



The political economy of water insecurity in Central Asia given the Belt and Road initiative

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Abstract

Central Asia is an integral part of the Belt and Road (B&R) initiative and the management of water resources is a critical issue in the region. Recently China has become more active in pursuing its economic and political interests in the Eurasian landmass and its expansionist drive has received much attention in the academic literature, which informs this article. The success or failure of the B&R is intertwined with the political economy of water in Central Asia and the purpose of this paper is to demonstrate the central importance of water, given the recent history, to such an ambitious economic initiative. The design of the paper is to firstly to traverse the literature and academic debate on Chinese motives and intentions and how they can impact on upstream and downstream water issues. Then water issues and water governance will be examined considering particularly available evidence of Chinese project experiences in B&R countries, the inter-country geo-political situation in Central Asia and the recent history of environmentally rooted conflict in the region. The methodology broadly follows a systems approach, meaning that understanding is obtained by giving attention to the interacting sub-systems: the political, economic, geographical, social and environmental factors in the context of recent history and the literature on Chinese intentions and motivations. The main conclusions are that the B&R initiative, while offering economic development promise, contains inherent risks of conflict and project failure, particularly in the context of existing and potential water conflicts. Improved trans-boundary governance – especially regarding trans-boundary river systems, stakeholder engagement and effective project management will be required. It is intended that the arguments will resonate with decision-makers and project designers.

Keywords: Water governance, water insecurity, political economy, conflict management, Central Asia, Belt and Road initiative

Paper type: Technical Paper

1. Introduction

This paper traverses the relevant academic literature on China's recent expansionism, analyzes what drives the Chinese-driven Belt and Road initiative (BRI). It assesses how the Chinese authorities combine trade, aid and investments to pursue an agenda of achieving the upper hand in the region and shows how this is likely to impact on the environmental and social

systems, particularly regarding water. When considering the academic literature on foreign policy of China since the rise to power of Xi Jinping, there is no clear consensus on Chinese aims and intentions; or put differently, there is not a single way of understanding Beijing's motivations in financial and economic terms. Even though the literature on the topic emphasize the shift from Deng Xiaoping's renowned "hide our capacities, bide our time" concept, which has been characteristic to China for some decades, to the current more assertive line China watchers choose different paths to analyze the reasons behind the intensification of Chinese foreign economic diplomacy in recent years. On the one side it has been argued that China's foreign economic intentions are peaceful and only serve the common goal of development of the People's Republic of China (PRC) and its partners, and on the other, that China seeks to overturn the global economic order and uses coercive and assertive policies to achieve its goals. A political economy perspective allows for examination of China's underlying motivations in parallel with assessment of recent Central Asian economic history and the emerging effects and consequences of a major policy initiative, 'the B&R' – a planned USD 900 billion set of Chinese investments ranging from energy and pipelines, to ports, roads and railways across a wide swathe of the world. These economic and political effects further impact on social, institutional and environmental systems in the region and beyond. Water resources, water governance and water management have been critical factors in the Soviet and post-Soviet periods; this will be intensified in the new age of Chinese economic expansionism. A key tenet of this paper is that analysis of China's intentions and motivations underlying the B&R initiative is informative, but a clearer picture of the Central Asian political economy requires understanding of the post-Soviet space, including institutional arrangements, governance structures, environmental problems and social and ethnic issues. Water insecurity was always and remains central to the political economy to Central Asia; it is likely to impact profoundly on many of the B&R projects in the region.

2. Methodological approach

This study will firstly draw on the literature and assess Chinese motivations, interests and involvement in international and regional financial and trade regimes, then focus more specifically on the B&R, China's underlying intentions and the political economy of Central Asia. The key concepts and diverging arguments will be extracted from the literature in a critical perspective, in seeking to understand Chinese motivations in its relations with the "partner" powers, the US, EU and Russia in tandem with relations with the Central Asian countries falling within the B&R. The methodological approach is discursive and informed by systems theory, which means that political, economic, geographical, social and environmental factors are understood as deeply intertwined, impacting on each other and creating ripple effects beyond the borders of the participating states. Drawing from the work of the systems thinker, Russell Ackoff, enables understanding of the various issues and problems in Central Asia as not being independent of each other, but rather as dynamic situations that consist of complex systems of changing problems that interact with each other (Ackoff 1974). The

question is whether China's geopolitical and economic expansionism, marked by the B&R initiative, is a lasting and positive game changer or whether it will be weighed down by intrinsic weaknesses or systemic risk factors in the political economy of Central Asia.

