



Introduction

Water-related conflicts have a long history and will continue to be a global and regional problem. According to Bolivian president Evo Morales, 37 conflicts related to water have taken place between countries since 1947 (Lederer, 2017). To make matters worse, growing water shortages could aggravate interstate water conflicts between countries that share a common river. Asia is arguably most prone to interstate water conflicts. On the one hand, with roughly 60% of the global population, Asia is suffering from severe water shortages, as in the region there is less than half the average amount of freshwater available per inhabitant globally. On the other hand, there are about 1.5 billion people in the region living in shared river basins, but very few of Asia's transboundary rivers are governed by treaties. And for the few transboundary rivers that are governed by treaties, interstate water conflicts remain acute.

China is one of the countries with the largest number of transboundary rivers on the planet, ranking third (together with Chile) after Russia and Argentina. In Asia, China is the upstream country for most of the region's major transboundary rivers. Thus, it is often considered 'Asia's water tower'. As the most populous country in the world, the country faces a looming water crisis. Despite having nearly one-fifth of the world's population, China has only 6% of the planet's freshwater supplies. As a result, the country's per capita water resources are only one-fourth of the global average, making it one of the most water-scarce nations in the world. China's water challenge is further compounded by a highly uneven spatial distribution. For instance, Northern China, with 65% of the country's land area and 45% of its total population, has only 17% of total freshwater resources and suffers periodic droughts. In contrast, Southern China has 83% of the country's freshwater resources, and during the monsoon season, heavy rains frequently cause flooding, which has long been a major socio-economic hazard. Worse still, water pollution has emerged as one of the most critical environmental challenges. For example, studies have shown that nearly 40% of Beijing's water sources are too polluted for any use, and that in Tianjin, over 95% of the water supply is unfit for human consumption.

To avert the looming water crisis, apart from spending massive amounts of money on domestic water mega-projects such as the South-to-North Water Transfer project as well as on water conservation and pollution abatement, China is increasingly using the water resources of its major transboundary rivers (He et al., 2014; Yong, 2006). On some of these shared rivers, the country has built or plans to build large dams for hydroelectricity and major water diversion facilities, which has sparked anxiety and concerns from other riparian states and criticism from the international community. Take the Mekong River, for example. China's hydro projects on the Upper Mekong River have become one of the major sources of conflicts between China and South-East Asian countries. Some diplomats and security experts consider the Mekong River 'the next South China Sea', which could derail relations between China and its South-East Asian neighbours and spark regional tensions. In 2012, Vietnam's president Truong Tan Sang highlighted that tensions over water resources are threatening economic

growth in many countries and representing a source of conflict. Truong added that upstream countries' dam construction and river flow adjustments are a growing concern for downstream countries and implicitly impinge on relations between relevant countries.

As concerns and criticisms from other riparian states increase, China faces growing pressure to improve its management of shared transboundary watercourses, as contention over transboundary water resources could threaten its relations with its neighbouring countries. This could also undermine regional stability and erode mutual trust between China and neighbouring countries, which is critical for the Belt and Road Initiative to succeed. And though the country once maintained a low profile in global governance, it has begun to play an increasingly active role in many areas of global governance, including transboundary water issues, since Xi Jinping came to power in 2013 (Zhang & Li, 2017). While existing studies have greatly contributed to a better understanding of transboundary water conflicts and cooperation in the Chinese context, four main questions remain insufficiently addressed:

- (1) How is China's transboundary water policy towards a particular river basin formed?
- (2) Who are the key actors, and what are their roles in shaping transboundary water interactions between China and other riparian states?
- (3) As China aspires to become a regional and even global leader, how will it adjust its transboundary water policy with regard to other riparian states? In particular, how will the country's policy towards transboundary water issues be affected by its high-profile Belt and Road Initiative?
- (4) How can transboundary water management between China and its neighbours be improved?

This special issue addresses these questions by systematically examining the multifaceted reality of the water interactions between China and its neighbours. The seven articles in this issue were selected from papers presented by leading scholars on 22 July 2016 at a workshop organized by the China Programme, Institute of Defence and Strategic Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore. Broadly, the articles can be divided into two groups. The first group extends the discussion of transboundary water politics beyond the foreign policy and geopolitical arenas and delves into more salient institutional factors and key actors that together affect China's policy and practice regarding transboundary water issues. The second group is a collection of comparative case studies on hydro-politics and conflict management between China and its neighbours along four major transboundary river basins, including the Amur River with Russia and Mongolia, the Mekong River with five riparian states in the Lower Mekong region, the Salween River with Myanmar, and the Brahmaputra River with India, Bhutan and Bangladesh.

