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Water Ontologies and Hydrosocial Perspective: New Approaches for Understanding Water Controversies of the Ing River Basin, Northern Thailand

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Abstract

Through a hydrosocial perspective, this research illustrates how political contestation between different networks of actors reflected the meanings, values, and water ontologies. This research employs ethnography to study networks of actors involved in water controversies and tensions over the hydraulic infrastructure project in the Ing River Basin. The network of project proponents, including a state-led hydraulic institution, experts, and other actors, see Water as merely a natural resource for economic development. The proponents reduce water to its materiality and physical dimensions. Water is tied with the idea of development that values large-scale infrastructure, and top-down bureaucratic management embodied scientific knowledge in controlling water, mainly for economic purposes. Meanwhile, project opponents, including civil society organizations, environmental NGOs, and some communities, understand water as living. Living water is produced through Thai Baan research, ecological campaigns and ceremonial practices that show rivers as sacred. Living water is socially, environmentally, and culturally embedded and more than a resource

for exploitation. This paper argues that water-related conflicts in the Ing River Basin not only reflect how water is managed but are also rooted in such ontological differences. Different networks produced different versions of water. Therefore, understanding water ontologies through a hydrosocial lens could provide a new perspective on water-related conflicts and controversies.

Keywords: Water-related Conflict; Modern Water; Living Water; Water Ontologies; Hydrosocial Perspective

Introduction

Similar to other countries in the Mekong region, Thailand shifted its focus towards industrialization and modernization in the early 1960s to attain developed nation status. The country's export-oriented industrialization strategy proved successful, enabling Thailand to become one of the strongest economies in the region. However, this achievement came at a cost, as social problems and environmental degradation arose due to large-scale development projects such as hydropower dams, irrigation schemes, and other infrastructure initiatives. These projects have been scrutinized for placing significant stress on nature (Santasombat, 2011; Buch-Hansen, et al., 2006). In recent years, as a result of the extensive exploitation of natural resources for mainstream development, environmental concerns have become a priority for various stakeholders, including local communities and civil societies (Yamsiri, 2014; Manorom, 2022). Consequently, environmental activists, civil society groups, and non-governmental organizations have emerged to challenge the state's hegemonic control over resources, particularly in regard to large-scale infrastructure projects because those large-scale development project because those projects often generated tension between local communities and developers, and the exploitation of nature.

This research was conducted in the Ing River Basin in Northern Thailand. The Ing River Basin, especially the lower part, has become a hotspot for different groups with varying interests in water and river management. In this area, the grassroots environmental movements and civil society have dedicated themselves to environmental issues for an extended period. These groups collaborate closely with communities along the Ing and Mekong Rivers, addressing various environmental challenges that these communities face. The Ing River was the first river basin to establish the "People Council," a community-based resource management mechanism that departs from the top-down state-led approach to natural resource management (Wises, 2019). The people council has been actively advocating for changes to development projects due to their conflicting interests in land and water use (Fung, et al., 2019; Yong, 2020; Transborder News, 2022; Thaipost, 2022).

This research explores water politics in the Ing River, Northern Thailand, by delving into the hydrosocial perspective and water ontologies. These theoretical frameworks, emerging from the political ecology of water, provide a more comprehensive and practical approach to understanding water governance and policy (Blaser, 2013; Lavau, 2013; Flaminio, 2021). It challenges the assumption that there is a single reality with various cultural representations or perspectives by acknowledging the existence of water ontologies instead of a singular version of water (Blaser, 2009; Blaser, 2013; Flaminio, 2021). According to Yates, et al. (2017), there are multiple water realities and ways of interacting with water, and these versions of water are not simply tied to different knowledge systems. The debate around water ontologies also highlights the need to question the modernist ontology's singular reality, which is often presented as a universal truth but is rooted in Western society (Linton, 2010; Linton & Budds, 2014). Therefore, this paper aims to capture how tensions and controversies over the case study reflect the existence of plural ontologies of water underlying these conflicts

and controversies rather than framing conflicts between the state and protesters as resulting from the divergent interests of different groups.

This research delves into two areas of study - water ontologies and hydrosocial perspectives - that contribute to a more comprehensive comprehension of water in the ongoing global discourse on water politics (Lavau, 2013; Yates, et al., 2017; Wilson & Inkster, 2018). The research endeavors to contextualize water-related conflicts by utilizing these theoretical concepts and recommends a policy procedure that can aid in understanding the water-related conflict in the Ing River Basin. This paper asserts that water-related conflicts and controversies in the Ing River Basin are not just about water allocation, sharing, or participation process-related issues. These conflicts are fundamentally rooted in ontological differences, as diverse social networks generate and adhere to varying values and meanings of water.

