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## Who Gets Water? Governance Failures & Persistent Drinking Water and Sanitation Issues

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**Abstract:** *The sustainable provision of potable water and sanitation services presents a multitude of fundamental challenges concerning access and allocation. These challenges extend beyond water resources themselves, encompassing the allocation of rights, responsibilities, and associated risks. Disparities in water supply and sanitation services are stark, both geographically and socioeconomically. A thorough analysis requires examining the international governance instruments that guide access, the property rights frameworks that dictate allocation, and the scales at which these rights and frameworks operate. Additionally, the responsibilities vested in various authorities and stakeholders must be scrutinized. Water insecurity, particularly with respect to drinking water and sanitation, is not solely attributable to natural phenomena. This paper presents a literature review (2008–2023) encompassing research from the Earth Systems Governance community and beyond, focusing on water supply services and sanitation. Access and allocation were interpreted broadly, encompassing issues of inclusive development, justice, sustainability, and additional themes identified through the review process. The findings suggest a significant role for governments in facilitating access and allocation, with failures in these areas leading to long-term consequences. This will necessitate a holistic approach that considers water access and allocation alongside interconnected issues like sanitation, development, climate change, energy, and food security, all within a multi-level governance framework.*

**Key Words:** Access, Allocation, Water Supply, Sanitation, Governance, Institutions

### Introduction

UN-Water (2018) data show a considerable global difference in access to water and sanitation. A huge 844 million people lack basic water services, with 2.1 billion lacking safe drinking water. Sanitation access is much more troubling, with 4.5 billion people without safe sanitation and 892 million resorting to open defecation. These figures highlight the immense scale of this challenge. There is a well-established correlation between economic development and access to water and sanitation. Countries with a higher average per capita GDP (gross domestic product) exceeding \$10,000–15,000 typically demonstrate improved access. However, the case of Malawi exemplifies that GDP is not the sole determinant. Despite a lower per capita GDP of \$1,000, Malawi boasts a 90% access rate, compared to Mozambique's 50% with similar income levels (Ritchie and Roser 2018). This underscores the importance of considering factors beyond economic prosperity. Governance and infrastructure play a crucial role.

Unequal distribution of water and sanitation rights further exacerbates the problem. Studies by Fogden

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(2009) and Tussupova et al. (2015) demonstrate a stark disparity between the rich and poor, with 25% of the population living below the poverty line lacking piped water connection. Sanitation inequality is even more pronounced. Prioritizing the most vulnerable populations is paramount. Duflo et al. (2012) and Hall et al. (2014) emphasize the need to focus on children, women, the disabled, and marginalized communities when improving access and allocation of clean water and sanitation. Addressing this global challenge requires a two-pronged approach. Firstly, it is crucial to support entities that cater to underserved populations (Jasper et al., 2012). Secondly, developing sustainable and affordable solutions for clean water and sanitation tailored to the needs of impoverished and marginalized households is essential for long-term success.

Access and allocation of water and sanitation services have been intricately linked in the evolution of most of the main discourses for water governance and are affected by the prevailing social, political and economic institutions, as well as power relations in any given context (Zwarteveen et al. 2017). The current water crisis is about definitional issues, ownership and access, water and watershed boundaries, different uses of water, and the levels at which water should be managed (Gupta et al., 2013). Solutions to these issues must consider the context when selecting policy instruments, infrastructures, and institutions for water management (Gupta et al., 2013). In particular, water must be recognised as a cross-cutting issue, and paradigms such as integrated water resource management and adaptive governance must reflect this (Gupta et al., 2013).

## Method

This research article undertook a comprehensive review of the extant literature on water supply services and sanitation. The analysis encompassed publications from the Earth Systems Governance (ESG) community and extended beyond, with a particular focus on findings generated between 2008 and 2023. The interpretation of access and allocation was expansive, incorporating considerations of inclusive development, justice, and environmental sustainability. The review employed the Web of Science for bibliographic searches, utilizing a combination of search terms, including "access and allocation," "inclusive development," and "water justice." Through a process of iterative refinement and selection based on thematic relevance to ESG, a corpus of 49 pertinent articles was identified and subsequently synthesized to inform the present study.