Understanding China's transboundary water policy and practice

In the first group are three articles which contribute to the literature on China's transboundary water policy and practice. Highlighting three major gaps in existing research, Zhang and Li propose a process-based framework to study the country's approaches to transboundary water management (Zhang and Li, 2018). The process

starts with comprehending the uniqueness of a particular river basin or river. Various factors, such as the type of river, its geographic location, the degree of water scarcity, the extent to which water supply is shared by more than one region or state, the relative power of the basin states, and the ease of access to alternative freshwater resources, determine whether China adopts a proactive or reactive policy in that river basin or river. Next, China's overall foreign policy and bilateral relationship with a particular riparian country also affect the extent of its engagement with the shared water resources. Then, Zhang and Li (2018) point out that subnational actors such as local government, dam builders, NGOs and the media also influence China's behaviour in three major aspects: the degree of utilization of transboundary river; overall relationship with neighbouring countries; and the implementation of the national government's policy. Zhang and Li also highlight that China's policy and practice towards a particular transboundary river are not static; they evolve with the changing dynamic in the overall political and economic context.

The next two articles in this group, by Moore (2017) and by Urban, Siciliano, and Nordensvard (2017), complement Zhang and Li's process-based framework by shedding light on the role of two key subnational actors, local governments and dam builders, in shaping China's transboundary water policy and practice. Moore's article highlights the salience of domestic, as opposed to international, hydropolitics for China. He addresses an important question: whether and to what extent the domestic and international hydropolitical arenas are linked. Reviewing the dynamics of conflict and cooperation between subnational administrative jurisdictions in China and assessing the implications of these dynamics for its transboundary waterways, Moore argues that domestic hydro-politics can rival the international variety in both complexity and contentiousness. This is especially true in the country because of its marked fiscal-economic decentralization, which creates considerable interjurisdictional conflict. These internal politics may help explain tensions among the neighbours over transboundary rivers. Moore notes that although there is no doubt that China has not always been a very cooperative riparian neighbour, parochial rather than hegemonic interests appear to better explain its behaviour on Asia's transboundary river basins.

Urban et al. (2017) discuss the role of Chinese actors in dam-building as well as its environmental, social, economic and political implications, focussing on the Greater Mekong Sub-Region in South-East Asia. They find that the country's dam-building is perceived very differently in different countries. For instance, in Cambodia, the dams in the Greater Mekong Sub-Region are considered instruments of economic growth and development, whereas downstream in Vietnam they are regarded as a potential threat to national growth, development and security. The corporate behaviour of Chinese dam-builders is at least partially shaped by the legislation, policy and practice established by the national governments in Asia. However, international institutions and industry bodies, such as the World Bank and the International Hydropower Association, do provide further international standards and monitoring for responsible corporate behaviour in the Chinese hydropower sector. In terms of policy recommendations, Urban et al. say that 'by working together, and showing more willingness to improve the hydropower sector and more consideration for transboundary water problems, Chinese dam-builders and financiers, national host governments, and international public institutions and regulatory bodies such as the MRC and the Lancang-Mekong Cooperation

Mechanism could help make the hydropower sector more sustainable and reduce the negative impacts on the local people and the environment’.

Hydropolitics and conflict management along major transboundary rivers

Each of the four articles in the second group considers China’s interaction with its neighbours regarding shared water resources over a particular river basin, and offers valuable insights into how water conflicts can be better managed in the respective river basins.

Simonov and Egidarev (2017) discuss several important topics in river management relationships between the Chinese, Mongolian and Russian governments along the Amur River, such as hydropower, water transfer and flood control, to illustrate various less known aspects of transboundary river basin management patterns in the Amur River basin. They establish a baseline account of transboundary water management in the Amur River basin in the wake of major changes dictated by China’s wider transboundary and domestic policies, such as the Belt and Road Initiative and Ecological Civilization, and question to what extent the emerging shifts in environmental and development policies have been already manifested in cooperation on the transboundary river. The authors note that with the progress of the Belt and Road Initiative in general and the Silk Road Economic Belt in particular, integration between the countries of Eurasia could be boosted and some of the domestic industrial overcapacity could be shifted to other resource-rich countries of the region. This change may necessitate adjustment of transboundary water policy, as it is now in China’s interest to ensure that the water resources of its neighbours are well managed and sufficient to support joint economic development plans. In addition, as Ecological Civilization has emerged as a guiding development principle in the country, the preservation of environmental health and ecosystem services of transboundary basins could become a matter of growing priority, though no positive effects have been observed so far.

