The Water Margin: Security and Securitization in China’s Water Crisis

by

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Abstract

It is increasingly apparent that China’s freshwater availability and supply are becoming a serious constraint upon its developmental and human needs – to the point of internal crisis, as supply is set to peak by 2030. This has been a running trend alongside other environmental problems caused by the economic boom. Whilst China has made significant inroads in tackling water and environmental issues, this paper argues that water has been treated as a security issue in rhetoric and action. This paper employs the Copenhagen School framework to analyse how the government has securitized water resources, and also attempts to analyse the rationale and interests behind its response, using the lens of fragmented authoritarianism to explain the diverse emergent responses to water shortage within the state. The supply-side strategies the Chinese state has espoused as part of the securitization of water are also shown to be detrimental to its other environmental goals and political interests.
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Dedication

To my parents
Introduction

Water security is generally defined as a population’s access to potable water for human consumption and use. Though most often seen as an environment or development issue, it has also been frequently examined as a non-traditional security issue in transboundary politics, most notably in the transboundary tensions of the Middle East (Turton 2002). As a resource, it sits at the intersection of multiple functions and demands: its necessity to food, energy, environmental and economic needs leads to latent tensions in its allocation and use, and its transboundary nature challenges sovereign governance. Water politics has spilled into the realm of security around the world, increasingly in Asia – in per capita terms one of the most water-scarce regions of the world. Uncertain climate change and rising demand will make existing supplies even more precarious, its control increasingly contentious.

This paper focuses on China and the steps it has taken to address its impending water security threats. I argue that, in the face of its water scarcity issues, China has securitized the threat of water shortage, in rhetoric and action. However the way it has done so, and the strategy that securitization has taken, may be ineffective and even detrimental to its water security and other goals.

The paper first addresses the conditions contributing to water scarcity in China, outlining the triangular nature of water shortage in interlinked issues of supply, demand and quality. Then it moves on to discuss the Copenhagen School’s securitization theory, and its application to China’s water crisis. Drawing critically from this framework, I demonstrate that both in rhetoric and action, China has elevated water shortage as an issue of national security, before examining how policy responses have followed from this particular conception of security. I argue that, whilst China has made significant advances in environmental protection and ecological management, its approach to water security has been characterised by a highly technocratic, supply-targeted approach.

To explain China’s provocative responses to water shortage, I delve into its internal politics, using the framework of fragmented authoritarianism to explain how the domestic political economy constrains its security policy. Peeling aside the black box, several domestic factors
have conditioned China’s water policies: institutional fragmentation; hydropower and energy interests; and the confluence of water security with energy, food and ultimately national security. Thus, many of the projects and methods to address water security may be seen as a path of least resistance for the central government, despite the often ecologically unsound means of ensuring water security. Moreover, the logic of securitization that has been espoused and the consequences of emphasising supply may be in fact detrimental to China’s other interests: firstly to the long-term sustainability of its domestic water resources, and thus the viability of its economic development path; but also to its regional interests and credibility as a rising international power in the East Asian region.

China’s response to its domestic water crisis, at a time when resource scarcities and environmental constraints are threatening its economic rise, will have significant consequence not just for water security, but also its international relations and influence in the region. The international dynamics of Asia’s water security are heavily dependent on China, the regional hegemon and a growing world power who occupies much of the region’s water supplies. ¹ Thus, greater attention needs to be paid to China’s own internal water security and water management, the repercussions of which will be felt far downstream. Whether, as some predict, China will eventually rival the US as a world superpower is moot; China’s international rise will also depend on how it overcomes its environment and resource issues, within and beyond its own state.

The Three Faces of Water Scarcity

In examining the causes and origins of water scarcity, one may frame the issue as a triangular problem. There is the typical economic push-pull of supply and demand; however this is also complicated by the manner of human usage, and the impact of pollution upon water quality. Within China, water security faces challenges in all three dimensions.

¹ Brahma Chellaney (2011) describes Asia as the new “battleground” for water, arguing that increased water-stress and scarcity, and especially the transboundary nature of Asia’s rivers, have the potential to fuel future inter-state conflict in the region. China, in controlling the political territory of Tibet, plays a key role, as it controls the “water tower” for the whole region.
Supply

China has historically been a water scarce country – its dynastic cycles often coincided with periodic droughts and floods, and water management was an integral part of imperial legitimacy. Whilst in absolute terms it is the fifth most water abundant country in the world, its per capita water supply is only around a quarter of the world average. In 2009, its total actual renewable water resources (per capita) were 2079 m$^3$/year, compared to the world average of 6225 m$^3$/year. This is projected to fall to 1890 m$^3$/year by 2033 as its population peaks at 1.5bn people (Aquastat 2010). This natural scarcity is exacerbated by the uneven distribution of water resources, both temporal and geographic. The North (comprising the Huang, Liao, Hai river basins) is relatively parched, possessing approximately only a fifth of the country’s total water supply, but around half the country’s population and most of its arable land. Morton (2008) notes that the per capita supply of the North China plain is dangerously below the minimum threshold for human sustainability (p.56).

The result is a systematic and widening water deficit across China, and in the North China Plain in particular. The deficit between supply and demand is currently about 40 billion tons a year, around 36.3 thousand cubic metres (km$^3$), or 70 Sydney Harbour’s worth of water. Estimates based on the rate of demand and population growth say that water supplies across the country may peak as early as 2030. (Xinhua News Agency 2002).

The south of China, on the other hand, including the Changjiang (Yangtze) river basin, is relatively water abundant (and where flooding, rather than drought, is the main concern), with access to the other 80% of China’s total water. Though supply is currently abundant, Southern China’s major rivers, and many rivers across Southeast Asia – including the Indus, Mekong, Brahmaputra – are dependent on glacial sources in the Tibetan plateau, as well as highly seasonal rains. As global temperatures have risen, this supply has become more volatile.

Experts see climate change as a significant factor in the overall decrease in China’s total annual water resources through shifts in rainfall and snowfall, leading to a 13% drop in water resources since the start of the century (Circle of Blue 2011a). Glaciers that feed these major

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2 ‘Water scarcity’ or water poverty is defined at the threshold of per capita 1000 m$^3$/year, whilst the North China plain has around 757 m$^3$/year (World Bank 2009).

3 With thanks to Wolfram Alpha for its colourful unit conversions.
rivers are shrinking by an average rate of 7% per year, and river runoffs from the Tibetan plateau have been in decline over the last 50 years (Jiang 2009, p.3190). Estimates predict that the Himalayan glaciers and the ‘water tower’ of Asia could disappear by 2035 (Morton 2008, p.60).

**Demand**

Parallel to the issue of supply is the rising pressure of demand. The economic reforms of the 1980s spurred greater production, prosperity and consumption, but at the cost of the natural environment and to the increasing strain of its water resources (Xu and Zhang 2012). Despite natural aridity, agriculture, the greatest consumer of water, is heavily concentrated in the parched North, demanding intensive irrigation. Prosperity has also led to rising consumerism and consumption of food, especially meat, whose production is highly water-intensive (Chellaney 2012, p.145). Growing industrial and energy consumption is another huge source of demand, as water is essential to the energy production process, and used intensively in coal-processing – again, largely situated in the arid north of the country. As China’s energy demands grow, its coal dependence is likely to continue. Coal production has tripled since 2000, being the largest industrial consumer of water and taking in a fifth of total national water consumption. This is projected to increased by 30% by 2020 (Circle of Blue 2011a); despite conservation attempts, demand for water is unlikely to abate (Wang 2006).