3. The literature on Chinese motives and intentions: review and discussion

Many scholars, especially those in China emphasize the desire of the PRC to be a responsible power, concentrating on the peaceful intentions of the country. Contrastingly, Jian Zhang, considers the peaceful development policy of the new leadership in the country to be completely different from its predecessors; in particular, he notes "the determination to forcefully protect core Chinese interests. Although at first it might seem his position slants more towards the political and security interests of the country, in fact in the emerging era of Xi Jinping, the concept of acting in national interests has expanded and started to include economic and developmental interests (Zhang 2015). In this view, any issues that might seriously influence China's economic development, such as supply of resources or maritime security, could be perceived as a core national interest, demanding a forceful response. China's international policies and actions, including fighting protectionism abroad, increasing overseas investments and expanding foreign economic and financial presence can also be considered as core national interests of modern China. Zhang's term for this is "Peaceful Rise 2.0", the main tenets of which are the commitment to forcefully protect national interests, including economic interests, if necessary, and the principle of reciprocity, which means that not only China, but also other countries must be determined to commit to peaceful development. Put simply, unlike during the times of Xi Jinping's predecessors, when China itself aimed to reassure the international community of its peaceful intentions, today it also seeks reciprocal strategic reassurance from other countries.

An alternative strand in the literature groups around a theme that the policies of the new leadership are not inherently peaceful; it stresses the increasing Chinese assertiveness and coerciveness accompanying the rising economic influence. These views emphasize China's attempts to pressure countries to change their policies and align them with Chinese interests by using economic means and pressures. China therefore essentially acts largely in its own self-interest. To make the point, authors usually refer to several instances of China "punishing" countries that attempted to take actions that ignored Chinese interests, while rewarding those who were "playing the Chinese game". Chiang-Liao notably emphasizes, the evident intention of Chinese leaders' to trade economic for political advantage reveals their inclination in shaping the behavior of neighboring countries (Chang-Liao 2016). In this regard, there are several instances of Beijing using sanctions as a punishment on other countries to eventually achieve its political goals. A notable case concerns the award of the 2010 Nobel peace prize to Chinese dissident Liu Xiaobo and although the Nobel committee is completely independent from the Norwegian government, it still resulted in a Beijing boycott of Oslo, such as the cutting of salmon imports and the indefinite postponement of the proposed Free Trade Agreement (FTA) negotiations between the countries. Another case –

noteworthy in the context of China's 'maritime silk road' – regarded as an integral part of the B&R - concerns the Scarborough shoal tensions in the South China sea resulted in China blocking Banana exports from the Philippines and negatively impacting on the tourism industry there. Finally, serious pressure from business communities forced the Philippines government to halt the tensions in the shoal and pull out its vessels. Even though both of the incidents happened before the ascendance to power of the new leadership, they do serve to highlight, as the new activism at play within China's economic diplomacy and signals, that the new leadership has embraced the idea of employing economic resources in the service of foreign policy objectives. Therefore, in the more active foreign policy of Xi Jinping, such actions by Beijing will clearly not be surprising, and moreover, are to be expected.

It is becoming increasingly clear that the relations between the United States and China are significantly defining existing and future global economic and political orders. In the light of ambitious investment and infrastructural development plans exemplified by the B&R, it is instructive to examine the literature analyzing this complex "partnership" and consider Chinese intentions. Timothy Heath, taking an economic perspective, regards Chinese economic policies as a major issue in the "partnership" with both positive and negative effects (Heath 2016). Importantly he notes the ambivalence and ambiguity in Chinese economic and political decision-making. On the one hand, China seems to be one of the countries benefiting the most from the existing rules-based international economic order, which clearly led the path for Chinese development in the last few decades. However, on the other hand Chinese leaders have always considered the existing system to be favoring and privileging Western countries. The author assesses all the possible motivations behind Chinese decision-making and initiatives, such as becoming a stronger trading power, advancing technologies, or in political and security terms, once again increasing its advantage vis-à-vis the United States. He further argues that Chinese leaders may indeed have it in mind to alter the existing order, but he rather considers that in this case, these changes are preferred to be incremental rather than radical by the PRC itself, because China's leaders understand the reality of the country's deep integration into the global economy and recognize the imperative to maintain stable, cooperative relations with major trade partners such as the United States and the European Union. Added to this, in the context of the B&R there is an emerging case – the Anaklia port development project on the Georgian Black Sea coast, a key B&R node of intersection – which would seem to involve a degree of Sino-US cooperation. A US-Georgian consortium is implementing the project and a Chinese company, the Shanghai Zhenhua Heavy Industries Company Limited (ZPMC), has invested USD 50 million in the development.

