

中、印爭水之戰

Challenges in Asia China, India, and War over Water

譯者簡介



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Abstract

This article examines the likelihood of water insecurity causing war between China and India. Water insecurity itself will not likely lead to armed conflict. But when coupled with other international and domestic factors, it could increase the likelihood of war. China's water scarcity and its widening north-south water gap have increased pressure to execute controversial water diversion plans. These plans will threaten India, especially since the Brahmaputra River flows through a disputed area. These factors, plus changing domestic conditions in China, may increase the likelihood of war.

摘要

本文在於檢視中、印之間因水資源安全可能導致戰爭的可能性。水資源的不安，本身不太會演變成武裝衝突。但是當與其他國內、外因素摻雜在一塊時，就有產生戰爭的可能。中國的水資源短缺和南北水源差距的擴大，加大了必須執行備受爭議的引水計畫



的壓力。這些計畫將威脅到印度，特別是因為雅魯藏布江流域，若再加上中國內部條件的變化，就難保不會發生戰爭。

Over the past decade, numerous analysts and scholars have speculated about the likelihood of India and China going to war over water. Some maintain a future "water war" will occur-and others call such fears overblown.¹ These arguments focus on how water is unevenly distributed and how China's upstream behaviors, such as its damming activities, could instigate conflict with its downstream neighbor.

在過去十年中，預測中印可能會因水而戰之分析家和學者，汗牛充棟。有人認為未來終將「為水一戰」——也有人認為言過其實。¹這些論點集中在水資源分布不均，中國在河川上游如截流造壩等行為，都可能與下游鄰國產生衝突。

To determine if water scarcity could cause military conflict between these two states, an extensive analysis of factors affecting relations between India and China, as well as domestic conditions within China, are needed. Such analyses suggest water scarcity itself will not likely lead to war. However, coupled with other factors such as increasing water scarcity in China, linkages between water scarcity and national sovereignty, and decreasing political stability in the upstream state, war may become more likely.

兩個國家究竟會否因水資源短缺而引發軍事衝突，必須就影響中、印雙方關係的內在因素全面的加以分析。分析結果顯示，若只因水資源缺乏，本身是不會引發戰爭；但若加上其他中國內部因素，例如水資源缺乏日益嚴重、國家主權問題、河川上游國家政治上的不穩定等，就有可能發生。

The glaciers in China's Tibet are melting at a faster rate, and coupled with growing water scarcity and a widening north-south regional water gap, China will face increasing pressure to implement a controversial upstream water diversion plan in its western provinces. This plan will threaten India since the downstream portion of the Brahmaputra River flows through a

1 兩個相反的論述的要旨請參閱：Sudha Ramachandran, "Water Wars: China, India and the Great Dam Rush," The Diplomat, April 3, 2015, <http://thediplomat.com/2015/04/water-wars-china-india-and-the-great-dam-rush/>.

disputed area with strong implications for national sovereignty. Both states will then increase their security postures in an already heavily militarized border region. As China's economic growth continues its downward trajectory, popular nationalism will threaten the Chinese Communist Party's ability to pursue a foreign policy uninfluenced by populism and public opinion. The likely net result: a likely water war between the two states.

西藏的冰川融化愈來愈快，加上水資源日益缺乏，以及南北水資源差距加大，迫使中共必須面對在西部各省的水源地分流引水計畫，影響到雅魯藏布江下游流經中印未定界地區，從而引發的主權爭議。雙方都會因而在已部重兵的邊界加強安全態勢。當中國經濟成長繼續下滑，會使得中共外交政策不得不顧慮到群眾的民族主義與大眾意見，此時就難保兩國不會發生水資源戰爭。

Water Scarcity and Conflict

The idea of water security has gained traction over the years, and is defined as "the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems, and production, coupled with an acceptable amount of water-related risks to people, environment, and economies." This idea includes the negative effects of having too little water, or "water scarcity," and damage from having too much water such as floods, contamination, erosion, and epidemics.² This article focuses on the scarcity component of water insecurity and assesses six driving factors that make it more likely China and India will fight over water in the future. But, first, let us discuss how water scarcity is related to conflict.