The overall result of growing demand since China’s economic opening has been the systematic depletion of water resources: for a number of years the Huanghe (Yellow river) would dry up before it reached the sea (Gleick 2011). Growing urban centres and rising living standards are compounding the trend. Overextraction of groundwater in urban centres such as Beijing and Shanghai as well as many other cities is also leading to worrying problems of subsidence. The World Watch Institute estimates that the water table under Beijing has dropped around 60 metres since 1965 (Ranjan 2010).  

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4 The most booming areas of Beijing are estimated to have sunk at a maximum rate of 137 millimetres *per year*, with serious implications for land and infrastructural developments on it. (China.org.cn 2011)
As well as demand, there is also the issue of poor efficiency of water usage in China. Irrigation technology and water distribution infrastructure are widely inefficient and outdated, and policies of irrigation charges being based on acreage, rather than volume consumption have produced weak incentives for efficient use (Jiang 2009, p.3192). Water prices have also historically been low, even free for farmers in some areas. As such, the pricing of water fees below its extraction and scarcity value has led to profligate usage, but has also left inadequate funds for upgrading or replacing much of the irrigation infrastructure (FAO 2008). Meanwhile, concerns for social harmony and local growth mean that price mechanisms for utilities as water and electricity are sluggardly in implementation.

Quality

The third aspect of China’s water scarcity is the issue of pollution, an increasingly salient and disruptive issue in Chinese society. Both overconsumption and pollution are a side effect of China’s economic boom, which has seen rising living standards and incomes for many, but at a major cost to the environment. Whilst many of the most notorious pollution cases are industrial in origin, much of the contaminated water is urban and agricultural. The lack of adequate wastewater or sewage treatment facilities in many cities across China has been a major source of urban pollution (World Watch Institute). In agriculture, the overuse of chemical fertilisers and pesticides are common, and runoff from farms can cause eutrophication of rivers and lakes, such as the notorious case of algae blooms in Lake Tai, Jiangsu.

Pollution of water is also more insidious in its human harm; contamination of drinking water and agricultural produce has led to elevated rates of cancer and other degenerative diseases in parts of the country. Estimates deem 40% of China’s total surface water as unsafe for human consumption.

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5 Official statistics put the irrigation efficiency of water at 0.5, far behind the 0.7-0.8 efficiency of developed countries (PRC Ministry of Water Resources 2012).
6 One notorious case being the Songhua industrial explosion in Jilin in 2006, which resulted in an oil spill on the Songhua river, and onto the transboundary Heilongjiang river. It led to the cutting off of drinking water supplies to 4 million inhabitants in Harbin and even reached Khabarovsk, Russia, causing a minor international fall-out.
use, and 90% of cities are estimated to have contaminated groundwater, putting even further pressure on freshwater supplies (Circle of Blue 2011b). The poor environmental pollution record is symptomatic of China’s industrial and economic boom of recent decades, but also of its underdeveloped monitoring institutions, and weaknesses in environmental regulation and compliance. The World Bank in 2007 calculated the economic costs of poor water quality to be 1.13% of China’s GDP in 2003 (Jiang 2009, p.3189).

* 

The Communist Party government has reason to be concerned. The effects of water shortage and pollution are not merely ecological: they have consequence for human health, crop and food security, as well as social stability. Chellaney (2011) draws out the implications of water scarcity on future state conflict in the region, however, the primary effect of conflict from water and environmental stress will first be felt foremost at the sub-national level (Morton 2008, p.53). Environmental issues have become a source of social unrest in China, one that threatens the government’s goal of ‘social harmony’. In 2005, there were around 50,000 environmentally-related protests (Gleick 2010, p.96). The Party has reason to fear the coalescing of an environmental protest movement to a democratising one; water and environmental protest are seen to have the potential to politically destabilise Party control (Nankivell 2005; Economy 2007). Indeed, the role of environmental groups and protests in many former Soviet communist states were contributors to their revolutions and eventual democratization, a history lesson the Chinese Communist Party has surely internalised. 

Water pollution and scarcity also threaten other immediate policy goals. Foremost, they put into question the viability of China’s economic growth miracle. Declining water threatens to undermine energy security and production, being integral to coal processing and the efficiency of hydropower. Water also impacts food security: droughts in recent years have had heavy tolls on grain output, leading to concerns for domestic sufficiency, as well as social stability in the wake of rising food prices.

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7 There is some evidence that numbers of mass protests (including environmental protests) are vastly increasing over the last decade (Shirk 2007, p.57), though such statistics are usually sporadic in public release.

8 See, for one example, Pickvance (1998) on environmental movements in Hungary.
The Chinese government has, in recent years, been increasingly proactive on issues of environment and sustainability, having encouraged dramatic advances in investment in renewable energy, afforestation projects, biodiversity conservation, and various urban ‘green’ initiatives. The elevation of the State Environmental Protection Agency (SEPA) to a full Ministry (MEP) in 2008 also demonstrates a recognition of the political importance of environmental issues within the central government, allowing the agency the power to negotiate at the ministry level. Indeed, the Hu-Wen leadership embedded ideas of sustainability into their political leitmotif of “Scientific Development”. Though environment and sustainability have seen increasing support and prominence in policy-making, there is an apparent disconnect between the political stature of environmental discourse, and the more strategic framing of water. Rhetorical and empirical evidence suggests that water shortage has been framed as a security issue beyond simple environmental protection, and in ways that have had environmentally damaging consequences. This securitization of water, and the security concepts it embodies, has led to particular policy responses that may be ineffective, even detrimental, to the object it seeks to secure.

Securitization and the Construction of Threat

Securitization theory and the Copenhagen school have been extensively used in examining issues both beyond the traditional domain of security – to new, non-traditional security issues of environment, migration, transnational threats and so forth – as well as broadening in geographical scope outside of Europe to application in Asia (see, for example: Caballero-Antony et al. 2006; Caballero-Antony 2008; Emmers 2003; Elliot 2007). The basic framework looks at the relationship and processes between securitizing actors, an existential threat, and a referent object deserving of protection (Buzan et al. 1998). Securitizing actors, when faced with a threat to their survival, aim to raise an issue or threat from being dealt with in the political realm into the security realm. To do this they must persuade an audience of this need through appealing to the existential nature of this threat; the convinced audience thus plays a legitimating role in permitting special actions to counter this threat.
The Copenhagen school emphasises the importance of the *speech act* in the process of persuasion, a linguistic act through which actors convince the audience of the existential nature of a threat. The magnitude and existential nature of the threat is subjective: the successful securitization of the threat requires only the mutual agreement of actors and audience that the threat is sufficiently grave to merit radical actions. Waever (1995) describes securitization as a process that recognises a threat as being one that can “undercut the political order” and puts into question the *survival* of a basic political unit (for him, the sovereignty and self-determination of the state) (p.52-3). It is the sufficiently *existential* nature of the threat that permits such emergency responses by the state and elites and sanctions ‘special politics’ – actions beyond normal political processes – in order to address it.

The Copenhagen school thus gives a comprehensive framework in examining how and when a particular issue, whether traditional or non-traditional, may become securitized, as well as by whom. The usefulness of the concept lies in its insight into how policymakers advance certain agendas through raising issues into the security realm, thus “suspending the normal rules of politics” (Jones 2010, p.408). It has also received its share of criticism. Most notably, its focus on speech acts has led to some criticism of its inherent Eurocentrism (Jones 2010; Caballero-Antony and Emmers 2006; Curley and Herrington 2011). The school’s emphasis on verbal suasion, whereby securitizing actors (politicians) persuade an audience (the public) through verbal means of an existential threat to legitimate special measures, seems to presume a democratic context. This makes its application outside of a democratic arena problematic. What constitutes the ‘audience’ and ‘special politics’ in an authoritarian system must be redefined, and the implicit notion of accountability is less relevant.