Similarly, Hveem and Pempel, in their analysis of Beijing's economic diplomacy, have criticized the economic interdependency theory of Sino-US relations. These authors argue that the interdependency notion is certainly not applicable when it comes to Sino-US relations, because the two powers are far from achieving a level of complex interdependence: in reality both parties accept that the other has leverage over itself and agrees to "swap" on a mix of issues (Hveem and Pempel 2016). This view holds that path of 'recombination', rather than

exclusively liberal, nationalist or populist agendas is the most likely way forward for Chinese policy development, since the process of China's rise and participation in the global economy overlaps with and benefits from global and international systems and process, which means that although China itself is a recipient of the different norms or values of the existing financial or political regimes, it has also set its mark on revising the rules that now dominate within many international institutions regionally and even globally. This is evident in the new institutional arrangements in the wider Asian region.

Alternatively, Nadine Godehart concentrates on the B&R as a policy initiative created by China to alter the American led world order. What distinguishes this work from the others covering the subject is that the author particularly concentrates on Chinese understandings of order, especially the concept of 'Tianxia' (all under heaven) – a geographic entity and a social collective supported by all people and tributary system, which used to exist in East Asia centuries ago, when China was indeed the most powerful country in the region (Godehart 2016). In a similar vein, Miller has argued that the goal of China's economic diplomacy is to create a modern tributary system with all roads literally leading to China in a form of neo-imperialism (Miller 2017). While this argument recognizes the role China plays in the existing international order and its involvement in global networks, the B&R initiative has the potential to become an alternative concept of international geopolitics. Central to this perspective are the concepts of 'Tianxia' and 'Middle Kingdom', with China being the core of the B&R and eventually the international order by emphasizing its positive aspects such as inclusivity, openness and enhancement of cooperation between all the countries involved. Thus, according to this understanding the B&R does not only have the capability to transform the organization of international politics and economics but also has the ability to do it so that its benefits are enjoyed by everyone, with the eventual outcome being the special form of Chinese stability which eliminates the existence of chaos. The overarching risk is that the countries on China's periphery will not want to become de facto vassal states and may, in seeking to preserve their independence, seek to align with a bigger tributary system – the US and its main allies in the region, Japan and South Korea. Aside from the geopolitical risk, there are significant systemic risks inherent in transforming the massive infrastructural developments into the trade, investment and economic gains that will ultimately define China's power. As experience has shown these risks can quickly turn into disharmony and conflict.

The literature on Chinese economic diplomacy devotes considerable attention to the importance that the East and Central Asian region holds for Beijing, with ideas ranging from the centrality of competitive advantage vis-à-vis Japan to taking a dominant or influential role in regional institutions. Within this context, the role of Chinese free trade agreements are important; in particular, the China-ASEAN FTA, which can serve as a triggering factor towards strengthening regional integration in East Asia, as well as challenge US unilateralism. Furthermore, scholars have noted China's drive to prevail over one of its regional rivals and

US partners - Japan. Hoadley and Yang mention the gains Japan was able to achieve in Southeast Asia in last few decades, which made it requisite for China to increase its role in the region (Hoadley and Yang 2007). In addition, the active involvement of the PRC in regional institutions and increased trade and investment with its neighbors can be squared with opinions on the essentially peaceful rise of China, and therefore, help to dilute the doubts regarding the threat of a rising China. Although written, several years before the ascendance of Xi Jinping to power, these arguments remain pertinent today when assessing the economic and political motivations of Beijing in the region with particular reference to the Asian Infrastructure Investment Bank (AIIB) and the B&R. Such projects are also advanced by some as reasons to discredit the assumptions of the “China threat” and clearly increase the influence of the PRC, firstly, regionally and then internationally, because of the substantive collaboration between the member countries.