## Access to Water and Sanitation

The concept of access can be operationalized as "the ability of individuals to secure a fundamental minimum of resources and eco-space" (Gupta & Lebel, 2010, p. 379). In the context of water, access signifies the availability of sufficient water, both in terms of quality and quantity, to satisfy essential human requirements for drinking and sanitation (Weik, 2012). Access to safe drinking water and improved sanitation facilities is paramount for human dignity, health, and productivity. However, unequal distribution of access often disproportionately burdens women and children (Gupta & Lebel, 2010). Therefore, ensuring access to water necessitates guaranteeing the universal availability of safe drinking water, a prerequisite for a life of dignity (Gupta, 2010).

Lastly, access to water for basic human needs is also dependent on access to institutions and decision-making processes. The watershed, regional, and transboundary nature of the water resource increasingly makes access to water more than a local issue; access impacts and depends on upstream and downstream actors, including other local, regional, and national governments. Having access to and influence on decision-making processes can determine access to water for basic human needs (Matter et al. 2014).

## Ecological Water Issues

Firstly, freshwater resources, characterized by their finitude, are demonstrably essential for numerous facets of human and economic development. Obani and Gupta (2014) comprehensively outline the diverse applications of freshwater, encompassing potable consumption, sanitation and other domestic requirements, cultural significance, livestock sustenance, fisheries, fire suppression, irrigated agriculture, the preservation of wetlands and associated ecosystem services, energy production, industrial and construction activities, and spiritual practices. However, geographical location and contextual factors

significantly influence freshwater availability. As highlighted by He et al. (2018), Pullan et al. (2014), and Magalhaes et al. (2011), geographic disparities and location-specific constraints can restrict access to clean water and improved sanitation. In the face of climate change, a reduction in water availability poses a potential challenge to adaptation efforts. This limitation may impose a critical threshold beyond which adaptation becomes impracticable, rendering migration an increasingly attractive course of action.

Urbanization has a significant impact on improving water supply and sanitation systems due to its visibility and availability dimensions. However, megacities are expanding due to illegal slum settlements, often on riverbeds. This leads to changes in land cover and population, access to poor quality water and untreated sanitation, which present a particular challenge for the services sector (Neiderud, 2015). Urbanization is the underlying driver that influences accessibility to clean drinking water and sanitation in least-developed countries (Hutton and Chase, 2016; Jobbins et al., 2018). The majority of the population in the developing world presently has very limited rights to access clean water and improved sanitation (Hutton and Chase, 2016). This is mainly due to weak institutions or poor governance, as well as inequities in the allocation of financial resources and the adoption of modern technologies that compound accessibility issues (Hunter et al., 2010; Aliyu and Amadu, 2018).

### Social Water Issues

Multiple factors, encompassing environmental, socio-political, and economic aspects, influence access to water and sanitation across international, regional, and local scales (Obani & Gupta, 2016). While the established linkage between water and sanitation is vital for safeguarding drinking water quality, its long-term sustainability might be compromised. In essence, if integrating sanitation with water quality raises concerns about contamination of the latter, progress in ensuring access to sanitation could be hindered. Therefore, the discourse surrounding access to water and sanitation should strive to heighten awareness regarding water quality issues without hindering the development of normative frameworks within sanitation-related discussions (Feris & Ellis 2014).

Another important social determinant of access is conflict over transboundary water resources (Obani 2018); the inclusion of conflict resolution measures in water agreements is often affected by transaction costs (Earth System Governance Project (editor)). Access to social processes like laws protecting land tenure and access to basic necessities, social justice movements, and participation in water and sanitation governance are also important social determinants of access (COHRE et al. 2008; Gupta and Lebel 2010). This is further compounded by fragmentation in the roles and responsibilities for water and sanitation services delivery and governance at the international, national and sub-national levels (COHRE et al. 2008; Obani 2018).

There is an intricate relationship between population growth and water demand. As Okello et al. (2015) highlight, population surges exacerbate water scarcity issues. Given this growing challenge, research by Fogden (2009) and Reddy et al. (2015) emphasizes the importance of large-scale potable water production. However, Das (2006) proposes a nuanced approach, advocating for a dual water supply system. This would consist of a smaller reserve of high-quality drinking water alongside a larger volume of treated water suitable for domestic and industrial uses but not necessarily for direct consumption.