Another criticism advanced at the framework is its apparent overemphasis on speech acts to the neglect of examining security *practice* (Jones 2010; Curley and Herrington 2011). It also fails to explain why speech acts sometimes fail in their purpose to mobilise resources, and the often significant gap between rhetoric and the mobilisation it is meant to inspire (Jones 2010, p.405). Caballero-Anthony et al. (2006) also critique the limitations of the school in its neglect of motivations: why might or might not securitization occur, and what does this show about actors’ intentions and constraints? This paper draws from their research framework to
investigate not only the success in securitization of an issue, but aims to infer conclusions of the priorities and concerns of the securitizing elite. Securitization of a subjective threat can offer a reflection to the priorities and concerns of the state elites. Moreover, the treatment of an issue as a security threat also has implications for how the threat is then addressed, and the prospects for future security. Dimitrov (2002) finds that the choice of a particular referent when securitizing a threat has consequence for what responses and methods are permissible to address it, entailing a trade-off between policy goals.

The next section examines evidence that water has been securitized by the Chinese elite both in rhetoric and practice, drawing from Curley and Herrington’s (2011) analysis that captures securitization in terms of both policy responses as well as verbal speech acts. Their comparative study of the securitization of disease in authoritarian Vietnam and democratic Indonesia recognises the significance of non-verbal acts such as resource allocations and other policy responses as evidence of its securitization. They also note the impact of degrees of political decentralisation in affecting the audience’s (in this case, the local governments) ability to resist securitization, a factor also worthy of note in the Chinese case. Though the speech acts detailed below conform to the securitization framework, it is important to bear in mind that, similar to the authoritarian case of Vietnam, the democratic assumptions of speech acts do not comfortably apply to the Chinese case: persuasion and edict are inherently blurred. The authoritarian nature of government means that ‘special politics’ does not require the legitimation of the general public: the audience to convince here is internal to the government.

Speech Acts

Water has been framed in the language of security for some time and at the top levels of the Chinese government. The issue has risen in prominence in the period of the Hu-Wen administration, during which a number of officials have been far more vocal about the perils of environment and resource problems. Wen Jiabao himself, prior to his premiership, recognised in a speech in 1998 the threat of water shortage, arguing it to be a threat to the “survival of the Chinese nation” (Moore 2009, p.31). Other officials have also been vocal on the subject: the former Minister of Water Resources, Wang Shucheng, in 2004 was quoted as
saying, “In China, shortages of water are an unavoidable issue challenging national security,” noting the bottlenecks to development posed by water scarcity and pollution (China Daily 2004). The junior Environment Minister, Pan Yue, has also warned of China’s environment and pollution challenges to its development (Lorenz 2005). More recently, Hu Jintao himself, in government pledges to water infrastructure construction, has called water a “strategic resource”, central to China’s “economic…ecological… and national security” (China Daily 2011b). Recognition of water as a transboundary security issue has also featured in transboundary institutions such as the Shanghai Cooperation Organisation (SCO), the primary security forum between China and its inland Caucasian neighbours (Moore 2009, p.30). From these cases, it is clear that within the Central Party leadership, water management has been explicitly identified as a security issue.

The urgent prioritisation of water resources can also be read in official documentation: water management has featured in the 11th and 12th Five Year Plans (FYP) that announced the Politburo’s medium-term targets, as well as the Number 1 Document (2011 and 2012), the annual announcement of government priorities. Recent targets have emphasised the need to improve water conservation and efficiency in agriculture. The 12th FYP articulates plans to decrease water usage per output by 30%, and measures to constrain coal production – the largest industrial consumer of water (Circle of Blue 2011b). Water has also been explicitly linked to food security issues in the 2008 National Framework for Medium to Long-Term Food Security, again, emphasising the need for water conservation.

Legislation has also reflected the political will of the Central government in water issues: the 2002 Water Law strengthened institutional arrangements in River Basin Commissions in managing water allocations between provinces (Yong 2006). The Law on Prevention and Control of Water Pollution (1984, 1996, updated 2008) also pays more attention to the issue of water quality. These legislative responses have been escalating. Most recently the Strictest Water Resources Planning System (2012) has outlined the most severe pressures to control water demand, efficiency and pollutants, with greater pressure on local governments to control water expenditure through pricing. It establishes “Three Red Lines” of “control of development and utilization of water resources”, “control of water use efficiency” and
“restriction of pollutants in water function areas” – a holistic approach aiming to control all three corners of supply, demand and quality in water resources. (PRC Ministry of Water Resources 2012)

Policy Responses

The effective actions the state has taken in dealing with water security gives an insight into the importance it is accorded. The emphasise on speech acts as a necessity for security under the Copenhagen school makes democratic assumptions about the nature of securitization, and a distinction between ‘normal’ and ‘special politics’. Under an authoritarian context, where these are less distinct, the magnitude of certain policy actions becomes a much more salient indicator of securitization. This section details several areas where the Chinese state has mobilised heavily in addressing the water security threat: in terms of financial and budget allocations; pollution and conservation policies; and supply projects, with especial attention to the national large-scale hydro-projects that have come to define the Chinese approach to security.

Financial investment, one example that Curley and Herrington (2011) take as evidence of securitization, in China has been huge. China has pledged around $600 billion in total (US) over the next decade in combating water shortage through infrastructure (Watts 2009). The pledged budget of the Ministry of Water Resources (MWR) has been rising year on year (114.1bn RMB the previous year to 140bn RMB ($22.2 US dollars)) for building water conservation projects. Spending on water conservancy has more than doubled from the period of 2001-05, to the period of 2005-10, under the 11th Five Year plan (FYP), to 55.38 billion U.S. dollars (Xinhua 2011).

Money has also been funnelled into tackling water pollution – 110bn RMB invested between 1998-2006, according to the Vice Minister of Water Resources, improving water quality of major lakes and rivers, and raising efficiency in irrigation infrastructure for agriculture (Yong 2006). The 10th and 11th FYP have both featured targets on reduction of Water Pollution, promising consecutive 10% reductions in Chemical Oxygen Demand (COD), a prevalent measure for water pollution (Hu 2008, p.7). Both 11th and 12th FYPs have also called for
greater water efficiency in industrial and agricultural sectors, demanding the same target of 30% reduction of water use per capita of industrial output (Water Politics 2011).

China’s new green streak is self-evident in its water management policies, which have seen a new effort to tackle water pollution, from campaign-style pollution clean-ups to the legal and financial sanctioning of polluting companies. In 2005, the Ministry of Finance pledged 7 billion RMB (US $772 million) to pollution control for the major three polluted rivers and three most polluted lakes (Circle of Blue 2011b). The Water Pollution Prevention and Control Law (hereafter the Water Pollution law), first legislated in 1984 and most recently amended in 2008, shows the attention and severity with which policymakers have treated the issue of water pollution. The most recent amendments to the legislation enforced the 11th FYP targets of pollution reduction for local and provincial governments, began to institutionalise a water pollution permit system, and raised the cost of previously anaemic polluter fees.

As well as financial incentives through polluter-pays fines and sanctions, China has also in the last decade pioneered in innovative market-instruments such as Investments in Watershed Services (IWS), including government sponsored eco-compensation methods that employ market-mechanisms and financial incentives to achieve ecological and pollution prevention goals (Bennett et al. 2013). These transfers of payments, from the state to individual households or communities, from downstream provinces to upstream communities, both incentivise and compensate for the protection of a watershed area. Such mechanisms thus serve both pollution reduction goals as well as rural welfare policies, redistributing wealth to be invested in ecologically vulnerable areas. China is estimated to have spent the best part of $7 billion (US) in such IWS transactions, at the national as well as sub-national level (Bennett et al. 2013, p.21), demonstrating an emphasis on water sustainability as a part of environmental conservation and protection.