水源匱乏與衝突

水資源安全觀念多年來一直引人注目，被定義為「擁有充足且具備衛生、可飲用、環保與用以生產使用的水，同時對人、環境、經濟的量度均在可接受的風險內。」此一觀念包含缺水，或「匱乏」狀態，或大水而造成氾濫，污染、侵蝕與流行疾病等負面影

2 David Grey and Claudia W. Sadoff, "Sink or Swim? Water Security for Growth and Development," *Water Policy* 9, No. 6 (Washington, DC: The International Bank for Reconstruction and Development/The World Bank, 2007): 545-546.



響。²本文重點放在因水的匱乏產生的不安，並評析未來中、印兩國可能因此而造成衝突的六大因素。不過首先從水的匱乏與衝突之間關係談起。

People can survive plague, war, and natural catastrophes, but they cannot survive without water. Unfortunately, fresh water is an increasingly scarce and precious resource. Less than 2.5 percent of all water on earth is fresh water, and more than half of it is trapped in polar ice and high-altitude glaciers around the world. This precious-little amount is declining due to increasing consumption, pollution, and climate change. "Global per capita freshwater availability has unstoppably declined for more than a century, plummeting more than 60 percent since 1950 alone."³

人類可以在瘟疫、戰爭和自然災害狀況下活下來，但如果沒有水，就無法存活下去。不幸的是，淡水愈來愈少，也日益顯得珍貴。地球的水只有不到2.5%是淡水，半數以上還被封在極地冰原與高山的冰川之中。由於消耗、污染增加，加上氣候變化，此一珍貴水量日漸減少。「一個多世紀以來，全球人均淡水供應量不斷下降，自1950年以後就下降了60%。」³

At the turn of the millennium in 2000, more than one billion people could not access clean drinking water.⁴ According to a recent article co-authored by the chair of the Department of Water Engineering at the University of Twente in the Netherlands and a water scarcity expert from the Johns Hopkins Water Institute, approximately 66 percent of the world's population, or more than four billion people, live in areas under severe water scarcity. Of these four billion people, one billion live in India, and 900 million live in China; the majority of their populations thus live in areas of severe water scarcity.⁵ In 2006, a World Bank Working Paper on water scarcity claimed "China will soon become the most water-stressed country in East and Southeast Asia."⁶

3 Brahma Chellaney, *Water, Peace, and War: Confronting the Global Water Crisis* (Lanham, MD: Rowman & Littlefield, 2013), 60, 62.

4 Thomas F. Homer-Dixon, "Scarcity and Conflict," *Forum for Applied Research and Public Policy* 15, no. 1 (Spring 2000): 28.

5、6 於下頁。

在2000年的千禧年前後，全球有10餘億人無法獲得清潔的飲用水。⁴據最近一篇由荷蘭特溫特大學水利工程系主任與約翰霍普金斯水研究所的水匱乏專家共同撰寫的一篇論文指出，全球約有66%人口，超過40億人，生活在嚴重缺水的地區。這40億人中，有10億居住在印度，9億住在中國；兩國大部分人口都居住於水資源嚴重短缺地區。⁵2006年，世界銀行水資源匱乏工作報告聲稱：「中國很快成為東亞和東南亞地區缺水壓力最大的國家。」⁶

Water scarcity is also linked to food availability. Agriculture accounts for 70 percent of all global water consumption, compared to 19 percent for industry and about 11 percent for drinking.⁷ The Strategic Foresight Group, a prominent India-based think tank that publishes extensively on climate change and environmental issues, projects both India and China will face a 30 to 50 percent decline in rice and wheat yields by 2050 due to "the cumulative effect[s] of water scarcity, glacial melting, disruptive precipitation patterns, flooding, desertification, pollution, and soil erosion."⁸