The constraints in access to clean drinking water and sanitation are diverse for different countries, and it can reduce access to clean drinking water and improved sanitation, such as (1) insufficient investment in water and sanitation infrastructure (Duflo et al., 2012); (2) lack of political will to face the difficult situation (Andersson et al., 2016); (3) the tendency to escape new technological or implementation approaches and to apply conventional water and sanitation interventions without community participation, even if they are in line with the specific needs of the community and the environment (Tsinda et al., 2013; Andersson et al., 2016); (4) and finally failure to conduct evaluations of water and sanitation interventions to see if they are successful and sustainable (Taylor et al., 2015).

### Human Rights to Water and Sanitation

Within the legal scholarship on access to water and sanitation, rights frameworks serve a primarily prescriptive function, acting as the dominant tool for promoting improved access (Bourquain, 2008;



Palmer et al., 2018). Local communities have historically maintained a deep cultural, religious, and spiritual connection to water resources, translating into claims of water rights grounded in social justice principles (Peña, 2011). The fundamental nature of water for human survival has led to its near-universal recognition as a basic human right (Sharmila & Murthy, 2013; Hall et al., 2014). However, the legal frameworks surrounding both the human right to water and sanitation are relatively recent additions to our legal systems (Obani & Gupta, 2016; Matchaya et al., 2018). As such, several key issues remain regarding access: 1) the initial recognition of the right and the procedural mechanisms for its achievement, 2) the potential for rights circumvention, and 3) the inherent tension between the right to water and sanitation and the commodification and privatization of water resources.

The human rights to water and sanitation recognise access to water and sanitation for personal and domestic use as a public good. Rights are increasingly being recognised in international law instruments, as well as national laws and policies, and cases are being decided in international, regional, national, and sub-national courts (Obani and Gupta 2015). Though both rights evolved in close connection with each other, they exist as separate interdependent rights with similar normative elements, which nonetheless require nuanced interpretation and implementation with reference to the prevailing local circumstances (Obani and Gupta 2015).

International conferences recognize the human right to water and sanitation, as well as Article 17 of the '2004 Berlin Rules', which states that "every human has the right to access clean, sufficient, safe, physically accessible, and affordable water to meet the vital human needs (ILA. 2004). A number of legal documents implicitly and explicitly recognize the right to access water, as well as several legally binding human rights agreements. Although several developed countries have failed to acknowledge the right to water and sanitation (including the United Kingdom, Canada, Sweden, Japan, Ireland, Australia, Austria and the United States of America), in 2010 (and again in 2015), the United Nations General Assembly adopted a non-binding resolution that identifies access to clean drinking water and improved sanitation as a human right which is necessary for human well-being and fulfilling basic human rights (UNGA, 2010; UNGA 2015). In the same year, the United Nations Human Rights Council adopted the human right to access clean drinking water and sanitation by consensus (Davis and Ryan, 2017), and later, the United Nations Independent Expert declared it legally binding (Winkler, 2016).

Although human rights are universal, in practice, they can be limited and denied to marginalized peoples at the state or government level (de Albuquerque and Roaf, 2012; Hall et al., 2014). For example, in northern Thailand, migrants were recognized by the Interior Ministry, which provided schools and health facilities, but the Ministry of Forestry denied access to the forests in which they were living (Vandergeest, 1996). There might be more such examples where the boundaries of rights and access are blurred (Sundar, 2001; Baviskar, 2001). Most often, new legal tools do not describe all power connected to certain rights, and conflict arises while resolving such uncertainties. In such a plural legal structure, some actors may struggle to sustain their current access or to gain control over others and hence improve their own benefits. Controlling access to others by selecting the desired forum in which to claim or arbitrate their rights (von Benda-Beckmann, 1995).

Unregulated resource access, distinct from established rights-based frameworks, refers to acquiring or exploiting resources without societal or state sanction. This can involve theft, coercion, or leveraging positions of power, as seen in military or government officials who may exploit their influence for personal gain. While such actions might be perceived as legitimate within their own structures, they can be viewed as corrupt by others. This highlights that unregulated access mechanisms, including theft and coercion, challenge the notion that legal frameworks are the sole determinants of resource control and utilization.