Perhaps the biggest statement of the urgency of China’s water security, however, is embodied in the South-North Water Transfer Project (SNWT), the largest water-transfer project of its kind. A behemoth of hydro-engineering, it has had $60 billion dedicated to its name and is estimated to cost three times as much as the Three Gorges Dam – emergency measures writ
concrete (Jain-Cocks 2011). Aimed at diverting the abundant waters of the Yangtze in the South, the project involves three vast man-made waterways, channelling waters northwards over 1000km to feed the Yellow River, at a rate of 44.8 billion m$^3$ a year (roughly the typical annual volume of the Yellow River), in order to alleviate the problems of drought in the North and sate the unquenchable demands of the Beijing megacity (Freeman 2011). Work on the central and eastern channels began early 2002, though completion was repeatedly delayed, and the most controversial Western route has yet to start substantial construction. The Eastern route was quickest to complete, and the Central route is expected to be in use this year (CCFA 2013).

Figure 1 has been removed due to copyright restrictions. It was a map of the South North Water Transfer project showing the routes of the Western, Central and Eastern diversions. Original source: The New York Times (2007)  

The supply-focused nature of the SNWT stands in antithesis to the conservationist, soft methods such as IWS, and dwarfs them in cost. First suggested casually as an idea by Mao, debate and controversy over the giant transfer project has spanned decades since, at home and abroad. Former water minister Wang Shucheng, among others, have voiced concerns over the ecological and social impacts – including the displacement of hundreds of thousands of people at Danjiangkou dam, an example of developmental displacement rivalled only by the Three Gorges Dam – as well as the potential environmental impact on riverine ecosystems (Water Politics 2011). The project was finally pushed for approval in the ‘90s, according to Yang and Zehnder (2005) through the support of key political backers, including President Jiang Zemin and Premier Li Peng. Justification of the project was based on the premise that supply projections in Northern China would not meet demands of development and food security,
thus the project was necessary to maintain development as well as help ecological recovery of the Northern basin. However, Yang and Zehnder (2005) suggest the statistical analysis and demand projections that justified construction were insufficient evidence of necessity. In this case, the necessity of water security seems to have pushed back tides of critical dissent.

Feasibility of the SNWT project is another issue: there are concerns over the risks of water contamination as well as the stability of supply. Droughts in 2011 meant that Danjiangkou (see map above) and several other reservoirs in central China were running at minimum levels, insufficient to supply local homes and agriculture, let alone fulfilling the burden of sending surplus to Beijing (China Daily 2011a). The SNWT is also dependent on the Yangtze’s flow; the success of the project is conditional on this being stable. The Himalayan glaciers that supply the Southern rivers are melting at unnervingly rapid rates, a climate issue that cannot be solved by water redistribution methods: glacial melt will likely create a short-term abundance that must be stored and managed, but a long-term shortfall, regardless whether the project functions as planned.

The project has also sparked regional tensions with India over the currently-stalled Western route, which would divert water at the Yarlung Tsampo bend in Tibet, effectively reducing the flow of the Brahmaputra that serves Indian and Bangladeshi populations downstream, with drastic impact for their water security. Though the Western route is currently on hiatus, China has not publicly ruled out the plans, to India’s concern, and has refused to make concrete agreements on water-sharing (Ranjan 2010).

This tendency to technocratic water management has also been also reflected in smaller, local developments. Table 1 lists recent media examples of the cost and scale of other, provincial level water transfer projects, the largest being the Central Yunnan Water Transfer project to the tune of 10 billion. Investment and innovation in desalination projects will also be accelerating in the next ten years, despite the current expense of the technology. The National Development and Reform Commission (NDRC) has made targets to triple production of water through desalination to 2.2 million m$^3$ by 2015, to help fuel growing water demand from coastal industry (National Development and Reform Commission 2012).
In recent decades there has also been significant investment in dams and hydropower across parts of the country, both as a method of water management and energy production. The Three Gorges Dam was a striking example a decade ago of the capacity and technical ambition of China’s hydro-engineering elite. Large dams, primarily hydropower, have now become a rapidly expanding industry across China and, increasingly, to the rest of the world. Around 22,000 (nearly half of the world’s total) large dams are in China (Appendix 1 shows a breakdown of China’s largest dams by cost), and are quickly becoming a global Chinese export across Southeast Asia as well as Africa. Hydropower sits at a crucial intersection between water and energy needs: they serve water security goals by allowing for better flood control, irrigation and water access – core elements of water security; but they are also a valuable energy resource essential to economic development goals. Their effects and costs are often controversial, however, as will be later discussed.

Table 1.: Sub-national Project Investments

<table>
<thead>
<tr>
<th>Investments (US $)</th>
<th>Area/year</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 billion</td>
<td>Xinjiang (Watts 2009)</td>
<td>Reservoirs for glacial meltwater, 10-year building project</td>
</tr>
<tr>
<td>3.2 billion</td>
<td>Hangzhou, Qiandao lake (Gong and Jing 2012)</td>
<td>Water transfer from Qiandao Lake in Chun’an county to Xianlin, closer to urban Hangzhou</td>
</tr>
<tr>
<td>3.7 billion</td>
<td>Guangdong Province (ibid 2012)</td>
<td>“West to East” water transfer for Guangzhou, Donghuang and Shenzhen</td>
</tr>
<tr>
<td>10 billion</td>
<td>Kunming, Yunnan province (ibid 2012)</td>
<td>Central Yunnan water transfer</td>
</tr>
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Delaying the Storm?

It is clear, from rhetorical speech acts at the Central level and legislative expression, that water has been securitized by the Chinese government. Concurrently, huge amounts of resources have been mobilised and dedicated to combating the water shortage issue. The resulting policy responses show a politically mobilised effort to tackle the problem from several fronts, but the diversity of these responses can be called contradictory at best (Boyd 2013). Technocratic solutions to water access such as the SNWT stand in heavy contrast to softer methods, such as the recent developments in watershed investment (IWS) and conservation that are emerging across the country. In terms of water security strategy, they stand in logical opposition. Environmentally conservative solutions such as IWS aim to conserve water resources and their ecological purpose through protection of riverine resources and the local ecology. Projects like the SNWT and hydropower dams are inherently disruptive to this. This bifurcation of response, and the extreme nature of China's massive water projects is revealing of the desperate urgency of the water crisis; however it also presents a puzzle in the coherency of China's water politics, and how such polarised and ethically conflicting strategies can co-exist.

Despite the co-existence of soft conservation alongside supply-side engineering projects, and the emphasis on conservation and water-saving in legislative speech acts, in terms of spending and political traction gained, policy responses such as the SNWT and such hydro-projects far overwhelm conservationist strategies. More recently, there are signs hydropower development interests are prevailing against their environmentalist critics. After a moratorium on hydropower development on the Nu river placed by Wen Jiabao, his departure from office has coincided with a resurgence in dam-building there, with some now foreseeing a new ‘great leap forward’ in Hydro-development under the 12th Five Year Plan (Li 2013; Hilton 2012; Walker 2013).