Research Objectives

1. It aims to demonstrate the political contestation of the Kean Chareon Regulator Project and maps social networks that involved water politics in the Ing River Basin.

2. It aims to analyze how hydrosocial perspectives and water ontologies can be employed to understand water-related conflicts and controversies in the Ing River Basin.

Research Methodology

During my time conducting fieldwork, the Kean Charoen Regulator Project (KCR) had almost completed construction, bringing an end to the conflicts and contestation surrounding it. However, I used this project as a starting point to explore the intricate social networks involved in water politics in the Ing River. These networks hold and share different water practices that often contradict. To better understand these networks and their practices, my research is divided into two parts. The first part involves identifying and mapping the social networks

involved in the advocacy and political contestation of the KCR dam and the Ing River Basin. The second part delves deeper into these networks by studying their water practices in politically contested areas. By analyzing the meanings and values of water that these networks hold and share through the hydrosocial perspectives, I aim to gain a more comprehensive understanding of water politics in the Ing River.

This research employs observations and in-depth interviews as core methods for data collection. I gathered information from various actors, focusing on events and activities related to political contestation, environmental campaigns, cultural ceremonies, agricultural practices, and other water-related issues in the Ing River Basin. The project planners and supporters interviewed included officers from the Royal Irrigation Department (RID), the project's officers, engineers and technicians. The network of project proponents also includes local politicians, government agencies, farmers, land and machine owners, and agribusinesses identified as project supporters. I also engaged with the project opponent network, including civil society groups, committee members, academics, researchers, government agencies, and other stakeholders who disagreed with the projects. The total number of interviews is 50 interviews. The data collection was done between February 2021 and January 2022, allowing the author to observe daily practices and hold conversations with participants in natural settings. Document analysis was also employed, including a feasibility study and master plan on water management, as well as data available on the official websites of institutions from both networks regarding the KCR project and water issues in the Ing River Basin. Additionally, six focus group discussions, including participants from both networks, were used to collect, confirm, and validate the data. There were 3-6 participants in each focus group, including one group from the Sao Wa wetland conservation group, a group from the Boonrueang wetland committee,

the irrigation canal committee, a woman group, a group of landless people, and a group of local community leaders.

Results

The Ing River Basin

The Ing River Basin is the largest tributary of the Mekong River in Northern Thailand, consisting of diverse landscapes like mountains, forests, plains, ponds, and rivers. Of particular importance are the wetland forests along the river's lower section, which provide critical food sources for local people and support fish migration biodiversity. The river basin is also home to six ethnicities settled in 62 communities, with the majority being farmers who rely on water from the Ing River and irrigation schemes. Spanning 260 kilometers (roughly 161.56 miles) from Phayao province to Chiang Rai province, the Ing River Basin is divided into three parts: upstream, middle stream, and downstream. The entire watershed encompasses an area of 4,773 square kilometers (Wajjwalku, 2019; Wises, 2019; Mekong Community Institute, 2019), making it an integral part of the Mekong region and a vital resource for local communities.

From a governmental standpoint, the Ing River Basin presents an exceptional opportunity for economic growth due to its connection to the Mekong River, an international waterway linking to neighboring countries. The basin's location on the border makes it an attractive area for expansive state-led development initiatives and cross-border collaboration, both of which contribute to national and regional growth. However, tensions have arisen among various groups and local actors throughout the river basin due to the involvement of both state and private entities in the transformation of the river for development purposes (Ngaonoi, et al., 2019; Yong, 2020; Wises, 2023).

The tension and contestation over water and natural resources in the Ing River involves different actors, including actors and institutions

from local institutions, government agencies, and international organizations (Transborder News, 2022; Mekong Community Institute, 2019; Fung, et al., 2019; Wises, 2019). After a prolonged period of tensions and controversies surrounding development projects, a network of local actors has emerged to address issues related to natural resource management. The Ing River Basin stands out as the only river basin in Thailand where a people's council - the Ing People Council (IPC) - has been established to lead efforts in environmental management from the bottom up. Led by civil society and local communities, the IPC is working tirelessly to promote community-based environmental management at this scale (Mekong Community Institute, 2019; Ngaonoi, et al., 2019; Wajjwalku, 2019; Yong, 2020). These civil society groups wield significant influence in water politics not just in Thailand, but across the wider Mekong region as well (Santasombat, 2011).