Casarini, assessing the implications of the B&R on Europe, agrees that geopolitical motivations may be behind the initiative by labeling it as a Chinese style “Marshall Plan”, which seems to aim to apply certain political conditions and increase of influence in the countries involved in it (Casarini 2016). This view focuses on the economic and political interests that the PRC has in the B&R, such as exporting the Chinese model of development to different parts of the world, as well as internal economic factors, notably the need to restructure different sectors that are suffering from overcapacity and dealing with this by expanding internationally. In contrast, Holslag is more comprehensive in addressing Beijing’s motivations, essentially by focusing on possible financial and political interests behind the ambitious plans. Specifically, he lays out six goals the PRC aims to achieve through its initiatives, ranging from the export of manufactured goods to increasing access to natural resources (Holslag 2017). Of great relevance is China’s political motivation, particularly responding to the challenging economic environment domestically and internationally, for example by assisting and standing by its firms and fighting against protectionism in the partner countries, including European states.

The contending geo-strategic dominance and benign economic development perspectives or in Cooley’s terminology ‘gamers versus traders’ aids understanding of the B&R’s political economy (Cooley 2016). It is perhaps true that the full picture is neither wholly one nor the other, but some combination of both. It is argued that firmer conclusions can be drawn from another strand in the literature on the environment and social impact of Chinese international economic activity. Even if China is for the most part a ‘trader’ and force for the good in the developing countries along the new silk road and the European Union ultimately, questions can be raised about sustainable or unsustainable development and in this respect certainly doubts exist. Laurance, for example, has argued that Chinese companies and investors have rarely advanced the form of equitable economic and social development, improved governance and environmental sustainability that can promote stable, long term growth in developing countries (Laurance 2017). In terms of environmental sustainability, it is known

that massive infrastructural projects can cause significant environmental damage in sensitive areas, including negative impacts on water ecosystems, hydrology and soils. An egregious case in point in Central Asia is the dessication of the Aral Sea as a result of Soviet era economic planning that knowingly prioritized irrigation for cotton production above the serious environmental, social and health risks. Environmental damage is certainly not new to Central Asia and the Aral Sea disaster was a consequence of Soviet action, but there are informed opinions that Lake Balkhash in Eastern Kazakhstan faces a similarly devastating scenario as a consequence of upstream irrigation plans in Xinjiang.

Not surprisingly, much of the current literature on China's international relations is about the implications of the 'new silk road' and other initiatives such as the AIIB and Silk Road Fund. The views on these initiatives are very diverse among both Western and Chinese scholars. Some, mostly from the west, call the B&R a new Marshall Plan and emphasize the political drivers of the initiative. Most Chinese scholars on the other hand tend to take the view that there are no political strings attached to such initiatives and that they only serve the goal of achieving significant economic gains both for China and for other countries that the B&R encompasses. Another discrepancy in the assumptions among different scholars is whether these new initiatives are offensive or defensive in nature. China is moving away from the policies promoted by Deng Xiaoping and rejecting the defensive mercantilist policies it used to follow for decades; in contrast, there are others who consider the drivers behind Beijing's new policies to be defensive rather than offensive. For instance, Yong Wang argues that Beijing's policies are an answer to combined pressures it had to endure for many years, ranging from the US pivot to Asia, to the slowing down of economic growth or what is sometimes described as the "new normal" for Chinese the economy (Wang 2016). His main argument amounts to a rejection of the Western-centric and neo-realist narrative about the assertiveness of Chinese economic policies, with these new initiatives by the PRC purported to be the cause of increased insecurity and instability in international and regional arenas. Moreover, it would be a misinterpretation to call these projects a "Chinese Grand Strategy of Geopolitics". This perspective is certainly in line with other Asian scholars, emphasizing China's benign political and economic development interests. Chinese economic diplomacy is seen as essentially defensive: The B&R and the AIIB in particular are instruments to defend against US pressure as well as strengthening Asian regionalism with Chinese leadership. Clearly, huge financial and institutional initiatives such as the B&R and AIIB are also partly designed to increase the economic power and influence and reputation of the PRC in the participating countries especially, those with close proximity to China. This argument further underlines the necessity of building close relations with the neighbors to ward off the pressure of the United States and its ally Japan.