Next, Grumbine (2017) offers insights on how the concept of environmental security can be applied in the context of the Mekong River basin. Environmental security is broadly defined as an integrated analysis of the social and ecological aspects of environmental problems, which is gaining influence as nations begin to move beyond traditional conceptions of national security. Grumbine believes that the Mekong River basin provides an instructive example of the challenges to the evolution of environmental security in Asia. In this article, six security stressors are identified – ecosystem degradation, food, energy, water, human development and climate change – that will need to be managed cooperatively in the Mekong region. In addressing these stressors, he provides a qualitative meta-review from three aspects. He assembles current data from a wide range of sources to spotlight specific stressors and the linkages between them that most influence environmental security and management in the Mekong River; he identifies critical gaps in Mekong governance and institutional capacity; and recommends actions that may help the region’s governments plan for and implement adaptive, security-based strategies. With respect to how to improve the governance of the Mekong River, China’s potential role as a leader in the management of the Mekong River is highlighted. As the regional powerhouse, China is expected to play an important role in maintaining or reducing barriers to the spread of environmental security ideas and improved water governance behaviours. Grumbine also warns that if not acted upon soon, the opportunities for transboundary cooperation that abound in the Mekong River basin today could become greater challenges tomorrow.

In the third article, Kirchherr (2017) conceptualizes Chinese engagement in South-East Asian dam projects. He rebuts the notion that China's political leadership is the key driver behind Chinese engagement in dam projects in Southeast Asia which yield various political, economic and social benefits for China. Based on in-depth analysis of the Mong Ton and Hat Gyi dam projects, which are among seven dam projects to be built on Myanmar's Salween River and which feature the involvement of the dam developers China Three Gorges Corporation and Sinohydro, Kirchherr argues that dam projects with Chinese involvement in South-East Asia could also be driven by dam developers in standalone projects that yield growth and profit for the developer, along with benefits for the other contractual parties. In other words, in contrast to much of the previous literature, which has conceptualized Chinese engagement in dam projects in South-East Asia as hegemonic, this article shows that it can also be contractual at times. Thus, Kirchherr reminds scholars who work on this topic not to politicize Chinese engagement in Southeast Asia *a priori* but to consider it on a case-by-case basis.

The power interplay in transboundary water interaction over the Brahmaputra basin is discussed in the last article of this group and this special issue, by Barua, Vij, and Rahman (2017). Two key insights are brought out in this article. First, data sharing is currently a point of conflict in the Brahmaputra basin. Data and information exchange in the basin is obstructed by beliefs that such exchange could undermine the negotiating position of the riparian countries. The power asymmetry among riparian states and the broader political context, which currently considers all hydrological data relating to international borders as classified, generates complexities in the data sharing process. The second insight is that the bilateral approach adopted by both China and India has created a sense of unilateral control over the Brahmaputra basin. While there is some cooperation between the riparian countries, in the form of memoranda of understanding and agreements for the sharing of hydrological data, it is essentially bilateral. As a result, the lack of a multilateral institution in the Brahmaputra basin has been a major hurdle to any multilateral cooperation between the riparian countries. Barua et al. note that to better manage the Brahmaputra river conflicts, diplomatic engagement is necessary, especially when it comes to engaging basin hegemons, who are not in favour of institutionalizing multilateral engagement. They conclude that due to regional geopolitics, issues of sovereignty, and power asymmetry, negotiation for a multilateral basin-wide treaty is a non-starter for the Brahmaputra riparian countries at this moment. Instead, unofficial dialogues which aim to build relationships, confidence and trust may act as a starter. These unofficial dialogues could potentially lead to official negotiation processes in the future. Barua et al. suggest that a sustained dialogue process (such as the Brahmaputra Dialogue) could 'influence the Brahmaputra's riparian countries to identify common interests related to water and might also encourage India and China to behave as basin leaders rather than basin bullies, thereby leading the way to cooperation'.

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