Networks of Actors Involved in the Tension and Controversies

As previously mentioned, this study focuses on the tensions and controversies surrounding the Kean Charoen Regulator (KCR) project. The project aims to map out the various actors associated with both sides of the debate on public land, specifically the Sao Wa Village Wetland Forest (ป่าชุมชนบ้านซาววา). The Initial Environmental Examination (IEE)) was completed in 2013, and construction began in 2017, with an expected commissioning date of 2026 (Medium Scale Irrigation Construction Office 2, 2022). The KCR is one of many hydraulic infrastructure projects proposed by the Royal Irrigation Department (RID) to address water shortages in the Ing River Basin. It is part of a larger water resource development plan in the Ing River, which includes several small and medium projects (refer to Figure 1). However, some local communities have expressed concerns, protests, and apprehension about the proposed projects, as some community members worry about the potential impact on their lives. Some affected communities from the same master plan have staged protests, barring the RID and consultant

companies from entering the areas, as some community members feel that their voices and concerns have not been reflected in the environmental impact assessment (Transborder News, 2022; Thaipost, 2022).

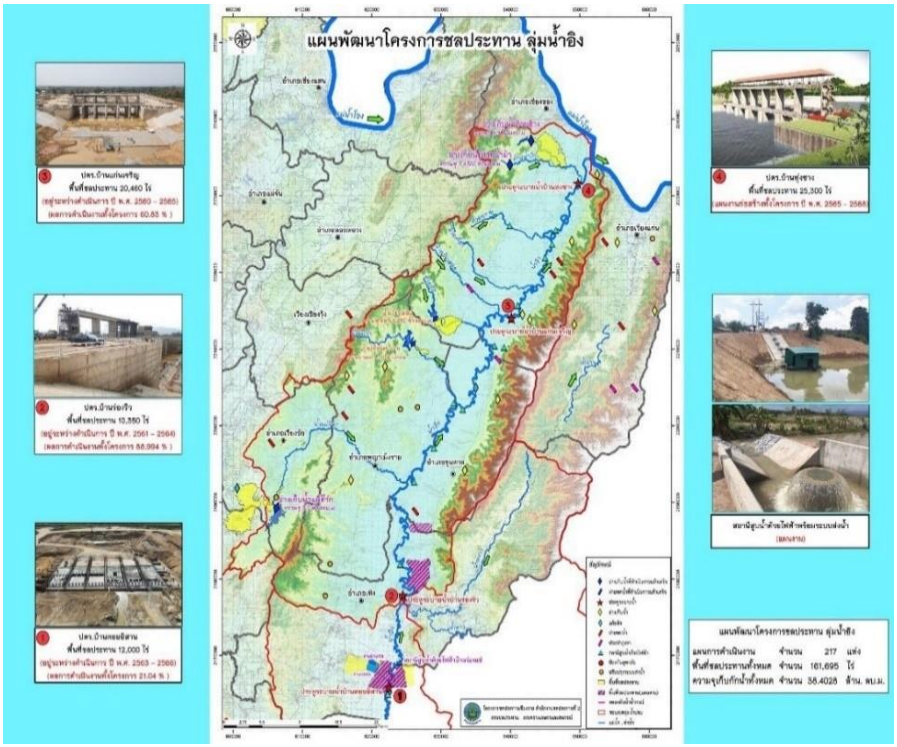

Figure 1: The Complete Plan for Solving Water Shortages in of the Ing River Basin (RID, 2021)

The project proponents, led by RID, included project planners, consultant companies and scientific experts who produced feasibility studies and environmental and social impact assessments. The project was also supported by local and national politicians who aimed at improving economic livelihoods. Some local actors such as rice farmers and agribusiness workers were also interested in the project as it could store and distribute water, which would help increase income through

more significant agricultural areas (RID, 2013). Therefore, the network involved state water institutions and officials, experts from various fields, politicians, construction and consultation companies, and some local actors who shared an interest in water as it needed to be stored, controlled, and managed by the regulator dam. The overall goal was to increase water security for agricultural activities and rural economic development.