缺水也與糧食供應密不可分。農業用水量占全球70%，工業用占19%，飲用占11%。⁷「戰略前瞻集團」是印度知名智庫，發行甚多氣候變化與環境問題專書，預估到2050年中、印兩國，會因為水匱乏、冰川融解、破壞性降水模式、淹水、沙漠化、污染和水土流失等產生的綜合效應，面臨稻米與小麥產量減少30~50%。⁸

Brahma Chellaney, Professor for Strategic Studies at the New Delhi-based Center for

5 Mesfin M. Mekonnen and Arjen Y. Hoekstra, "Four Billion People Facing Severe Water Scarcity," *Science Advances* 2, no. 2 (February 12, 2016): 3. The two authors assessed water scarcity on a monthly basis using a ratio between water consumption and water availability. A water scarcity (WS) ratio of greater than 2.0 meant consumption far exceeded water availability and severe water scarcity. By their calculations, more than four billion people live in areas with a WS score greater than 2.0.

6 Zmarak Shalizi, "Addressing China's Growing Water Shortages and Associated Social and Environmental Consequences," *World Bank Policy Research Working Paper* - Vol. 3895 (Washington, DC: The World Bank, April 2006): 5.

7 Chellaney, *Water, Peace, and War*, 64.

8 Strategic Foresight Group, *The Himalayan Challenge: Water Security in Emerging Asia* (Mumbai: Strategic Foresight Group, 2010): iv.



Policy Research and a noted scholar on water security, asserts water is now the world's most extracted resource.⁹ In fact, water is already more expensive than oil. According to the US Energy Information Agency, the average retail price for gasoline for all grades in the United States on February 1, 2016 was \$1.93 per gallon, or \$0.51 per liter, well below the retail price US consumers pay for a liter of water.¹⁰

切蘭利(Brahma Chellaney)是新德里政策研究中心的戰略研究教授，也是一位著名的水資源安全學者，他認為水是現在世界上被榨取最多的資源。⁹實際上，水已經比石油貴。根據美國能源資訊署的統計，2016年2月1日美國各級汽油的平均零售價格為每加侖1.93美元，即每公升0.51美元，遠低於美國消費者支付一公升飲水的零售價。¹⁰

In the scholarly literature regarding water security, one common refrain is, "no nations have ever gone to war strictly over access to water, nor are any likely to do so in the future."¹¹ Juha Uitto, at the United Nations Human Development Program, and Aaron Wolf, professor of geography at Oregon State University, find only one war was fought over water, and only seven cases exist of acute water-related violence between states.¹² Moreover, there have been more than 3,600 water-related treaties over the years, reflecting a strong record of cooperation.¹³

水資源安全的學術文獻中有一個常見的保留說詞，就是「從來沒有一個國家因爭奪

9 Chellaney, *Water, Peace, and War*, 5.

10 "Weekly Retail US Gasoline and Diesel Prices," US Energy Information Agency Independent Statistics and Analysis, February 1, 2016, https://www.eia.gov/dnav/pet/PET_PRI_GND_DCUS_NUS_W.htm (accessed February 7, 2016).

11 Jack A. Goldstone, "Population and Security: How Demographic Change Can Lead to Violent Conflict," *Journal of International Affairs* 56, no. 1 (Fall 2002): 8.

12 Juha I. Uitto and Aaron T. Wolf, "Water Wars? Geographical Perspectives: Introduction," *The Geographical Journal* 168, no. 4 (December 2002): 289. 七項案例：1948年印度與巴基斯坦印度斯盆地(Indus basin)、1951年敘利亞與以色列因以色列在Huleh Basin之水利計畫之爭、1958年埃及與蘇丹因尼羅河引水之爭、1963-1964年索馬利亞與衣索匹亞因引水至Ogaden沙漠發生的爭端、1965-1966年以色列與敘利亞因阿拉伯國家計畫自約旦和因水引發戰爭、1975年因幼發拉底河引水，造成伊拉克與敘利亞爆發衝突、1989-1991年茅利塔莉亞與塞內加爾因塞內加爾和主權爭議爆發衝突。同時青參閱 Aaron T. Wolf, "Conflict and Cooperation along International Waterways," *Water Policy* 1, no. 2 (January 1998): 256.