Opponents of water commercialization frequently invoke a human right to water (Gleick 1998), citing the non-substitutability of drinking water (as it is necessary for life) and justifying it by pointing out that water is embedded in all other human rights (for example, the right to food) (Bakker 2007). Of course, the sixth Sustainable Development Goal aspires to achieve universal access to water and sanitation (UN 2017). Bakker (2007) contends that a right to water does not preclude private sector management or entail that water should be free (but an affordable baseline quantity of water should be accessible) (UNWWAP 2006). As Bakker (2007) argues, pursuing an anti-privatization campaign through a human right to water commits three strategic errors. It conflates property rights with human rights, fails to distinguish different

types of property rights and service delivery models, and fails to foreclose the possibility of increasing private sector involvement in water supply. Indeed, a human right to water is arguably not incompatible with private sector involvement in water and sanitation. Effectively, human rights principles are guideposts for regulation, monitoring and oversight. These principles are critical in private sector involvement in the delivery of water and sanitation services (Murthy [2013](#)).

Scholarship on sanitation rights lags behind that of water rights (Obani & Gupta, [2016](#)). Affordability principles exist for water access (COHRE et al., [2008](#)), but their application to sanitation remains ambiguous. Competing demands for water arise from various human rights, including food, health, and indigenous development rights (Misiedjan & Gupta, [2014](#)), straining freshwater resources. Unlike the UN Watercourses Convention, which provides conflict resolution criteria (UN, [1997](#)), human rights frameworks lack such mechanisms. The SDGs target universal water and sanitation access, exceeding the MDG's goal of halving the unserved population. Sanitation targets were also inadequately met due to a prevalence of unsafe, non-sewered systems (Baum, Luh, & Bartram, [2013](#)). These shortcomings highlight the need for further research, a human rights approach, and pro-poor policies to redefine access metrics that prioritize user and environmental safety (Earth System Governance Project, editor) (Obani & Gupta, [2016](#)).

## Allocation

The conceptualization of allocation within Earth System Governance (ESG) scholarship, as outlined in Table 2, has undergone a dynamic evolution. Biermann ([2007](#)) initially established a foundational principle of allocation, emphasizing fair and equitable distribution of resources across all governance scales (local to global) to facilitate the co-evolution of human and natural systems. This core tenet of distributive justice has been enriched through interdisciplinary and multidisciplinary perspectives, incorporating insights from law (norms and normative pressures), economics (markets and pricing mechanisms), and sociology (social movement and relationship negotiation) (Gupta & Lebel, [2010](#)). Furthermore, the governance of allocation has transcended the initial focus on "synergistic fragmentation," which aimed to bridge the gap between cooperation and high conflict amongst water-mandated actors and governmental entities (agriculture, sanitation, disaster response) (Biermann, 2009). Contemporary scholarship emphasizes the inclusion of egalitarian justice, potentially requiring an overhaul of international multilateralism to achieve alignment between markets, trade, and sustainability goals (Biermann, [2015](#)).

Normative principles of 'sharing water' enshrined in international water law principles of reasonable and equitable utilization and 'no harm' have advanced reform of historic water law principles such as the British common-law riparian principle (formulated in a geography of water abundance) (Dellapenna and Gupta [2008](#)). The historical export of these legal principles through colonization is being corrected through international legal principles and principles such as the 1997 United Nations Watercourses Convention espousing principles of shared management, cooperation and peaceful dispute resolution in South Africa (van der Zang, [2008](#)).

**Table 2**

*Evolution of allocation literature*

2007	Distribution of resources and values that are perceived as fair, especially in relation to the Global North and South	Biermann 2007
2008	Reasonable and equitable utilization; no harm principle; sustainable water use	Dellapenna and Gupta, <a href="#">2008</a>
2009	Synergistic fragmentation	Biermann 2009
2010	How environmental risks and resources are distributed across people and places; fairness is entangled in objectives and means Sharing water Redistribution of risks Social learning to include people and improve fairness	Biermann 2010  Gupta <a href="#">2010</a> Lebel <a href="#">2010a</a> Lebel <a href="#">2010b</a>