4. Russia and the former Soviet space

In the context of Central Asia, the role of Russia is also key as a both a partner and perhaps reluctant B&R participant in the political sense, considering its former overlord role in the

Soviet Union. Russia regards the ‘near abroad’ former Soviet states as part of its sphere of influence and as has taken direct military action in Georgia and Ukraine to enforce this. If the remarks made by Russian President Vladimir Putin at the Seliger Youth Forum in 2014, in which he noted that Kazakhs had never previously had statehood, are taken seriously, then Kazakhstan faces threats to its independence (Casey 2014). The Central Asian states are still under Russian influence, at least as members of the Eurasian Economic Union (EEU), an alternative economic and political vision to the European Union and possibly the B&R as well, although cooperative arrangements, particularly regarding trade facilitation, are currently unclear. Unless remedies are agreed between the EEU and China, this can impact on the efficiency of B&R transport corridors across Central Asia. Russia retains significant influence in Central Asia, although it cannot compete with the speed with which China can finance and build infrastructure. The Central Asian countries are all also, together with Russia and China, members of the Shanghai Cooperation Organization (SCO) that supports national sovereignty and cooperation in economic and security domains. While it is certainly appealing for China to work together with Russia as a ‘friend’ at a time when the US seeks to contain China, the SCO’s effectiveness has been undermined by inability to cooperate on a spillover of terrorism from Afghanistan and the acute social unrest in Kyrgyzstan in 2010. Structural and policy problems have prevented the SCO from functioning effectively to deal with such crises (Saksena 2014). The SCO has also not directly addressed water insecurity, inter-state differences on water management and trans-boundary governance.

5. The economic development of Xinjiang: upstream and downstream issues

An important rationale for the B&R initiative is founded on the sensitivity within the Chinese leadership to the underdevelopment of Western China in comparison to the Eastern and Southern provinces. This provides an internal dimension to the B&R that may be more important than the external geopolitical and economically driven expansionism. As the gateway to the silk road routes through Central Asia, Xinjiang is well-positioned to benefit and accelerate its economic development, although it is part and parcel of a domestic investment drive in which every Chinese province has its stake. Xinjiang, which borders eight countries, including those of high significance for the B&R – Kazakhstan, Russia and Pakistan – is both a B&R hub and a strategic concern for China. Toops has argued that China intends to bring more stability and development to Xinjiang through its economic policies (Toops 2016). A core purpose of the B&R is to integrate China’s lagging and underperforming regions into a holistic and externally oriented development initiative (Johnson 2016). Insecurity, fear of religiously inspired terrorism and particularly the restiveness of the indigenous Uyghur population, noting the serious riots in Urumqi in 2009, is an acknowledged problem and there is a recognition that the solutions lie in economic development. Attention should, however, also be given to risks associated with large-scale infrastructural and agricultural development, which include likely conflicts linked to environmental degradation and competition for scarce resources, especially water. The prioritization of the economic development of Xinjiang and

intended attainment of socio-political stability may, however, come at the expense of environmental degradation of the Ili-Balkhash basin in Kazakhstan.

The debate on the intentions underlying the B&R and China's external development is informative, but the contending arguments may soon be buttressed either way by facts on the ground. The Ili river rises in China and then provides the major inflow into Lake Balkhash in Kazakhstan. The Ili-Balkhash basin is therefore a trans-border hydrological system and also an environmentally sensitive one that is susceptible to climate change causing decrease in mountain ice run-off, an increase in evaporation as well as more immediate pressures resulting from industrial and agricultural water needs. According to Sala et al., the present water level of 342 m asl is supported by an average yearly input of 17 km³. If the level drops below the critical level of 336 m asl, then the Eastern part of the lake will disappear (Sala et al. 2017). These researchers also describe a lack of responsiveness on the Chinese side to requests for international trans boundary management of the hydrological system. In this regard, the Kazakh – Chinese Joint Commission on the Utilization and Protection of Trans-Boundary Rivers' was set up in 2001, but the vital issue of water allocation has not been negotiated and resolved. Similarly, Propastin has noted that 75 per cent of the total inflow to the lake originates from the Ili river in China where the real threat to the survival of the ecosystem lies, considering the Chinese government's extension of irrigation lands, including the construction of a reservoir and canal system in the Ili river catchment area, to 450,000 hectares. This would severely reduce the runoff to the lake to an unsustainable level (Propastin 2012). In this scenario, comparisons with the Aral Sea ecological catastrophe become increasingly likely. Arguably the Chinese irrigation planning in Xinjiang has environmental and political parallels with the Soviet cotton irrigation scheme in Kazakhstan and Uzbekistan. Using remote sensing technology and analysis, Thevs et al. have analyzed water consumption patterns along the Ili river (Thevs et al. 2017). They have noted the increasing usage on the Chinese side with an observation that 80% of the consumption is for agriculture. Importantly, this has also entailed a shift from wheat and oil seeds to rice, corn and cotton that require much more water. Their analysis has included description of the importance of the Ili river delta as an environmental hotspot and resource for clean water, livestock farming, fodder and fisheries. They conclude that sustainable water management, particularly protection of Lake Balkhash and the riparian ecosystems, will require improved irrigation systems in both Kazakhstan and China as well as selection of crops that require less water.