13 Uitto and Wolf, "Water Wars? 289; and Todd Hofstedt, "China's Water Scarcity and Its Implications for Domestic and International Stability," *Asian Affairs: An American Review* 37, no. 2 (April-June 2010): 77.

水資源而走向戰爭，未來也似乎也不會。」¹¹聯合國人類發展計畫中的優圖(Juha Uitto)和俄勒岡州立大學地理學教授沃爾夫(Aaron Wolf)發現只有一場戰爭是為了爭水而起，國家之間因水而產生的暴力事件只有7起。¹²此外，多年來與水有關的條約有3,600餘項，反映出合作記錄良好。¹³

Yet, there is a growing body of work suggesting water security will cause war. Peter Gleick theorizes environmental security issues will become a more dominant part of international discourse in the postCold War era. He claims rapid population growth, increased migration, greater demands on environmental resources, and future climactic changes will increase international tensions over shared fresh-water resources.

然而，越來越多的研究認為水資源安全會引發戰爭。格萊克(Peter Gleick)認為環境安全理論會成為後冷戰時期國際論述的主流。他主張人口快速成長、移民的增加、對環境資源要求的增加、未來氣候的變化等因素，使得國際共享淡水資源的緊張局勢增高。

In 1978, when Ethiopia publicized its intention to construct dams in the upstream section of the Nile River, Egypt's President Anwar Sadat said, "We depend upon the Nile 100 percent in our life, so if anyone, at any moment, thinks to deprive us of our life, we shall never hesitate [to go to war] because it is a matter of life or death."¹⁴ Furthermore, water has contributed to fighting in the Middle East between Israel and its Arab neighbors for decades. Located in one of the driest areas on Earth, Israel relies on the Jordan River for much of its water, a resource it shares with the four other riparian states: Lebanon, Syria, Jordan, and the Palestinian Authority.¹⁵

衣索比亞1978年宣布準備在尼羅河上游建築水壩時，埃及總統沙達特(Anwar Sadat)就說：「我們全靠尼羅河生活，如果有人在任何時間、地點想剝奪我們的生活，我們將毫不猶豫『走向戰爭』，因為它是一個攸關生死的事情。」¹⁴何況，在中東以色列與阿

14 Peter H. Gleick, "Environment and Security: The Clear Connections," Bulletin of the Atomic Scientists 47, no. 3 (April 1991): 17, 20.

15 Meredith Giordano, Mark Giordano, and Aaron Wolf, "The Geography of Water Conflict and Cooperation: Internal Pressures and International Manifestations," The Geographical Journal 168, no. 4 (December 2002): 295.



拉伯鄰國因水而戰，打了有幾十年。以色列位在地球上最乾旱的地區之一，用水大部分依靠約旦河。這條河沿岸有4個國家分享其水資源：黎巴嫩，敘利亞，約旦和巴勒斯坦當局。¹⁵

In the late 1950s, Israel began a project to divert water away from the Jordan River for distribution elsewhere in Israel. Arab states responded with their own project to divert water into Lebanon, Syria, and Jordan. In 1964, the year the Arab project was supposed to commence, the first of a series of border clashes between Israel and Syria occurred that targeted water facilities. These clashes contributed to the state of heightened tensions between Israel and the Arab states during which time Egypt mobilized its military along the Sinai Peninsula. Israel responded with a preemptive attack, and the 1967 Six-Day War.¹⁶ Rebecca Lowe and Emily Silvester's report on water shortages threatening global security argues water can spark conflict when other destabilizing factors already exist: "combine water scarcity with political instability, increasing resource demands and climate change, and the 'perfect storm' for conflict can be created."¹⁷ While water can help cause war, it is surely not the sole reason for a war: "when territorial disputes overlap with water wrangles-as has been the case in a number of prominent post-World War II feuds-water is usually an underlying driver, rather than an overt instigator of conflicts."¹⁸ Miriam Lowi, noted scholar on water scarcity in the Middle East, argues the geographical positions of states along a transboundary river system also affect the level of cooperation over water distribution-with clear advantages going to the upstream state which could use the water unilaterally without regard to the needs of the downstream state.¹⁹