2012	Inclusiveness and consistency in global funding Beyond the provision of basic water for drinking and sanitation (access), water should be available for recreation enjoyment and for people to pursue economic opportunities beyond the livelihood needs of farming and food processing. Fair distribution of benefits and costs amongst all actors and stakeholders facilitated through the involvement of diverse stakeholders.	Biermann 2012 Wiek <a href="#">2012</a>
2015	Egalitarian justice with new multilateralism to bring markets and international trade to heel Inclusive development	Biermann <a href="#">2014</a> Gupta <a href="#">2015</a>
2015	How to manage resources and minimize corruption	Habtezion <a href="#">2015</a>
2016	Inclusive development achieves sustainable development by ensuring no trade-offs between economic growth, social well-being, and ecological viability through environmental, social and relational inclusiveness.	Gupta <a href="#">2016</a>
2018	Addressing inequalities in water access and distribution, particularly in marginalized communities	Mukhtarov et al. 2018
2019	Examining the intersection of water allocation policies with indigenous rights and traditional knowledge.	Crow-Miller and Westerhoff, 2019
2020	Integrating Climate Resilience into allocation strategies; ensuring equitable adaptation measures	Nelson and Singh, 2020
2021	Exploring Gender Equity's role in allocation processes; advocating for inclusive decision-making	Khan and Johnson 2021
2022	Assessing Technological impacts on allocation efficiency and equity; addressing digital divide issues.	Li and Wang 2022
2023	Water Resources Allocation: Interactions Between Equity/Justice and Allocation Strategies	Elmira Valipour et al. 2023

Initially, in Earth System Governance, the allocation of water and sanitation was concerned with the distribution of rights and benefits, responsibilities, and risks. However, Earth System Governance evolved to recognize the increasingly interconnected and integrated system of formal and informal rules to steer societies in the direction of earth system transformation within the normative concept of sustainable development to recreate harmonious relationships more conscious of the co-dependency of natural and human systems (Schroeder [2014](#)). After recognizing some of the key challenges raised in the literature surrounding water allocation, a framework for earth system water allocation through inclusive development is proposed. In this section, the key allocation issues of the property right of water (that sets a foundation for allocation) are explored, as well as the framing of water management, the responsibilities of water management, and lastly, the risks of water allocation.

### Property Rights

Water's pervasiveness defies the establishment of definitive spatial, scalar, and usage boundaries. While Bakker ([2007](#)) characterizes water in its natural state (e.g., rainwater) as a non-excludable public good, it becomes rivalrous in consumption when scarcity arises. These characteristics of water are not static but rather demonstrate spatiotemporal dynamism. Potable water, for instance, exhibits a distinctly local nature. The framing of water as an entity is demonstrably context-dependent and lacks universal uniformity.

Diametrically opposed conceptualizations of water exist. Certain nations and communities view water as a "common" good, while others, like Chile (Hurlbert, [2018](#)), treat it as a tradable "commodity." For

Indigenous peoples, water holds a *sui generis* status, representing a unique collective right to land and water. The legal frameworks of colonizers fail to capture the intricate web of reciprocal relationships between Indigenous peoples and their lands, as exemplified in Hamar (1992). Water thus occupies a spectrum, ranging from a freely accessible "public" good with associated human rights to a "private," exclusive, or commercial good. These contrasting framings determine whether water users are perceived as rights-holding citizens or customers defined by their capacity to pay. These frames inform water property rights and management models outlined in Table 3.

**Table 3**

*Dialectic frames of water*

Water Frame	Commons, <i>sui generis</i>	Public	Human Right	Citizen
Opposing Concept	Commodity	Private/market	Commercial Good	Customer

Although British riparian law and rules around the use and access to water resemble water as a 'commons,' these rules evolved in a land of abundant water. In areas such as South Africa, India, Canada, and the United States of America, where culture, context, and geography differed, their application was often disastrous (Dellapenna and Gupta 2008). Over time, new rules evolved to respond to dry conditions and development needs in Canada and the United States of America, including a first-in-time, first-in-right scheme (Percy 1977) and, in South Africa, a shared management of water (van der Zang 2008).

In certain jurisdictions, features of all of the water property rights frameworks listed in Table 4 exist. In Canada, water extraction (surface and groundwater) is characterised by water licences that award temporal bundles of water rights based on three property rights models (common good, public good, and market commodity) (Hurlbert 2009). The user-based management model (employed by irrigation associations) regards water as a common property managed by water users with licences or rights, whereas the market model (available in certain river basins in Alberta) regards water as a private property/commodity to be allocated and reallocated through private transactions (H).