Though anti-pollution and water-conservation plans have been active in political discourse and policy-making, results in environmental pollution in the much of the past decade have been lacklustre. The 10th Five Year Plan targeted a 10% reduction in COD (chemical oxygen demand, a measure of water pollution) but between 2000-05 achieved only a 2.3% reduction;
the 11th Five Year Plan for environmental protection states plainly “the environmental protection targets... had not been met” (Hu 2008). Though public awareness of pollution and other environmental issues is high, urgency for water conservation itself in the general public is muted. Targets for water efficiency may slow down water consumption and raise its productivity, but they do not aim to reduce it.

Much funding has poured into water pollution and demand areas – exemplified in the political ascendance of the Ministry of Environmental Protection, however this is dwarfed by the scale of hydro-projects aimed at sustaining supply, whether by means of improbable redistribution, or the still-nascent development of desalination technology, which would see seawater exploitable for human use. Rather than shifting agriculture and food production patterns to adapt to rainfall and water availability, China has pushed in the opposite direction, forcibly maintaining an unsustainable agricultural and industrial hub in the North through the SNWT. NGOs have called the project “irrational” (Levitt 2012).

The rationale behind this is political in many senses. Supply-sided means are a path of least resistance – catering to human demand is easier than curtailing it. This can be seen in the way water has been securitized. Whilst the threat securitized in public discourse is clearly water shortage, the referent to be protected is more ambiguous. Water, as a resource, is singular in its instrumentality within multiple security issues. Depending on what referent water is securitized to protect, this can lead to potentially conflicting policy implications in its management. Differing conceptions of water security – whether through the lens of protecting social stability, food security or ecological security – can entail zero-sum policy responses between them (Dimitrov 2002).

From the discourse of China’s leaders, it is clear that, despite the non-traditional nature of the security threat, the referent is still very much national security. Within this notion of security is the referent of (‘sustainable’) development as an object of protection. Supply-securing projects such as the SNWT suggest what Dimitrov (2002) notes as a distinct anthropocentric bias in management, subjugating water to human interests at the cost of other environmental goods (p.683). Indeed this is made explicit in the “people first” policy in CCP documents and
speech acts; ecological security is stated as a secondary goal. Water is securitized not for its own intrinsic or ecological value, but to “safeguard the nation’s sustainable development” (Yong 2006, p.5). The development imperative, and the dependence of the state upon economic development for its political survival, subjugates water resources to sustain human activity rather than curb human activity to sustain water supplies. This security conception, and the courses of action it entails and legitimates, may be detrimental to the government’s water security goals, as well as to its other political interests.
The Political Economy of Water Security

In emphasising the *how*, securitization theory has paid less attention to explaining *why* securitization occurs in the forms it takes. As Jones (2010) argues, the Copenhagen School tends to neglect the political economy of interests within the state that informs or restricts certain threat construction, as well as being unable to tackle the puzzle of gaps between rhetorical securitization of a threat and the successful mobilisation of response towards it.

Though the Chinese state has recognised water shortage as a threat, responses to the threat have been extreme in emphasising supply and allocation, but have had less impact in constraining demand or pollution, which remains an on-going and salient social issue. In explaining the resulting outcomes of China’s water security efforts, three primary aspects of China’s domestic politics have shaped the approach to water security. Firstly, the fragmented and decentralised nature of the political system has weakened efforts towards demand and pollution control. Whilst water has been securitized at the national level, resistance in certain local areas has hindered the effectiveness of demand-control policies. Secondly, technocratic interests within the party and private sector play a role in promoting investment in key water and energy sectors that drive supply-sided solutions. Finally, ideologies of sovereignty and development in national security contribute to an over-emphasis on security of supply, often to the neglect of, and collision with, wider climate and environmental issues.

Trickle-down Governance

Often characterised as a ‘fragmented authoritarian’ system,⁹ China’s decentralised nature often means policy directed from the Centre to the periphery becomes more malleable, with parochial interests at the local government level that often conflicts with Central goals (Mertha 2009). The devolution of power during the reform era gave local governments the autonomy to boost their local economies and create the economic miracle, but it has also complicated the Central government’s ability to control them. This has implications for the how water policy has been securitised within the state. Whilst securitizing acts have mobilised resources and

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⁹ “Fragmented authoritarianism” was firstly coined by Lierberthal and Oksenberg in 1988 as a model of Chinese policymaking and development.
action from the Central government at the national level, fragmented authority means that local agents are able to resist and evade directives not to their interests, hindering the effective transmission of water security responses, particularly to the development of demand-control and pollution policies.

Economy (2004) blames political decentralisation, which left environmental protection to the responsibility of provincial and local authorities, for much of China’s environmental woes. Cadres are rewarded in their political careers for attaining economic targets; moreover, many have direct stakes in local State-Owned Enterprises (SOEs), generating little incentive to prioritise environmental or green policy goals over local and personal growth. As a consequence, protectionism of local industry and evasion of environmental standards have been endemic. Concerns for employment also make local governments understandably protective of their local industries; thus, many polluting industries are kept afloat in order to maintain local jobs and social stability, even at cost to the environment (Economy 2004, p.96)

These local interests that abet lax regulation and enforcement have been responsible for generating much of the industrial pollution that affects China’s air and waters, as Economy notes. Even with central set targets for pollution reduction and water efficiency, which have featured in both the 10th and 11th FYP, meeting such targets have been often fraught. Demand-control instruments that aim to raise water-prices and efficiency also come into tension with local growth and community welfare, where the cheap (often free) cost of utilities form part of the social welfare contract for farmers and the urban poor. These micro-level concerns have consequences for the efficacy of water policy: demand-control policies that conflict with growth and other local interests suffer in their implementation and effectiveness. The Water Pollution Law’s set pollution fines are still far too low in some cases to incentivise the prevention of pollution. Previously, the maximum fine for water pollution was capped at 1 million Yuan, a small drop in the ocean for large businesses compared to the cost of actual pollution abatement; companies simply internalise the fine as a cost of pollution emission (Wanalski 2009).
Though the promotion of the Ministry of Environmental Protection (MEP) showed its rising importance as a political actor, both it and its local agencies suffer from weaknesses in funding and manpower that hinder effective monitoring and oversight. Locally, the ministry is dependent on local Environmental Protection Bureaus (EPBs) to do its legwork. However, poor funding renders these agencies dependent on local government and pollution fees, generating perverse incentives to permit pollution and subverting their regulatory power (Economy 2004, p.113).

Regional inequalities also translate to divergent environmental performance. Many of China’s cities have seen dramatic improvements in environmental governance – Shenyang in Liaoning county is an excellent example of an industrial, smokestack hub that in recent years has become a ‘model city’ for environmental improvement. However, such success stories are often highly conditional on the compatibility of environmental and development goals. Provincial, east-coast capitals as Shenyang or Hangzhou removed their aging inefficient industrial sectors with low economic opportunity costs; greening the urban environment also served to raise their status and international attractiveness. Thus, environmental development entailed economic development, helping cities move up the production chain (Larson 2011; Morton 2005). Such industrial reforms are unavailable and unaffordable for less developed inland cities that do not have the same status or scrutiny.

This frequent vertical disconnect between central and parochial interests thus impedes the transmission and compliance of policies that the top-down securitization of water has entailed. However, horizontal fragmentation has also weakened the regulatory and enforcement mechanisms needed for demand or pollution-control policies to work. Fragmentation of authority of China’s water management has been highlighted by the World Bank as an obstacle to effective water management through its problems of coordination and raised costs of administration. Involvement in water issues is stretched out over at least 9 different ministries that include ministries for water, environmental, agriculture, land and transport – to name a handful – and responsibility for water quality and quantity is split between the MEP and MWR at each level of governance (Xie et al. 2009). This lack of centralisation thus impedes cooperation on water goals and effective monitoring, particularly in transboundary
river basin management. Furthermore, horizontal equality between the water bureaucracies and provincial level authorities means that often these ministries are unable to enforce or punish the bodies they are meant to monitoring (Wang and Ongley 2004).

