

River ethics: Reimagining and redefining human interactions with rivers

Rivers, as natural entities that have been part of the Earth since its inception, are integral to the water cycle, gathering rain from the sky to create freshwater currents across the land. Over eons, they have sculpted the Earth's terrain, giving rise to a diverse array of landforms—waterways, valleys, plains, lakes, wetlands, and estuaries—thus bestowing upon our world its current visage. As they perpetually flow, rivers facilitate the transfer of materials, energy, and information along the water corridors, between the land's surface and aquifers, and cross the river channels and their riparian areas. They cradle a rich tapestry of life, and it is alongside these watery arteries that human civilization was born, evolving into a pivotal force that influences and, at times, dictates the future of rivers and the global ecosystem. Today, our civilization has developed into a crucial stage where the dire water crises are threatening the sustenance of all human beings, which should prompt us to reflect upon our connection and interaction with rivers from the perspective of ethics within the framework of which all such waterways should be managed on a sustainable basis that benefits both humans and ecosystems.

1 | HISTORICAL BACKGROUND

In the English language, the origin of the word ethics comes from the Greek, *ethos*, meaning moral philosophy. In Western Civilization, ethics started with the sophists in Greece around the 5th century BCE. The sophists were mostly a group of itinerant intellectuals and professional educators who toured the Greek world, teaching students many subjects. Current knowledge of the sophists comes primarily from the writings of Plato and Aristotle. Sophists were mainly philosophers and teachers and taught their students *arete* (excellence and moral values), which would assist them with managing the city and also their personal affairs, with special emphasis on public speaking skills and successful management of cities and personal life.

Ethics originated differently in various cultures and disparate locations. Ethical concepts developed much earlier than in the West in the Sumerian culture and in ancient Egypt and China. For example, the oldest surviving law

code in the world, that of Ur-Nammu, from Mesopotamia, around 2100–2050 BCE, noted the elimination of “enmity, violence and cries for justice.” Similarly, the Code of Hammurabi, the sixth King of Babylon, written around 1754 BCE, had 282 laws. In the prologue to the Code, King Hammurabi proclaimed that he wants “to make justice visible in the land, to destroy the wicked person and evildoer, that the strong may not injure the weak.” At around similar times of the sophists in Greece, ancient China also made considerable progress in terms of advancing ethics. For instance, classical Chinese philosophers such as Confucius, and later his disciple, Mo-tse, helped with the formulation of ethical principles.

2 | WATER, CULTURE, AND BELIEFS

While laws and philosophy have played important roles in the evolution of river and water ethics in different cultures, the roles of religions, both formal and informal, mythologies and beliefs, should not be underestimated.

In the nascent stages of human society, due to limited understanding of nature and constrained technical and engineering capacities, people viewed rivers as divine beings, possessing the power to both sustain and destroy life and therefore approached them with a mixture of awe and respect. Intrinsically different societies and cultures almost all had their own special deities to pray to for regular rains and also to protect them from floods and droughts. At least 270 water gods and goddesses can be identified in 44 different cultures around the world. A serious and systematic study would probably unearth hundreds more.

In countries like Egypt, where rainfall is scanty and water is a major existential issue, there were several water gods and goddesses. For example, Anuket was the goddess of the Nile; Hapi was the god of the annual flooding of the Nile; Osiris was the original god of water; and Tefnut was the goddess of water. All these gods and goddesses were deemed to have the power to ensure the flooding of the Nile came at expected times so that lands would produce bountiful harvests. In Greece, Poseidon was the king

of the sea gods and also the god of floods and droughts. Similarly, in China, Hebo was the god of the Yellow River. Mostly benevolent, Hebo could also be unpredictable and dangerously destructive, not unlike the river itself. In the meantime, different rivers, lakes, and seas of China often have their own dedicated Dragon Kings who preside over rainfall and manage water. Local people build temples to worship them, praying for favorable weather, smooth seas, and clear rivers. Da Yu, the great hero of flood control in ancient China, is also widely worshipped as a divine character in not only China but also the East Asian regions influenced by Chinese culture.

3 | RIVER ETHICS

When it came to the industrial age, especially during the post-1950 period, the unprecedented wealth and surge in knowledge inflated the human ego, leading to an attitude of exploitation and subjugation toward rivers. Societies all around the world started to prioritize short-to-medium economic gains over the importance of looking after the quality of their river waters and the health and vitality of rivers. To the extent rivers, forests, and lands suffered environmental deterioration, they were considered to be a price that had to be paid for making economic progress. This short-sighted approach increasingly overrode the rights and interests of nonhuman elements, including animals and natural resource systems, undermining their vital role in supporting the sustainable development of society, and sometimes even bringing them to the brink of collapse.

A typical example is the Cuyahoga River, in Ohio, United States, which was declared a fire hazard. To the best of our knowledge, it is the only river in the world that, for decades, was considered to be a fire hazard. The river caught fire several times during the first half of the 20th century because its waters carried significant amounts of industrial waste like oil and grease. After the last major fire of June 22, 1969, *Time* magazine, a most influential national magazine of that time, described the river as “that oozes rather than flows,” and in which a person “does not drown but decays.”

The realization has dawned that rivers, the cradles of our civilizations, and the natural presence we have long taken for granted are now ailing and facing an uncertain future. This crisis is not merely about the rivers themselves but also poses a threat to our living environment and the sustenance of all nations and even human civilizations.