1950年代末，以色列將約旦河的水引到以色列境內各處。阿拉伯國家則以規劃將水

16 Miriam R. Lowi, "Water and Conflict in the Middle East and South Asia: Are Environmental Issues and Security Issues Linked?" *The Journal of Environment and Development* 8, no. 4 (December 1999): 387.

17 Rebecca Lowe and Emily Silvester, "Water Shortages Threaten Global Security," *International Bar Association Global Insight* 68, no. 4 (August 2014): 48.

18 Chellaney, *Water, Peace, and War*, 54.

19 Miriam R. Lowi, *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin* (New York, NY: Cambridge University Press, 1993), 10.

引入黎巴嫩、敘利亞和約旦做為回應。在1964年，阿拉伯的計畫準備啟動之際，以色列和敘利亞以水利設施納為目標的連串衝突，首度展開。這些衝突終於助長了以色列與阿拉伯國家之間緊張情勢升高，此時埃及在西奈半島展開軍事行動，以色列採取先制攻擊，這就是1967年的「六日戰爭」。¹⁶洛葳(Rebecca Lowe)和西爾維斯特(Emily Silvester)針對全球安全威脅的缺水問題報告中認為，當其他破壞穩定的因素已然存在時，水會引發衝突：「將水資源短缺與政治不穩定相結合，加上資源需求和氣候變化，則衝突的『完美風暴』就會形成。」¹⁷雖然水會助長戰爭，但絕對不是戰爭的唯一原因：「當領土爭端與水資源爭奪重疊時——就像第二次世界大戰之後的世仇案例，水資源通常是一個潛在的驅動力，而不是主因。」¹⁸中東研究水資源匱乏的著名學者洛維(Miriam Lowi)認為，沿著河流各國的地理位置會影響水資源合作，上游國家往往具有明顯優勢，可以不顧下游國家的需要，單方面決定資源的取用。¹⁹

Despite considerable evidence of cooperation over water usage, a number of arguments link water scarcity and armed conflict. While states have not fought exclusively over access to water, increased water scarcity, when combined with other factors such as upstream-downstream positioning, sovereignty linkages, and political instability, may lead to war. These factors provide the foundation for examining the driving factors linking water security to the possibility of war between China and India:

1. China's growing water scarcity.
2. China's future upstream activity.
3. Sino-Indian dispute over Arunachal Pradesh.
4. Increasing political instability in China.

儘管在水資源使用方面有甚多可以相互合作的證據，但是也有一些論點，將水資源短缺與武裝衝突加以串聯。雖然國家之間還沒有完全因為爭奪水資源產生衝突，但由於水資源短缺，加上上、下游關係，牽涉到主權與政治不穩定，就有可能導致戰爭。以下這些因素可為檢驗中、印兩國，未來可能因水資源安全而發生戰爭的基礎。

1. 中國的水資源日益匱乏。
2. 中國未來在河流上游的作為。
3. 中、印於阿魯納恰爾邦(Arunachal Pradesh)的爭端。
4. 中國政治日益不穩定。



Driving Factor #1:

China's Growing Water Scarcity China's Tibetan plateau, nestled in the Himalayas, is the source of Asia's 10 major river systems, including the Yellow, Yangtze, Indus, Sutlej, Brahmaputra, Salween, and Mekong. It is no wonder many refer to Tibet as the "Water Tower of Asia." These rivers traverse 11 countries and support 2 billion people stretching from Afghanistan to India in South Asia, and to Vietnam in Southeast Asia. Due to its upstream position, China enjoys a potential monopoly over the supply of fresh water for most of South and Southeast Asia. In the case of India, both the Indus and Brahmaputra Rivers flow downstream from China into its borders. In fact, China is the source of more transnational water flows than any other upstream power in the world.²⁰