The Ili river irrigation schemes are not B&R projects, but the downstream environmental effects could well impact on the overall B&R efficacy if rural users are badly affected and water scarcity results. The lack of sustainable trans-boundary management and favoring of unsustainable agriculture in Xinjiang will not promote the benign trade and economic development rationale for the B&R and would tend to give credence to arguments that the initiative is self-serving. Sternberg et al. have referred to the "opaqueness of Chinese procurement of resource rights in the region" and further warned that that this "points to

contestation over land and water between current rural users and state-driven controls” (Sternberg et al., 2017). The trans-border ethnic mix in both Xinjiang and China is a complicating factor that can have knock-on effects such as resource nationalism and antagonism towards B&R projects. It should be noted that there is a small but significant Uyghur minority in the Almaty province that demonstrated against the perceived unjust Chinese treatment of their kin in Xinjiang after the 2009 unrest. There is also a larger Kazakh minority in Xinjiang, especially in the Ili Kazakh Autonomous Prefecture whose treatment has received negative media attention and discussion in Kazakhstan. Put differently, China, Kazakhstan and the other central Asian states share common economic interests in maintaining stable relationships, exemplified by the B&R initiative, but there are environmental and ethnic flashpoints that can jeopardize this.

5.1. Evidence from other B&R corridors

Myanmar, as a neighboring country of China, should in theory be an important B&R partner and beneficiary country considering that it is strategically located in the Bangladesh-China-India-Myanmar corridor, one of the six B&R corridors. The Myitsore dam case, however, is illustrative of a nexus of environmental and social problems that can result from a poorly conceptualized and planned hydropower water project with knock-on effects on the perceived viability of B&R projects, noting that the power and the energy sector is a central focus as well as being a contentious issue in Central Asia. In the ‘Visions and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road’ one of the identified priorities is to: promote cooperation in the connectivity of energy infrastructure, to build cross-border power supply networks and power transmission routes, and cooperate in regional power grid upgrading and transformation. In Myanmar, following concerted opposition from local opposition groups, civil society organizations, scholars and environmentalists, the government suspended the project that was to have been run by the China Power and Investment group, a Chinese State Owned Enterprise, for 50 years. The Myitsore dam site is in a particularly sensitive area where members of the Kachin ethnic group are engaged in an armed rebellion against the Myanmar government. Clearly, the dam building plans and a new political landscape in Myanmar led to eventual suspension of the project that had aggravated an already unstable and fragile local situation. ‘Sinophobia’ is a consequence of such actions and can be exacerbated by unsustainable human resource management policies of not using local labor and instead bringing workers from China in countries with high unemployment. Such build-up of resentment towards Chinese driven development can become a political issue and therefore a serious project risk factor. Similar problems have been experienced with \$430 million Zhongda oil refinery project in Northern Kyrgyzstan that currently uses only a small fraction of its capacity. Problems included industrial unrest resulting from Chinese labor policies and protests against air and water pollution in populated areas around the site. This exacerbated Sinophobia in Kyrgyzstan with incidences of violence reported and anti-Chinese positions taken by Kyrgyz politicians.

The project problems described above may arguably be part of a wider pattern. Citing a study conducted by a consultancy, RWR Advisory, George Magnus has raised wider concerns about B&R project failures; it was found that 14 percent or 1,674 projects undertaken in 66 countries since 2013 have run into trouble with the common denominator being flawed governance. Issues have included public opposition, labor disputes, delays and national security concerns. Magnus has contended that the B&R is more a China-centric global footprint strategy than an improved economic growth and financing model for the global economy (Magnus 2018). It is, however, noted that this study would seem to be more focused on project failures than project successes. Balanced project evaluations will also need to assess the critical success factors.

