, Buisson, and Mukherji 2014). Tightly bound to neoliberal reforms, these programs have been implemented while the state has withdrawn financial and technical resources, resulting in a situation where neither the community nor the state is effectively executing their functions. This can be contrasted with approaches that seek to strengthen democratic frameworks, recognised under the law, such as empowering and expanding local government institutions (Dewan, Mukherji, and Buisson 2015).

Alongside participation, critical scholars have outlined the need for a shift in property relations through recognising water as a commons resources. Patrick Bond (2012, 198) argues that a genuine HRtW necessitates its "commoning" across individuals and communities, and from all phases and aspects of the hydrological cycle. This implies that for individuals to genuinely possess the ability to engage in decision-making regarding water, water must be treated as a common resource (without imposing private property rights) and decision-making must consider the impacts throughout the entire water cycle. As we have seen in earlier sections, the legal frameworks in South Asia have not paid sufficient attention to the water cycle as a whole.

On the other hand there are legal principles that have been recognised in South Asian jurisdictions, such as the public trust doctrine and the common heritage of humankind, that can be strengthen and built upon to transform the HRtW. The public trust doctrine, for instance, is the idea that some parts of the 'natural' world (e.g. water) are so essential to human life that private interests cannot trump them (Takacs 2008, 718). Accordingly, the trustee has a responsibility to steward water, prevent capture by private interests, and ensure water is sustained for future generation. In this context, the state is often recognised as the 'trustee' with specific duties and responsibilities. The public trust doctrine has had renewed interest by lawyers and scholars, in the context of climate-related challenges (Jackson, Brandes, and Christensen 2012; Craig 2009; Ohdedar 2019). This principle has been recognised, in relation to water and other resources, in countries in South Asia (Bhuiyan 2021; Munir 2017; Scanlan 2017; Thapa and Rai 2016, 252) . The public trust doctrine provides a commons-based approach that reappropriates water, beyond private property rights.

In South Asia, the public trust doctrine has had many challenges in integrating into legal system, beyond judicial pronouncements. However, experiments from elsewhere can serve as examples of how it can better integrate into the HRtW and water governance issues. For instance, in Hawaii, the public trust doctrine has been central to a "paradigm change" in water relations, integrating indigenous peoples worldviews, reasserting water as a public resource, as well as distilling specific principles for state authorities to apply (Sproat and Tuteur 2019).

Second, common heritage of humankind is a legal principle originating from international law. Under common heritage, a resources (such as water) cannot be appropriated for 'exclusive use', with use and access under a common management system and benefits derived being equitably shared and preserved for future generations (Bosselmann 2015, 76; Kpenou 2018). The principle is recognised under international treaties, such as under the UN Convention on the Law of the Sea (1982, art. 136), that has been signed and ratified by all South Asian countries examined here. Moreover, it has been recently included in draft water-related-legislation in India (Draft National Water Framework Bill 2016, sec. 4). While it has not featured prominently in domestic legal systems, Mickelson (2019, 662) points out that many aspects of common heritage, if incorporated at the domestic level, "could result in a dramatically different vision of the social good", reinforcing a collective interest in resources (such as water), and a commitment to intergenerational equity and fair distribution. It would mean decisions at the national level are made with an understanding that countries share the global water cycle and no one country should act in a manner that would harm the water cycle negatively(Cullet 2020, 269).

To summarise, there is a need to reframe the HRtW as a transformative right that addresses the underlying socio-ecological conditions and power dynamics affecting water access. This can be achieved through increased participation and the re-commoning of water resources, empowering marginalised communities, and democratising property relations. Legal principles such as the public trust doctrine and the common heritage of humankind offer avenues for transforming the HRtW by reappropriating water as a common resource and ensuring equitable sharing and preservation for future generations.

5. Conclusion

The fact that the HRtW has an established history in most countries in the region is significant in providing a way to prioritise basic human needs and ecological protection. However, as we have seen the scope and contents of the HRtW, across South Asia has been lacking in specificity, poorly defined, with laws and policies demonstrating significant gaps even with a narrow understanding of the right. The intersections between water, climate change, development, and poverty in the region, mean that analysing the HRtW through an environmental justice lens demonstrates how

the impacts of climate change will materialise unequally (both at the intra and inter-state level).

This review article has introduced various themes and issues related to water allocation, groundwater extraction, and ecosystem protection. Section three specifically analysed how current laws and policies often fail to consider fairness in water distribution and ecosystem preservation. It was observed, for instance, that legal frameworks allow landowners to excessively extract groundwater without sufficient regulation aligned with social and environmental norms. This has particularly grave consequences in a climate context, as groundwater is a crucial buffer during droughts. Consequently, millions of people experience daily water insecurity, impacting their HRtW, while others exert control and power over water resources. While governments are recognising the link between water and climate change, as evidenced by the Nationally Determined Contributions (NDCs), the urgency of addressing these issues must translate beyond individual projects and weak policy reforms. Protecting and realising the HRtW requires addressing rules governing water allocation, groundwater extraction, and related areas.

Furthermore, it is crucial to redefine the scope and content of the HRtW in a broader context to address the root causes of water inequality, injustice, and ecosystem degradation today. Focusing solely on access to drinking and domestic water narrows the understanding of people's diverse water needs in South Asia and their varied water usage patterns. Neglecting these broader concerns would diminish the relevance of the HRtW as a tool to tackle the water and climate crisis. As discussed in this article, one approach to address this challenge is to explore existing principles that can offer a more transformative interpretation of the HRtW.

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