動因一：

中國水資源逐漸短缺的西藏高原，位於亞洲十大主要河流體系源頭的喜馬拉雅山，包括黃河、長江，印度河、薩特萊傑河、雅魯藏布江、薩爾溫江、湄公河。無怪乎很多人將西藏稱為「亞洲水塔」，這些河流流經11個國家，養活遍及南亞的阿富汗到印度，東南亞的越南，共約20億人口。由於中國處於這些河流的上游，有能夠壟斷南亞及東南亞地區的淡水供應之潛力。就印度來說，印度河和雅魯藏布江流域都從中國流入國界。實際上，中國擁有全世界最多跨國河流的上游源頭。²⁰

Consequently, despite the wealth of water in Tibet, China faces an emerging water crisis further aggravated by overuse and pollution. In 2004, China's available water per capita was one of the lowest in the world for a populous country, just one-third of the average for developing countries, one-fourth of the world average, and one-fifth of the US average. This comparison reflects a 23 percent decline in China's available water per capita over the past

20 所有主要河川均發源於喜馬拉雅山脈，其中只有恆河未流經西藏。See Hofstedt, "China's Water Scarcity and its Implications for Domestic and International Stability," 78; Chellaney, *Water, Peace, and War*, 231; Uttam Kumar Sinha, "Examining China's HydroBehavior: Peaceful or Assertive?" *Strategic Analysis* 36, no. 1 (January 2012): 42; Lowe and Silvester, "Water Shortages Threaten Global Security," 45; and Chellaney, *Water, Peace, and War*, 231.

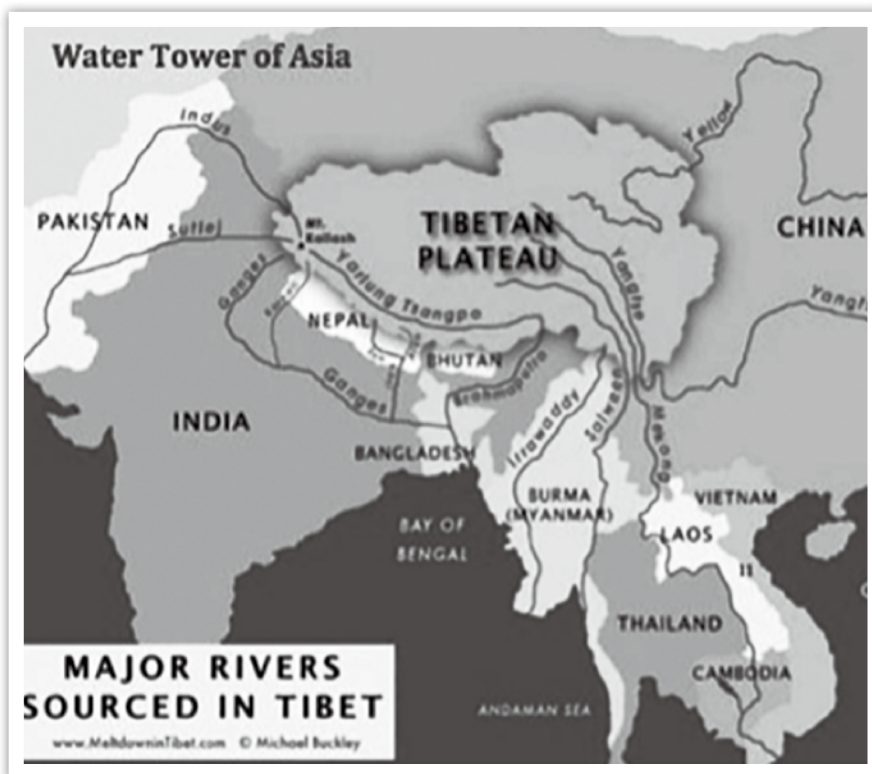
20 years. Meanwhile, the demand for water is growing more than 10 percent annually in Chinese cities-and more than five percent annually for its industries.²²