6. Upstream and downstream water issues between Kyrgyzstan, Tajikistan, and Uzbekistan

The political economy of water insecurity in Central Asia is largely about governance, geography, regional rivalries, competing economic priorities and national borders. The complexity of interlocking factors, especially concerning the competing national agendas of B&R participating countries, can potentially undermine B&R initiatives. Kyrgyzstan and Tajikistan both have plans to build dams for the development of hydropower that is in short supply during the winter months and dependent on fossil fuel generated electricity from Uzbekistan - as well as ultimately for export purposes. They are poor countries with limited resources apart from water and seek to take advantage of what they do have - water. The construction of the Rogun and Kambarata-1 dams on the Vakhsh and Naryn rivers in Kyrgyzstan and Tajikistan has though been seen as a threat by Uzbekistan due to the downstream effects that it is perceived to have on the irrigation of its vital cotton industry. The countries' competing demands have led to progressively deteriorating relations following the collapse of Soviet central planning and even to threats of war (Hamidov 2017). This is not a far-fetched notion, considering the history of inter-ethnic conflict in the region, most recently in Osh in Kyrgyzstan between the Uzbek minority and Kyrgyz majority in 2010. These clashes and others, including the Andijan unrest and massacre in 2005, have occurred in the ethnically and artificially divided Ferghana valley that is shared by Uzbekistan, Kyrgyzstan and Tajikistan. It has been argued that the majority of conflicts in the valley have been caused by the domination of a particular ethnic group over the economic resources of that area (Borthakur 2017). The SCO, in its support for the Uzbekistan government, preferred to attribute the causal factor as religiously inspired terrorism rather than clan and identity politics aggravated by access to water resources.

Notwithstanding the competing explanations of social conflict, the Syr Darya river that flows through the valley remains a vital water source for the 13 million inhabitants of the densely populated area and a causal factor of conflict if access to and availability of water are threatened. Further downstream, improved control of the Syr Darya water resources in the frame of a World Bank funded project has brought positive results to the North Aral Sea

(NAS) in terms of reduced salinity, increased fisheries, improved fauna and flora, and the return of the local population to engage in income generating activities. The second phase of the project is envisaged to further improve public health and facilitate crop and livestock production in the region (The World Bank 2014). The project is limited to Kazakhstan and the now separated NAS, therefore not treating the Aral Sea in its entirety as an ecosystem. Nevertheless the project has arguably emerged as a good practice in combining social and environment actions with economic goals and human livelihoods. Similar actions in the Uzbekistan part of the sea would face bigger challenges and the trade-offs are more difficult, especially regarding the cotton sector. The ongoing project further serves to underline the importance of effective upstream management of Syr Darya river water resources and trans-boundary cooperation for the greater good of the region as a whole. Lessons can also be learned about matching achievable project objectives with realistic project activities as well as learning from other successful initiatives.

7. Governance and management: weaknesses, challenges, and solutions

An obvious solution to the problems outlined above is in trans boundary water governance, negotiated solutions and better management of shared resources. While very recent reports are indicating that Uzbekistan has a new willingness to participate in hydro projects following political changes in the country, significant institution-building and conflict resolution challenges remain. It has been noted that water wastage is a contributing factor to water insecurity in Uzbekistan, particularly concerning cotton irrigation and the use of outdated labor-intensive technology. The complex interplay of social, political, economic and environmental factors does raise questions about the sustainability of cooperation on B&R initiatives as well as highlighting the importance of China's abilities to address problems between participating countries.