The interaction of political fragmentation and prioritisations of parochial interests by provincial level government has created a huge public goods problem in the area of transboundary rivers, both in water consumption and pollution. River Basin Management Commissions, such as the Yellow River Conservancy Commission have seen success in mitigating the overconsumption problems that had previously damaged riverine ecosystems, by allocating water rights and providing better coordination over shared river basins, ensuring the provision of a basic environmental flow of the river. This still does not cure the source of demand, however. In some areas of the country, such as the Dongjiang Delta near Hong Kong and Shenzhen, despite water rights and basin management, consumption is already approaching maximum allocation, meaning water supplies are unable to deal with future growth in demand (Liu 2012).

Though the Central Government from the 10th FYP to now has been highly responsive in setting plans and targets for water efficiency and wider environmental goals, the Chinese state’s policies for water security have been overwhelmingly to secure water supply to the areas of the country that need it most – primarily, Beijing and the North China plain – rather than to constrain or transfer demand in these areas where supply is unfeasibly low. Part of the reason we observe this uneven water security strategy lies in the weakness of demand-restraint and pollution control policies in China’s political system.

Though the rhetoric of national security and existential threat proclaimed by China’s national leaders is strong, systematic integration of environmental issues into water security has been slow: the political separation of water pollution and water supply issues between government departments illustrates a cognitive disconnect between the environmental and the developmental necessities of water, manifested on a broader scale in the curious juxtaposition of soft, conservationist schemes alongside the biggest man-made water diversion project in the world.
Political decentralisation, moreover, still allows extensive space for evasion, especially in the absence of media or civil society organs that can comprehensively monitor compliance. The lack of effective monitoring bodies combined with parochial incentives to pollute leads to sluggish compliance. Securitization of water has not been complete at the local level, where rewards and incentives for local officials generally still favour economics over environment, particularly in poorer regions that depend on dirty industry for local development, limiting the effectiveness of pollution-targets and demand instruments. Bureaucratic issues in water management, in the fragmentation of authority within China’s ministries, compounds this weakness.

Given the weakness of demand instruments and the political difficulties of restraining growth and consumption, supply-side responses are thus a more effective and crucial response to water security goals, and their implementation at the national level conveniently avoids the problems of negotiation and resistance that a decentralised approach to water security incurs. This is a dynamic reminiscent of the Indonesian case that Curley and Herrington (2011) discuss, where the decentralised, democratic nature of the political system hindered the cull necessary to curtail avian flu. Despite China’s blunt authoritarianism, the securitization of water has not been complete, its efficacy limited by its fragmented structure.

**Supply-side politics**

While the vagaries of fragmented authoritarianism have rendered demand and quality-control policies relatively weak, at another corner on the triangle there has also been a marked push for supply-side solutions within China’s water security policies, characterised by what Tsering (2005) calls a ‘political faith’ of Party leaders in large-scale engineering and infrastructural projects that often raise more issues in water sustainability than they cure. Though securitization rhetoric and discourse have stressed conservation and pollution-control, the budget allocations for such policies are dwarfed by the spending on water construction projects. The most notable, and provocative examples of this are the South-North Water Transfer project, and its predecessor, the Three Gorges Dam, which remains the largest and most ambitious large dam in the world – both paradigmatic of the CCP’s ethos towards controlling the forces of nature. The trenchant hydro-engineering interests within the Party
continue a technocratic, almost Maoist, approach to dealing with natural resources, even as other organs of the Party push more conservative, conservationist methods.

Two primary motivations fuel investments in these technical projects. The first is functional: the need for water and flood control is a water security issue that has spanned dynasties. Dams serve functional purpose in mitigating cycles of flooding, as well as creating the reservoirs necessary for large-scale irrigation projects on which Chinese agriculture depends. Securitization of water has also conflated the economic interests of water and energy sectors, as hydropower becomes an increasing sector of China’s electricity generation. Moreover hydropower now coincides with wider ‘green’, climate goals, being classified as a ‘clean development mechanism’ (CDM) under the Kyoto protocol. China has now made hydropower expansion integral to its emissions reductions targets, having pledged to getting 15% of its energy supply from renewable sources by 2020 (Meng 2011).

The other motivational push of the strategy is political: the energy and hydropower-sector have been hugely influential in pushing hydropower policies. The ties between water construction and the political elite form what Tsering (2005) labels a ‘water-industrial complex’, forming a vested interest with political and profit incentives to push for hydropower expansion. One prominent example is the state-owned Sinohydro, a former employer of former President Hu Jintao in his early career. Sinohydro is currently a publicly-traded company that is 70% state-owned, and has been responsible for building around half of the dams in China, as well as becoming the ‘face of Chinese expansion’ overseas with projects in 55 countries from Africa to South America (Hook 2012). Such state-sponsored dam companies, encouraged by China’s “going out” policy, have combined profit and private goals with international diplomacy, forming part of China’s infrastructure based soft-power strategy in areas from Southeast Asia to South America and Africa.

Other, personal ties connect political and energy sector elites. Former premier Li Peng, who alongside Jiang Zemin was instrumental in pushing forward the Three Gorges Dam, as well as gaining consensus on the SNWT, has familial ties to Huaneng, China’s largest energy producer (the president of which is his son). Such ties between hydropower projects and
energy companies create a mutually reinforcing dynamic on a macro-level that spurs on hydropower development. At the local level, microeconomic interests also make hydropower attractive: as a source of power they attract industry to the area to take advantage of it. Benefits in employment of construction workers and engineers also create an on-going incentive to continue expansion. As one massive project ends, another must begin to absorb the redundant, shifting labour supply – one may observe the consecutive construction of the SNWT soon after the Three Gorges’ completion. Such localised economic benefits mean that at the local government level, authorities are generally supportive of hydropower projects, even at the neglect and cost of local communities and ecosystems.

Given the centrality of hydropower expansion into China’s carbon emissions reduction targets, their tension and conflict with environmental interests at the local level is both problematic and ironic. Though hydropower is a classified CDM, seen to be conducive to global climate change goals, its local environmental impact is dubious. NGOs and environmentally-focused media note that dams are less clean than they appear: their construction in remote, often ecologically fragile, regions of China encourages and attracts polluting industries closer, as well as still requiring coal-plant back-ups for temperamental blips in hydroelectricity generation (Meng 2011). Large-scale dams are also heavily detrimental to riverine ecosystems and soil fertility downstream; for many Chinese dams, the effects on livelihoods of farmers and fisheries go beyond into downstream S.E. Asian neighbours. Socially, they have led to huge displacements of communities and homes. Experts have also expressed concerns over their possible negative impact on seismic activities in geographically sensitive areas, where they are often located (Liu 2012).  

Given the range of criticisms and caveats surrounding dams and hydropower, and the frequent clash between energy and environment in the hydro-engineering sector, the acceleration of hydropower development is a worrying trend. Many dam companies have a poor record in meeting environmental assessments or gaining environmental approval in their projects (International Rivers; Circle of Blue 2011). Mertha (2008) documents several cases of conflict.