International law supports these principles regarding water resources. The concept of equity and priority of use aims to preserve freshwater as a shared resource, as outlined in various international agreements such as the UN Watercourses Convention of 1997. This convention mandates states to utilize, develop, and safeguard transboundary watercourses fairly and reasonably. Additionally, the notion of public water property is reflected in numerous international treaties, including the UN Watercourses Convention of 1997, the Helsinki Convention of 1992, and the United Nations Economic Commission for Europe (UNECE) Water Convention of March 17, 1992. These agreements require states to collaborate, share data, and coordinate the management of river basins.

### Framing Water Management

The institutional framework governing and ultimately allocating water resources reflects the underlying property rights regime. A "commons" property interest, for example, is typically associated with a decentralized, user-based approach. Decisions are made at the local level through participatory mechanisms, fostering accountability among users. In rural settings, agricultural producers and small communities often manage groundwater resources through such common-pool arrangements (Warren, 2013; Hurlbert, 2018). Similarly, community drinking water supplies may be governed as common-pool resources with community-controlled management structures (*ibid.*). This collaborative approach is frequently referred to as adaptive co-management (Davidson-Hunt et al., 2009). In contrast, water classified as a public good is managed by a centralized agency model, often through a government crown corporation or ministry. User participation in this model is typically limited, although some level of consultation may occur. Finally, water, viewed as a commercial good, is administered through a market-based model governed by market forces and accessible primarily to those holding water rights (Hurlbert, 2009). The ongoing debate surrounding the categorization of water as a commons, a public good, or a commodity is often framed in terms of pricing mechanisms, regulatory frameworks, management objectives, access rights, and the ultimate beneficiaries.

**Table 4***Commons, public good and commodity*

Principle	Commons	Public Good	Commodity
	Non-excludable but rivalrous	Non-excludable and non-rivalrous	Excludable private property
Definition	Natural resources managed by a community or society rather than individuals (UN <a href="#">1997</a> )	Commodity or service provided without profit to all members of society (Oxford <a href="#">2017</a> )	Economic good
Pricing	Cost recovery	Free or lifeline	Supply and demand pricing
Regulation	Custom, practice, agreement, common property protocols (Ostrom <a href="#">1992</a> )	Command and control	Market rules
Goals	Social equity and livelihood	Public good	Efficiency and water security
Management	User-based approach	Government agency approach	Market
Access	User-based	Human right	Market participant
End-user	User	Citizen	Consumer

The commodity or economic goods discourse is presumably aimed at ensuring that water is efficiently allocated. Freshwater has high economic value even though this may not be reflected in the tariff that users pay in some contexts within both industrialised and developing countries (Obani and Gupta, [2014](#)). Pricing discussions and economic goods discourse could result in the commodification of water and denial of access to poor and vulnerable populations that are relatively low-value users of water when compared to rich economic interests like the manufacturing industry. The economic goods discourse may, therefore, be at odds with the human rights discourse, except the poorest of the poor can access lifeline water services and free basic sanitation services that are supported through a system of progressive pricing and cross-subsidies, for instance (Obani and Gupta [2014](#)). One solution is to recognize the human right to water and sanitation and prioritize this over other uses. After meeting this need, surplus water could be allocated using the frame of the commons, the public good, and perhaps a commodity in certain situations as appropriate to the local context.

The cost of infrastructure and service upgrades often brings focus to these issues. The OECD estimates that USD 6.7 trillion is needed to renew and upgrade water infrastructure by 2050 for water supply and sanitation, and that bill could triple by 2030 if a wider range of water-related infrastructure is included (2015). Historically, overlooking the economic value of water has led to its underestimation as a resource, resulting in stressed infrastructure and inadequate conservation efforts. Introducing a water market addresses this issue by factoring in environmental impacts through pricing mechanisms, ensuring full-cost recovery, and acknowledging the true expenses associated with water use, such as infrastructure maintenance and source protection (Katz, [2007](#)). However, there's a potential downside: making water a tradable commodity might render it unaffordable for certain populations, potentially leading to a phenomenon known as 'water poverty.'