Arising from this awareness of the formidable challenge, the visionary people have begun to reflect on human connections with rivers and nature, with China as one of the leading governments. This is manifested in their national guiding philosophy for water governance and management put forward by his excellency President Xi Jinping which is crystalized as “prioritizing water conservation, balancing spatial distribution, taking systematic approaches, and promoting government-market synergy,” underlying the aim of restoring life to rivers and vitality

to basins. Inspired by this over-arching principle, Chinese Water Minister Li Guoying, introduced the concept of river ethics in 2009 while overseeing the governance of the Yellow River, the cradle of Chinese civilization. He championed this idea in his eloquent address at the 2023 UN Water Conference, an event that captured global attention. River ethics, for the first time, was thrust into the global spotlight, advocating for a re-examination of human interactions and relations with rivers and calling for the development of a new paradigm of harmonious coexistence between humans and rivers.

Minister Li, in his article in this issue of *Journal River*, posits that rivers exhibit characteristics reminiscent of living beings, such as growth, development, metabolism, and self-regulation, and thus should be recognized and treated as such. This perspective acknowledges the moral standing of rivers as a life entity, naturally extending humanity's moral considerations to include them. Consequently, rivers should be granted rights to life and health, prompting a redefining and reshaping of our relationship with these vital entities. The decline of river life ultimately threatens human prosperity and sustenance. In the face of the current crisis in river management, revitalizing river ecosystems is imperative for ensuring the sustainable development of human society.

Incorporating the philosophy of river ethics into their practices, the Chinese government has implemented innovative approaches to water governance and management. At the legislative level, the concept of river protection has been codified into the legal system to regulate and correct past improper human practices. The most significant actions include the incorporation of ecological civilization into the Constitution of the country and the enactment of basic laws dedicated to the protection of the Yangtze and Yellow rivers. Administratively, policymakers and water authorities have adopted comprehensive measures to manage the river crisis, conserve water resources, optimize water allocation, and restore river ecosystems in a systemic and holistic way that considers all relevant components such as mountains, farmland, grassland, and deserts, leveraging modern technologies like artificial intelligence, big data, and digital twins to enhance these efforts. Lastly, significant efforts have been made to raise public awareness about river protection and foster a new value system that respects and cherishes the life of rivers and the ecosystems around them. Recognizing that every member of the public is a key participant in water management and a beneficiary of rivers, this involves sustained educational campaigns, lifestyle shifts, and the establishment of a cultural system and social environment that embeds river ethics as a conceptual and behavioral norm for all humanity.

Unfortunately, very few countries other than China have made progress in formulating river ethics or rights. Among the few that have included it are New Zealand and Uganda, even though they are still mostly limited to the conceptual level and have not put it into the practices of river governance. In 2017, the New Zealand Government granted legal personhood to the Whanganui River.

This was the first time in history that a natural entity like a river was accorded similar legal status as a person or a corporation. Under the Te Awa Tupua Act (Whanganui River Claims Settlement Act) of 2017, the river and its environment were recognized as a living being called Te Awa Tupua. Under this Act, the Whanganui River, from the mountains to the sea, its tributaries, and all its physical and spiritual elements, are legally recognized as a “living and indivisible whole,” having very similar legal rights and responsibilities as any living person.

Even though the Whanganui River is now a legal person, the river has no special water allocation. Further, there would invariably be trade-offs between the interests of human beings and that of the river. There would also be many instances when there would have to be further trade-offs between the views and interests of the Whanganui tribe and other parts of the New Zealand society in terms of river water use. With only two representatives, one from the Government and the other from the tribe, there would be times when trade-offs and compromises may be possible between the two spokespersons. Equally, there could be other times when they may not be feasible.

Perhaps in a few years, a serious, in-depth and objective analysis could be carried out to see the benefits and the challenges, and what modifications should be made to further improve the Whanganui process which would further evolve over time. Be that as it may, the Whanganui process has been a pioneering development that may work after certain modifications in certain other locations.

Experiences indicate that river ethics may have to be formulated based on specific geographic locations, cultures, traditions and societal expectations and needs. There will not be one solution which would be appropriate for all over the world. From this point of view, China's research in this field is pioneering in terms of both theoretical constitution and its practical application.


4 | CALL FOR CONTRIBUTIONS AND COLLABORATIONS

Journal River, as a platform that encourages and inspires cross-discipline, cross-sectoral, and cross-issue research and discovery, highly welcomes and expects pioneering studies and explorations in river ethics and is dedicated to fostering a global dialogue on the ethical dimensions of our interactions with rivers and their ecosystems. As custodians of our planet's waterways, it is imperative that we delve

deeper into the understanding of river ethics, which encompasses the philosophical, legal, and practical aspects of river stewardship.

Our call to action is for researchers, policymakers, and advocates to contribute their insights, research findings, and innovative practices to the Journal River. Let us engage in spirited discussions, share case studies, and develop collaborative strategies that respect the intrinsic value of rivers. Together, we can advance the discourse on river ethics, ensuring that our collective efforts contribute to the sustainable management and preservation of these vital natural resources for generations to come.

We invite water professionals from all disciplines and policymakers to join us on this intellectual journey, as we strive to elevate the study and application of river ethics to new heights. We plan to make the Journal River the conduit for our shared commitment to a more harmonious coexistence with the lifeblood of our planet. We further hope publications in our journal over time will provide an analysis of a community of good practices of river ethics that would be applicable to specific cultures, societal norms, and geographical locations. Also, we hope the ethical principles formulated will provide moral maps and frameworks within which complex and difficult decisions could be made for sustainable river management, which would be good for individuals and societies as a whole. This is not going to be an easy task, but one that must be accomplished for the future of humans and natural systems such as rivers.

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