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10 Scientists have suggested that the Zipingpu dam of the Three Gorges Dam played a role in producing greater seismic stress and activity in the region, leading to the Sichuan earthquake of 2008 (Liu 2012).
between hydropower and environmental/social protests against them, such as the case of the Nu River hydropower development project, and the tenuous victory of the anti-hydropower movement (a SEPA and civil society coalition) against determined hydropower interests. Even in the case of the Nu, where the protest was salient enough to bring the personal intervention of Wen Jiabao and moratorium on construction of the 13-piece cascade dam, the momentum for construction has not been entirely halted. Not long before Hu and Wen stepped down, recent announcements saw a resurgence in hydropower in Southwest China (Meng 2011). The NDRC has recently lifted the ban on the Nu river, in the advent of the 12th FYP and its emphatic targets for energy efficiency and renewables. These functional concerns, as well as their political and economic clout, have led to the seemingly indefatigable dominance of hydropower interests within the state that pushes for supply-side solutions, to the detriment of the local environment and livelihoods.

The dominance of hydro-engineering as a means of water security raises other dilemmas. With regard to supply-side solutions as the SNWT, that aim to increase water supply in part of the country, such costly and ambitious solutions contain within them an inherent dilemma on the value of the resource they deliver, versus the value and cost of the project. The price of water that the SNWT delivers, if and when it is successfully completed, is a delicate balance: too low a fee disincentivises prudent use and conservation, but too high negates the economic efficiency of the project. Thus the need for tangible returns on the project may end up sustaining the moral hazard of too-low water pricing that contributed to the water shortfall in the first place (Yang and Zehnder 2005). Moreover, the private power of hydro-engineering and energy firms hinders other water security efforts, and offers difficult space for compromise. Indeed, the lack of coordination between water management bodies and stakeholders on water resources, as well as the active opposition between energy and environmental interests, serves to obstruct the development of alternative ‘integrated water resource management’ solutions, which would promote negotiation and compromise between development, human and ecological needs (Vorosmarty et al. 2010). Many scientists and such experts agree that more integrative approaches to water resource management is needed, however establishing this in China’s pluralistic, contested political structure will be a fraught task.
Security and Sovereignty

The previous sections dealt with the impact of China’s internal political system in shaping the effectiveness and salience of its domestic water security responses; however another problem to China’s water securitization lies in the discursive way it has been securitized. Beyond the anthropocentric bias exemplified its infrastructural projects, the Chinese government’s securitization of water in its referent has adhered ideologically to a nationalistic conception of security, as opposed to an ecological or human security framework. This has generated a non-sustainable commitment to sovereignty in management of food, water and a decidedly unilateral bent to its transboundary relations in water cooperation.

Water, as well as being tied to China’s energy security, has also been inextricably tied to food security, made explicitly in the 2008 National Framework for Medium to Long-Term Food Security document. Despite its ecologically inefficient logic, the rationale for the SNWT was based on the need to increase water supply to China’s arid northern plains, since maintaining the regions food production was necessary to food security goals (Yang and Zehnder 2005, p.345). The state has required a ‘red line’ of 1.8 billion mu (120 million hectares) of farmland preserved, and demands a minimum of 450 million tonnes of grain per year to ensure food security; the target is to achieve 95% sufficiency by 2020 (Chellaney 2012, p.146; Xinhua 2008). Rather than opening up to international food markets, where virtual water transfers could be employed through the import of water-intensive food, China has equated food security with food sovereignty, demanding near-self sufficiency in agricultural output. However, this strategy is becoming increasingly tested by China’s water and land constraints, as arable land is consumed by urban growth, and the coastal economic boom has served to push agriculture increasingly inland to areas already scarce in water resources.

Parallel to the rhetoric on water, this need for self-reliance in food springs also from explicit national security concerns. Understandably, given China’s recent history, the availability and stability of food supply is a matter central to national security, and to the political security of the Party’s tenure. However, given the severity of water-stress in China’s food producing
regions, particularly the North China Plain, achieving food security is an increasingly difficult task. Moreover, food security and water security goals produce competing policy priorities. The pricing of water at cost complicates food security: though water prices in urban areas have begun to rise to reflect scarcity, higher water prices hurts poorer farmers, and raises the cost of producing food. This in turn reduces farmers’ production of food supply, as well as leading to higher food prices, which itself has serious implications for social stability (Liao et al. 2008).

Agricultural efficiency has been emphatically addressed in the most recent 12th FYP, showing an urgent cognisance of the problem, but given the difficult balancing of such goals, supply-side projects are a politically easier solution in the short-term.

The emphasis on sovereignty as the means to security, however, precludes international solutions that may alleviate the impact of food security demands on China’s already stressed land and water resources. Whilst there are negative consequences of China being a net food importer – the shock to international food prices would disproportionately hit poorer countries – the policy of continued self-sufficiency is simply untenable given current limits of land (China is already dangerously close to its “red line”) and its overtaxed water supply. This emphasis on sovereignty also extends to China’s water treatment sector, where national security concerns preclude foreign dependence in strategic sectors such as water. This may be justified; however it has limited foreign involvement in the water and water technology sector, closing opportunities for foreign expertise and competition and instead slowly fostering domestic water utility and technology industries. This has meant a slow and limited pace of innovation in crucial sectors such as wastewater management (where the lack thereof in many parts of China has been a major contributing factor to water pollution), and restricted access for foreign competition or expertise (Hu 2008). Optimistically, the 12th FYP has promised a doubling of commercial investments into wastewater; whether it can keep pace with the rate of wastewater generation remains to be seen.

China’s reflexive cling to sovereignty is also evident in its uncooperative behaviour as an international actor. Regionally, it has refused water-sharing treaties with downstream neighbours such as India that would enhance their water security, despite being in the process of constructing dam structures (at the Yarlung Tsambo, at the Western route of the SNWT).
that would hugely impact their water supply downstream. Whilst China has cooperated in the 
SCO over its inland, minor transboundary rivers, there has not been similar cooperation on its 
outflowing water at its southwestern borders. China has declined to join the Mekong River 
Basin Commission, the organisation that ensures joint management of basin resources 
between states.11 It is thus difficult for downstream countries to voice their concerns over 
China’s control of their water supply, and fuels regional distrust of their larger, increasingly 
powerful neighbour (Goh 2006). Chinese dams, both in their uneven benefits and local 
impacts, are generating a grassroots backlash that is destructive to the image of benevolence 
that China’s foreign policy aims to project.

Internationally, sovereignty has conditioned China’s response to climate change. Despite the 
impact of climate change on its fragile glacial water supplies, China has refused to securitize it 
internationally, citing concerns for national sovereignty (Moore 2009). China has also been 
criticised for its reluctance to commit to binding agreements at the recent, lacklustre 
Copenhagen summit, and whilst it has made pledges of reductions in carbon intensity, Carraro 
and Tavoni (2010) point out this is achieved in continuing business-as-usual based on current 
efficiency trends. Emphasising emissions reduction relative to growth ensures that economic 
development is still affordable, but business-as-usual will likely be insufficient to maintain 
warming trends at the scientifically demarcated 2ºC threshold (Watts 2009). Climate change 
will induces vicious cycles between water security and food security: as average temperatures 
increase, the precipitation that feeds China’s major rivers could drop by 30%, with severe 
impacts for domestic grain yields in the second half of the century (Morton 2008, p.57). Even 
if the SNWT were successfully completed by 2050, its function may be soon rendered futile.

In sum, securitization through the label of national security in areas of water and food have 
produced policy responses that emphasise national sovereignty, fuelling policies of food 
security domestically that are ecologically unsustainable, whilst closing down valuable 
external avenues and cooperation. China’s need to secure its development against international

11 The institutional organisation for countries signatory to the 1995 Mekong Agreement, and currently includes 
Thailand, Laos, Cambodia and Vietnam.
interference has also strengthened its adherence to sovereignty, making it an uncooperative international actor at a time when other states are anticipating its cooperation and leadership.