There's significant debate surrounding the reliance on markets as the primary means of water management, with scholars like Dellapenna ([2008](#)) arguing that markets can only have a limited, secondary role in this domain. While many governments have shifted towards private entities for water service provision instead of public monopolies, recent experiences in urban water utilities in developing nations highlight shortcomings in these models, such as opaque contracts and governance issues (Gupta, [2013](#)). These problems are exacerbated by weak regulatory frameworks, lack of information, distorted incentives, and insufficient commitment. Araral ([2008](#)) emphasizes the need for enhanced governance to ensure both proper pricing of water and effective management. However, there are instances of successful



public-private partnerships delivering essential services in countries with limited government capacity, as documented in case studies from Bangladesh, India, and Kenya. These initiatives often employ participatory methods to foster legitimacy and consequently achieve success, emphasizing the importance of providing resources for capacity building, implementing robust monitoring mechanisms, and tailoring services to local contexts (Beishem et al., 2014).

### Conceptualising Water Management at Different Scales

Water framings have sometimes evolved from the local level (for instance, the human rights discourse which emerged from local water justice movements), regional level (such as the equity and priority of use that is contained in bilateral and multilateral treaties), or the international level (such as the economic good, and the millennium development goals and the sustainable development goals). The consideration of different framing at different levels could advance an enabling framework that supports access, allocation, adaptation, and capacity building by advancing a symbiotic relationship between access and allocation. For instance, a community could access water and manage it as a commons, advancing the human rights to water and sanitation for all community members. A regional or provincial government might manage the surplus using a frame of public good managing the resource for the benefit of the greater area. In this way, the important human rights to water and sanitation could be recognized, and robust consideration of water above and beyond this should be made when making societal decisions surrounding allocation. Despite their different origins, the various framings and discourses often converge in water governance within and across different levels of governance, resulting in either tension because pluralism is characterised by indifference or competition in the interaction of the discourses, or cooperation where pluralism is characterised by accommodation or mutual support between the discourses (Obani and Gupta 2014).

When Asian water governance was re-framed with water grids and interlinking projects through regional cooperation, the cost to the environment was displaced, and people were adversely affected by being rendered effectively invisible to the national level and private sector benefits (Lebel et al. 2010). Innovative multi-level governance remedying this would provide an enabling framework supporting local adaptation and capacity building (ibid.). As centralized overarching governance is unlikely and possibly undesirable, higher-level initiatives might include establishing think tanks and advancing a cosmopolitan perspective promoting sustainable water development (Gupta and Pahl-Wostl 2013).

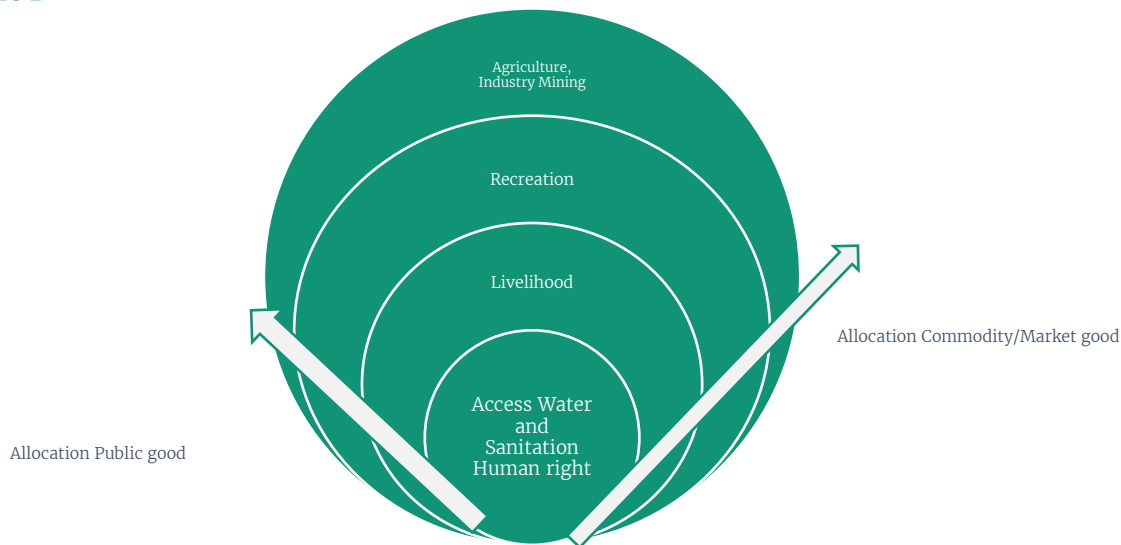
Higher levels of government might enforce full-cost water pricing and a water label for intensive water products to facilitate appropriate pricing (Hoekstra 2010) or water footprint assessments (Hoekstra 2016; Pfister et al. 2017) for uses in excess of the human right to water and sanitation. These higher levels might coordinate water when there is a mismatch and problems in relation to watershed scale and boundaries, issues of accountability, participation, or relations with other levels of government or nation-states (Davidson and de Loe 2014). When some stakeholders are too weak or have little power to meaningfully influence the water and sanitation governance landscape, a higher level of government might enforce consent rules. If local dialogue fails to integrate international law principles of 'no harm' and 'reasonable and equitable use,' action by a higher level of government might be warranted.