Before the construction started in 2017, there were a series of tensions and controversies surrounding the KCR project. During the time, several project opponents, including the wetland forest conservation group of Sao Wa Village, lost their customary wetland that villagers had protected for more than 200 years because some part of their wetland forest was converted into a construction site. In response, the conservationists contacted local NGOs focusing on environmental issues in the Ing and Mekong rivers to strategize how to cancel the project. The critical actors in this network were the secretariat members of the Ing People Council and their associated groups, such as the Rak Chiang Khong Conservation Group, the Living River Association, and other local actors. These individuals and groups are well-known for their efforts in preserving culture, promoting community-based resource management, and protecting the environment. These actors have worked with communities impacted by large-scale development projects, including dams in the Mekong River, a special economic zone (SEZ), and water diversion projects. This group has also supported local communities who opposed hydraulic infrastructure like reservoir projects (Transborder News, 2022). On a broader scale, upon the KCR case, the network of environmental NGOs in the Ing River Basin also collaborates with international NGOs, foreign donors, academics, and some government agencies to achieve their goals of protecting the ecosystem of the Ing River.

Figure 2: The Picture of the KCR Construction Site on Baan Sao Wa wetland Forest (Source: Researcher, 2021)

Overall, the project planners advocate that the project will lead to increased yields for commercial agriculture, thanks to the water being stored behind the regulator and the implementation of modern irrigation systems. The project planners view these hydraulic advancements as enhancing economic opportunities and benefiting society. However, opponents of the project contend that local livelihoods are more varied than just commercial agriculture. Civil society groups, local NGOs, and some local actors stress the importance of fisheries, wetlands, traditional and cultural practices, and other related aspects. As a result of these contrasting opinions, the two groups have distinct perceptions of the relationship between water and local livelihoods. This dispute underscores the political controversy surrounding these networks and their differing views on the importance of the Ing River.

Enacting 'Modern Water'*: Project Proponent and Their Water-as-resource

The master plan for solving the water crisis in the Ing River started when rice farmers and local politicians corresponded with various government agencies to request improvements to the water system in the lower Ing River Basin (RID, 2013). The demand for irrigation water has been consistently high in recent decades, particularly after the expansion of rain-fed rice. Also, over the last decade, the Mekong region has been grappling with severe droughts and low-flow conditions caused by multiple dams in the upper Mekong River. This water scarcity was presented as a crisis that necessitated development initiatives to resolve. The water proposal put forth by the RID highlighted the issue of wasted water flowing from Thailand's territories, water shortages in agriculture, and the serious implications of climate change. Hydraulic infrastructures were presented as the only viable solution to the water crisis, crucial for improving rural community development and serving national interests in development. Water was framed as a natural resource or capital for economic growth, closely linked with concepts of progress, growth, and modern society (Swyngedouw, 1999; Linton, 2014).

RID, as the leading water agency, responded to requests from local farmers by enacting a modern Water crisis framing strategy, proposal making, construction, and implementation of projects. The process involved state officials and scientific experts, as well as consultant companies and government agencies. Their approach was based on technical knowledge and an understanding of the hydrological cycle rooted in scientific paradigm. This river has been plagued by floods and droughts, which have had a significant impact on the local economy. These water experts have sought to address this crisis by

* Modern Water refers to a version of water that reduces it to its mere material, physical dimensions, namely H2O, and rendering water separate from Society (Linton, 2010).

analyzing water flow and developing hydraulic infrastructure based on scientific and quantitative data. This infrastructure is designed to regulate river flow, minimize the risk of floods and droughts, and provide local communities with a more reliable water supply. The experts behind the plan have meticulously calculated water quantity and quality, emphasizing the physical aspect of water and its materiality (Linton, 2014). Ultimately, their efforts aim to provide local communities with a more reliable and less threatening from disasters such as flood and drought to secure the need for water or rice farmers because these areas are shifting agricultural practices to intensive commercial rice agriculture, considered the primary source of income locally, heavily relies on irrigation schemes. These water practices, mentioned above, reflect that their version of water embodied techno-scientific knowledge, a modern bureaucratic system, and the modernist way of thinking that emphasizes predictions to serve water users (Linton & Budds, 2014; Flaminio, 2021). Strict water control by infrastructures such as the KCR project is considered successful tools in controlling nature.