Although the B&R is still in a formative stage, the B&R 'visions and plans' and evidence to date does suggest that stakeholder engagement, including social and environmental considerations, are integral B&R principles. The key document in this respect is the 'Belt and Road Ecological and Environmental Plan' of May 2017 which lays out a blueprint for an environment-friendly B&R. In section VII 'Carry Out Eco-Environment Protection Projects and Activities to Enhance People-to-People Bonds', it is specifically stated that "cooperation will be strengthened in air, water and soil pollution prevention and control, solid waste management and comprehensive rural environmental improvement (Belt and Road Ecological Plan 2017). 25 key projects within the B&R pillars of Policy Coordination, Facilities Connectivity, Unimpeded Trade, Financial Integration, People-to-People Bonds and Capacity Building are described. The only project directly addressing water is 'The Lancang-Mekong River Environmental Cooperation Platform.' The project title itself only serves to highlight that similar upstream-downstream trans-boundary cooperation initiatives for the ecologically and politically sensitive Ili and Syr Darya rivers, discussed in this article, would be important. The document is generally strong on green industrial development and cooperation with

national, municipal and local authorities, which is encouraging, but there is no emphasis on risk and environmental impact assessment and conflict resolution on the ground. The document is more of a framework and statement of intent than a code of conduct. It is not, for example, mentioned that each and every B&R project should its own have built-in factors to ensure environmental and social sustainability. The AIIB is more explicit in its 'Environmental and Social Framework' in stating that environmental and social planning and management of risks are key project actions. The Silk Road Fund is explicit about 'social responsibility.'

Weak governance and inadequate trans boundary cooperation are seen as major fault lines that will be constraining factors in the rollout of B&R initiatives. Bilateral agreements, partnerships and innovative financing arrangements will mean little if the risk factors are not anticipated and mitigated in advance. Additional risk factors are high incidences of corruption and the previously mentioned trade facilitation problems, particularly border crossing delays. The latter can be considered a serious impediment to the success of new multi-country transportation corridors that are supposed to drive export-oriented growth and international trade. Good governance is integral to the B&R's success, but even if this is improved it will need to be translated into effective implementation of projects on the ground. The discipline of project management requires robust project design and preparation phases that identify all possible risks and outlines risk mitigating strategies in advance. Environmental limitations, especially those related to water, need to be given serious attention with B&R project objectives in order to diminish the risks of conflict in an insecure region. If risks can realistically be expected to result in project failure, then projects should be postponed pending participatory planning or cancelled. Above all project design phases in environmentally sensitive areas will require environmental impact assessment and strategic impact assessment.

This paper has highlighted some of the major social and environmental risks that require analysis, but added to this the Central Asian region is also experiencing the effects of climate change and hydropower schemes are at risk due to seismic activity. Project implementation risks linked to human dimensions can be mitigated by rigorous stakeholder communication and involvement; this includes the participatory engagement of citizens and communities located around project sites. The Myitsore dam project in Myanmar and Zhongdu oil refinery project in Kyrgyzstan have demonstrated the consequences of poor stakeholder engagement, not to mention the risks associated with project identification and planning done only at bilateral governmental and power broker levels with failure to anticipate the consequences of change at the political level.

8. Conclusions

The B&R initiative has been driven largely by a combination of geopolitical objectives and domestic economic and political factors. Yet it also has the potential to contribute significantly to global trade and business growth, including the economic development of

China's neighboring Central Asian countries. If, however, inadequate attention is given to risks in projects falling under the aegis of the B&R initiative, there may be serious consequences. These include environmental degradation and social and ethnic conflict. Central Asia is a water insecure region: weakened governance, inter-nation disputes over control of water resources and local conflicts have marked the post-Soviet modern history. There are competing demands for water from agriculture and hydropower in different countries, as well as other B&R infrastructural development projects. Perhaps these can be reconciled with effective trans border cooperation and governance, but even if this is the case, there are still considerable environmental and social problems to deal with. Recent experience is not promising, as shown by the Aral Sea ecological disaster and the bleak future scenarios for Lake Balkhash in the wake of irrigation schemes. Both these cases suggest that central planning prioritizing the needs of domestic agricultural programs can create environmental damage with effects on social conflicts, human health and livelihoods.

The B&R initiative is mostly spoken and written as a 'policy framework' or an 'initiative' rather than as a 'program' or 'project.' It is perhaps best described as a 'guiding vision' or a 'broad commitment' that is still in a formative phase. Transforming the broad vision into concrete actions and dedicated projects in a difficult region will present major challenges. Some of them have been highlighted in this article in the context of water insecurity. Sustainable and environmentally sensitive B&R projects will need to be identified and formulated on rigorous risk assessment and stakeholder engagement processes that fully take into account the environmental, social and local level human dimensions and realities. A systems approach means that the local is as important in project design as the global.

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