Access to drinking water and sanitation services is fundamental for human flourishing, dignity and life in the Anthropocene. Allocation should first ensure these basic water needs are represented and enforced by human rights. Hard limits of adaptation may be present if water is unavailable to meet these needs. Thereafter, surplus water is shareable (Gupta and Lebel 2010) and communities and governments make key decisions on the allocation of this surplus water. A proposal is presented in Figure 1. After meeting normative goals of water access or basic human rights to water and sanitation, it is proposed that livelihood sufficiency and economic opportunity be considered. Focusing on human well-being, people should have access to sufficient quantity and quality of water to sustain basic livelihood needs and inter and intra-generational equity (Wiek 2012). Next, recreation and enjoyment of people can be considered, and societal decisions can be made regarding the use of water for business, mining, industrial processing, etc. It is within this outer range of uses that soft limits of adaptation might appear, and it is necessary to ensure sustainable development. In achieving sustainable development, decisions surrounding the use of water in these activities should entail no trade-offs between economic growth, social well-being and ecological



viability (Gupta 2016). An example of this is in Argentina, where agricultural producers dependent on glacier-fed river water for horticulture and viticulture successfully passed a law protecting glaciers and preventing mining that might negatively impact the glaciers and the agricultural producer's livelihoods (Hurlbert 2018). The process of making decisions surrounding trade-offs involves the inclusion of diverse demographic, geographic, interest-based, and representative stakeholders in water management decisions through inclusive development.

Figure 1



### Inclusive Development and Water Allocations

The management and distribution of water resources (water governance) plays a critical role in determining equitable access and allocation. The current water crisis is not primarily a problem of physical scarcity but rather a crisis of governance. Water Governance Partnership (GWP, 2000) defines water governance as the encompassing system – political, social, economic, and administrative – responsible for developing, managing, and distributing water resources. However, the complex challenges of achieving water-related development goals, such as equitable access, sanitation targets, and reliable service provision, extend beyond the sole capacity of governments (Kuzdas et al., 2014).

Robust capacity to manage water at the community and local level has important implications for access to clean and secure water. Flexible community-based water management systems tailored to specific contexts supported by various organizations at different scales and levels are important for adaptation to climate change and response to extreme events (Plummer 2009; Olsson et al. 2004; Armitage et al. 2007). This participation allows for learning and advancing resilience by building shared value, development pathways, and undertaking tasks (Plummer 2009).

The concept of sustainable development, aiming to meet the needs of present and future generations through environmental and social considerations, has been established for decades. However, recent economic downturns, such as the global recession and shifting global political landscapes, have prioritized economic growth and employment at the expense of sustainability. Inclusive development emerges as a counterpoint to these prevailing trends, rooted in ecological modernization and neoliberal capitalist approaches (Gupta, 2015). It advocates for inclusive governance principles encompassing limited territorial sovereignty, equitable distribution of resources, and sustainable stewardship (Gupta, 2015). This framework strives to achieve sustainable development without compromising economic prosperity, social well-being, or environmental health (Gupta, 2016). In the context of water management, inclusive development recognizes the human right to water access and prioritizes the protection of local control and ownership through environmental inclusivity (Gupta, 2016). This principle acknowledges the concept of "common but differentiated responsibility," where developed nations bear a greater burden in addressing environmental challenges. Additionally, relational inclusivity calls for a re-examination of existing inequities in water access and sanitation allocation (Gupta, 2016).

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