The project planners pointed out that the irrigation water increased productive agriculture produced and circulated among actors who supported the project. The project proponents focus on water security, productive agriculture, and social issues like reduced out-migration and economic inequality as the goals of modern Water. The regulator project was portrayed as a tool to change social conditions in contemporary society, reducing inequality and social problems. Rice farmers are considered poor and low-opportunity groups and thus argued to benefit from the regulator project. However, this network's understanding of water excludes ecological, natural, and cultural contexts. It is rooted in modernist ontology, with its nature and culture dualism. Importantly, nature is viewed as a commodity and resource for human consumption. So, the modern way of thinking and seeing nature, water in my case, is revealed through the hydraulic infrastructure like the

regulator dam project. The practices of producing modern Water embodied a modern way of thinking, techno-scientific knowledge, modern bureaucratic system, discourse, and the modernist way of thinking as should be predicted (Linton, 2014; Linton & Budds, 2014)

Living Water and Environmental Water Produced by Project Opponents

Santasombat (2011) and Wises (2019) have highlighted the actors associated with the network of opponents as a movement of local actors or grassroots movements involved in local civil society, environmental civil society, and transboundary civil society, who have made alliances with other civil society organizations across the Mekong region and outside. The civil society of the Ing River, which is associated chiefly with IPC and its networks, produces research and participates in regional and international events, including the recent global debate on the rights of nature and water rights. This group organized environmental campaigns and cultural and ritual ceremonies to present different meanings of water, that water is a living entity that should be respected and protected by laws.

The production of knowledge plays a vital role in political engagement, especially in protecting rivers (Pomun, 2020; Sangkhamanee, 2010; Middleton, 2022). The network generates data and research by adopting the Thai Baan research approach, which originated from the conflict surrounding the Pak Mun Dam development project. Local communities resisted this government-led initiative, leading to the development of Thai Baan research, which has become a promising methodology for knowledge production. This approach is empowering local communities and driving political purposes and action (Heis & Vaddhanaphuti, 2020). Moreover, it challenges the dominant Western knowledge systems that prioritize large-scale infrastructure and irrigation schemes (Linton, 2010; Flaminio, 2021). By considering the intricate relationships between local practices and water, approaches like Thai

Baan research offer alternative perspectives, values, and meanings of the Ing River as a water resource that is part of ecosystems, cultural practices, and non-human entities. It is noteworthy that Thai Baan research empowers villagers to become researchers, with NGOs and academics serving as facilitators. This model is well-suited for advocating community-based resource management.

The Ing People Council members, especially its permanent secretariats, including NGOs, academics, and civil society groups, are involved in many environmental and social campaigns on natural protection, including anti-dam movement and rapid blasting plan in the Mekong River (Ing People Council, n.d.). It works as an alliance that shares the same interests, including protests over the water diversion projects in the Salween and Mekong River basins, which produce knowledge through co-production and Thai Baan research. This group disagreed with RID's statement that water should not flow unused to other countries. One of the objectives stressed in the water proposal mentions that the KCR project could prevent water from the Ing River from flowing unused. This reflects that water materiality is considered distinct from modern state territories and development goals rather than the larger concept of ecosystem in the Mekong River basin. Water is embedded in the ecosystem. The Ing River is a part of the ecological context of the mainstream rivers.

The modern Water's and the separation of society from water have been brought into the environmental campaigns and discussed among civil society. Some actors point out that, through state-led water management dominated by engineers and scientists, these groups treat water as namely an objectified, neutral H2O/Water embedded in and (co)productive of a universalized 'economic modernization' paradigm (Linton, 2010; Linton & Budds, 2014). Civil society refers to H2O as water-as-resource that dismisses other potential water values. H2O refers to

material water in its physical dimension and is excluded from ecological contexts as an essential part of it.

Water also becomes a movement and engages with the debate on the rights of nature. Civil society draws local cultural and ritual practices related to water, such as prolonging the river for longer life and healthy river ceremonies (see Figure 3). There is also a worshipping ceremony for praying for respect and asking for forgiveness from Pra Mae Khong Kha (river goddess). The group also helped local communities by hosting the appeasing ceremony of Phi Khun Nam (watershed guardians) before starting the farming season. These ceremonial practices reflect that the Ing rivers are not only recognized as material water, but the river is a living entity. Civil society groups use these ceremonial practices as political campaigns to engage with the idea of the personhood of rivers and advocate for the rights of nature. These ceremonial practices reflected that, for this network, nature and culture are not divided. This understanding, in contrast to a modernist ontology, reveals how water is socially and culturally embedded. At the same time, modernist ontology subjected these practices from local actors to cultural modes of water within the same modern world instead of another meaning and being of water as it is complex and embedded in culture.