**Conclusion: the Perils of Securitization**

This paper draws from securitization theory to argue that China has, in discourse and action, securitized the domestic water shortage threat, and goes beyond the Copenhagen school to analyse why we observe particular forms of response. Security in the Copenhagen school is a subjective understanding; evidence of securitization gives us insight into the priority accorded to certain threats and referents; it also offers us a glimpse into the agenda and constraints of policy-makers. Despite its useful insights, this case also exposes some of the difficulties of the Copenhagen School framework in application to an authoritarian, decentralised framework. As a theoretical contribution, the Chinese case, as with other Asian states, lend support to the methodological examination of policy responses as well as speech acts in order to ascertain what the ‘special politics’ of securitization might entail. One finds that the persuasive purpose of speech acts and the direct actions of policy are often blurred: persuasion is not usually a necessary tool in an authoritarian system. Thus speech acts are not representative of persuasion but command; however, whether such commands lead to effective responses and produce security is another issue. But the problems of decentralisation in the case of water resources, and the gaps between speech acts and effective action, indicate that perhaps persuasion needs to be more adequately employed.

By examining both speech and policy, further questions and puzzles open up as to how and why such disconnects between rhetoric and policy might appear. China’s securitization of water, its recognition in legislation and speech acts, and the decisive actions it has taken towards the threat of water shortage threat shows a concerned leadership with the political will to act in practice as well as preach. However the way that water security has been pursued – frequently manifested in supply-side engineering projects – reveals a strategy that is addressing the symptoms of the water crisis rather than the source. There is also an apparent incoherence in the juxtaposition of such technocratic engineering means alongside
environmental efforts across the country that promote progressive goals of watershed and biodiversity protection, and that emphasise ecological security as part of water security.

Through the lens of fragmented authoritarianism, we find that the mobilisation that securitization has produced has been constrained and shaped by domestic structures and forces. On top of this, the referent that has been securitized – the notion of people first ‘sustainable development’ – explicitly puts ecological security secondary to the prior goal of ‘sustainable development’, with consequence for the policies that may be legitimated.

The fragmented nature of China’s political system and institutions has left structural weaknesses in the governance of water in both demand and quality. Previous decentralisation of authority to provincial and local authorities have allowed a tragedy of the commons in past decades for shared water resources, leading to poor environmental performance and endemic resistance to imposed pollution targets. Horizontal fragmentation of responsibility over water between departments at the central level has also weakened intra-governmental management and coordination over water. Unsurprisingly, this has led to sluggish effectiveness in pollution and demand-restraint policies in many parts of the country. Hence, despite successful securitization at the Central level in terms of resource and policy mobilisation, at the local level, water security in terms of quality and demand have been mixed, as parochial interests resist and compete with securitization from the Centre.

Political fragmentation has salient implications for resource securitization within the state: it applies not only to the structural difficulties of coordination between state agencies, but it also sets competing goals within the state. China’s leaders have rhetorically tried to securitize water through the lens of ‘national security’, and made ‘sustainable development’ central to this – this is clearly visible in Yong (2006) and in Hu’s speech on the strategic value of water (China Daily 2004). This has made water security an instrumental, as well as competing goal with other referents of food and energy security. In this arch-referent of development, hydropower and water diversion investments cannot be said to be irrational: it has been the path of least resistance for decision-makers within the Central government.
Moreover, within China’s pluralist system, there have emerged powerful economic interests between the state and private sector that pushed water security through technocratic hydro-engineering means, leading to a visible tendency towards supply-side projects in securitizing water. Personal linkages, as well as diplomatic strategy, have made hydropower and dam construction a Chinese specialty home and abroad. These investments in water technology and construction ensure at least a short-term control over water resources for development in the near future, but have also developed a powerful, employment-generating hydropower industry that has brought national economic influence abroad – two birds with one concrete brick. Such supply-side solutions are politically easier to implement: they maintain and sustain “sustainable development” and do not endanger the means of growth for local authorities; they also require less decentralisation of control than trickle-down demand and pollution policies.

Securitization has generated negative ripple effects, however. Though hydro-engineering projects can serve energy security as well as water goals, they are often ecologically damaging to their local and downstream populations and ecosystems. This securitization of water for development compels strategies of supply-side security that is ecologically harmful in the long-run, as well as fuelling already high social discontent against the Party by those communities forced to sacrifice for projects to feed the thirst of their urban betters. Alternative solutions, such as the ‘integrative water approach’ would balance sustainable human water usage with ecosystem protection (Vorosmarty et al. 2010). Such mechanisms require consultation and mediation entailed between stakeholders, and would require far greater institutionalisation in water management than is currently the case, given the fragmented state of interests and control within the system (Zhang et al. 2010). More broadly, this reliance on technical solutions such as dams and water transfers may also reduce the urgency to curtail the unsustainable demand that lies at the root of the problem, and diminishes the urgency of combating it.

Internationally, China’s unyielding complex of sovereignty over its transboundary water resources and aggressive hydropower projects abroad also affect its soft power, damaging the benevolent international image it seeks to project. China’s dam-building activities on the Lancang Jiang (Upper Mekong) and elsewhere, often without consultation with its lower
riparian neighbours, have been a source of regional tension; and its plans to divert the upper Brahmaputra within Tibet will have serious consequences for downstream neighbours India and Bangladesh. In a region already water scarce and at highest risk globally of water related conflict, China’s attempts to ensure domestic water security may contribute to greater insecurity overall in the Southeast Asian region (Chellaney 2012, p.149). As climate change creates greater turbulence in the region’s water supply, China’s hydroprojects and dams may be rendered obsolete as glacial rainwater drops, and may even exacerbate the water scarcity problem with its neighbours. The pressures and tensions over water supply that climate change exacts creates greater need for a more cooperative and collaborative international actor willing to expand the definition of security beyond its own sovereign turf.

China’s current approach, driven by development imperatives, treats water as a resource separate from its environmental context and purpose. Though environmental issues are gaining traction as a political concern, the needs of energy, development and water supply retain a higher short-term priority. However, growing protests over social and environmental problems – mostly recently, discontent over the ‘Beijing fog’ grow increasingly vocal – shows China urgently needs to improve its environmental governance from the bottom up and shift incentives at the local level. Though “scientific development” has spurred investments in pollution control and clean-tech, making growth cleaner does not change the ultimate goal of growth, nor the inexorable – arguably unfeasible – demands for higher living standards and consumption in the population.

Though there has been a greater political will to tackle issues of demand and pollution, whether China can withstand the emerging water scarcity problems of the future will depend on the government’s internal discipline and ability to balance between water, energy and environmental demands. Even with advances in water governance, it remains to be seen whether China’s growth trajectory is a feasible task, or whether ‘sustainable development’ proves to be an oxymoron. The Party’s self-perceived dependence on growth for its legitimacy and national security suggests a rising power that is deeply insecure. Whether China can summon the bureaucratic discipline and the political will to make the economic trade-offs

\[12\] Watts (2010) goes so far as to call it a “rebranding exercise”. (p.297)
necessary to effectively address the long-term threat, and how it does so, will portend the shape and rise of the superpower to come.
Bibliography


Appendix:

Table 2. has been removed due to copyright restrictions. It was an edited version of a chart that showed the major dam constructions in China, their location, cost, hydro-electric power, and ordered by cost. Original source is Circle of Blue (2011): “Surge of New Dams in Southwest China Produces Power and Public Ire”, http://www.circleofblue.org/waternews/2011/world/burst-of-new-dams-in-southwest-china-produces-power-and-public-ire/