Figure 3: The Cultural Ceremony that Local People Host for Healthy Rivers and Wetland Forests (Source: Researcher, 2021)

Discussion

Water-related conflicts and controversies are not only competing and divergent interests but also different values, meanings, and ontologies of water that are contested. The networks that are politically contested enact worlds situated in different ontologies (Blaser, 2009), but only some ontologies deny others (Götz & Middleton, 2020); this is where ontological politics is involved (Mol, 1999). Water-as-resource from the RID-led network is tied closely with national development plans and rural economic activities, is sustained by powerful actors and institutions, and the domination of scientific knowledge. Framing water as a resource allows RID to frame the water crisis as a technical challenge and contends that hydraulic infrastructure is needed to fix those crises, allowing expert scientific knowledge to have more power in controlling nature and dominate water management (Descolar, 2013;

Chuengsatiansup, 2016). Water's materiality and its physical dimension are prioritized as the internal relations of water and other actors are neglected. Moreover, these works from the RID also reduce water to an economic resource, remove water from local contexts and suppress other essences of water that exist on the ground. Different values and meanings of water were suppressed, including respecting water, sacred water, and water as a movement.

This paper highlighted that the modern Water of the RID narrows the value of water to its economic dimension, focusing on how water is stored and controlled by several regulators or small and medium dams to pump paddy fields. Meanwhile, local people and civil society maintain a value of water that is simultaneously a resource that sustains local livelihoods and local economies but also recognizes cultural and natural values. The water-as-living of civil society focuses on water's mobility, free flow, and connections to the Mekong River and biosphere, engaging with the rights of nature. However, farmers and villagers do not see water as a resource and only commit to a degree to the rights of nature and water as a movement. Their water is more complex. Local livelihoods become an area of contestation where the RID and civil society try to stabilize their ontologies because both groups claim to improve local livelihoods. Moreover, this understanding also reflects that there is also ontological cooperation between them, which is beyond the scope of this paper to discuss.

Body of Knowledge

According to Linton and Budds, the type of water varies based on the hydrosocial assemblages in which it exists. This insightful observation implies that water is not a universal substance but rather a product of different networks that can sometimes contradict one another. By adopting a hydrosocial perspective, we can move past the traditional scientific view of water as a single, untouchable entity and instead recognize it as a fluid with multiple variations. This approach allows us

to view water as a specific kind of substance that is produced by specific water-society relationships. However, since different hydrosocial assemblages produce different versions of water, it raises the question of whether different groups or individuals share the same understanding of water when discussing it.

In my analysis of water issues in the Ing River Basin, I examine the tensions and controversies that have arisen due to differences in various aspects. Specifically, I explore the differing networks of actors involved and their respective interests in the Ing River, as well as the varying ways in which individuals relate to and conceptualize water. Through a detailed examination of water conflicts in the Ing River Basin, I demonstrate how different scales have played a role in the disputes. Ultimately, it becomes clear that the different networks of actors have produced distinct versions of water, as previously discussed in my examination of how different hydrosocial assemblages produce differing types of water.

Conclusion

This research builds upon previous studies on water ontologies and hydrosocial perspective (e.g. Yates, et al., 2017; Wilson & Inkster, 2018; Linton, 2014; Götz & Middleton, 2020) that have opened the conversations and drawing these two bodies of literature together to understand hydropolitics in the way that it can be more than just divergent interest in water. This paper argues that the global debate on multiple water ontologies and the new hydrosocial approach enhances the debate in water controversies of the Ing River, developing new insights and new ways of understanding water-related conflicts. Through the lens of hydrosocial perspectives, water-related conflicts suggested that there is the possibility of politics of water-related worlds, or water ontologies, that co-exist and mingle, not just different perceptions, perspectives of water, or different knowledge systems tied with water.

This research asks how bringing attention to water ontologies and water-society relations could contribute to water governance. The approaches also enhance water studies related to water conflicts and controversies. Taking ontologies of water could recognize and embrace other water ontologies, which also refer to different modes of being or relating to water. Water-as-resource and living water could be brought to rethinking water governance in the Ing River Basin, establishing water laws that come from local contexts. Water policy should be set from a dialogue that includes stakeholders and understanding how stakeholders relate to and are with water. Otherwise, water conflicts remain, and modern Water suppresses other water beings, which means it suppresses the way other beings relate to water, too.

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