雖然西藏水資源豐富，但中國由於濫用和污染而面臨水資源惡化的危機。2004年，中國人均可用水是世界人口最少的國家之一，僅為發展中國家平均水準的三分之一，是世界平均水準的四分之一，為美國平均水準的五分之一。這一比較反映出中國過去二十年人均可利用水量下降了23%。同時，城市的水需求量每年增長10%以上，工業年均增長率超過百分之五。²²

這一比較反映出中國過去二十年人均可利用水量下降了23%。同時，城市的水需求量每年增長10%以上，工業年均增長率超過百分之五。²²

This precipitous decline in available water has worsened an already critical shortage in drinking water for China's huge population. More than 25 percent of all Chinese are without access to drinking water. Almost half of China's 668 largest cities are short of water with 108 identified as "serious" and 60 as "critical." By 2030, the Chinese government predicts the country's annual freshwater shortage will reach 200 billion cubic meters.²³

發源於西藏的重要河流圖²¹



21 附圖所示為發源於西藏的河川。Climate Change and Its Impact on our World's Major Rivers - Part 1: The Rivers of Asia, 21st Century Tech, September 4, 2013, <http://www.21stcentech.com/climate-change-impact-major-rivers-asia/> (accessed December 1, 2015).

22 Elizabeth C. Economy, "The Great Leap Backward? The Costs of China's Environmental Crisis," Foreign Affairs Vol. 86, no. 5 (September 2007); Shalizi, "Addressing China's Growing Water Shortages and Associated Social and Environmental Consequences," 4-5; and Kathleen Cannon, "Water as a Source of Conflict and Instability in China," Strategic Analysis 30, no. 2 (April-June 2006): 310.



可用水急劇下降，使得中國龐大人口所需的飲用水更加嚴重匱乏。中國人有25%以上得不到飲用水。668個大城市中有近一半缺水，其中108個被認定為「極嚴重」，60個被認定為「嚴重」。到2030年，中國政府預判全國淡水短缺將達到2,000億立方公尺。²³

China's worsening water shortage is exacerbated by increased pollution on a historic scale. More than 90 percent of China's underground aquifers, which supply 70 percent of the country's drinking water, are polluted. More than half of China's population drinks water contaminated with organic waste. More than 75 percent of surface water flowing along China's rivers is unsafe for drinking or fishing, and 30 percent is unsuitable for agriculture and industry.²⁴

中國日益缺水，更由於極大規模的污染而雪上加霜。供應70%以上飲用水的地下含水層，卻有90%以上受到污染。一半以上人口飲用受到有機廢物污染的水。中國75%以上的河流水質不適合飲用或漁業，30%不適合農業和工業。²⁴

China's water problem has a stark regional dimension as well; the south has the preponderance of water while the north has the higher demand. This has created a significant regional disparity that is getting worse with time. While 45 percent of China's population and 60 percent of its agriculture are in the north, the region has only 13.8 percent of the fresh water. In per capita terms, the amount of available water in the north is about 25 percent of that available in the south.²⁵

中國的水問題也具有十足的區域性；南方水多，北方需求多。隨著時間此一明顯的區域性差異愈來愈大。中國45%的人口和60%的農業在北方，地域的淡水只有13.8%。按人均計算，北方可用水量約為南方25%。²⁵

23 Ibid., 312; Hofstedt, "China's Water Scarcity and its Implications for Domestic and International Stability," 72-73.

24 Cannon, "Water as a Source of Conflict and Instability in China," 313; and Economy, "The Great Leap Backward?"

25 Sebastian Biba, "Desecuritization in China's Behavior Towards Its Transboundary Rivers: The Mekong River, the Brahmaputra River, and the Irtysh and Ili Rivers," *Journal of Contemporary China* 23, no. 85 (2014): 30; and Shalizi, "Addressing China's Growing Water Shortages and Associated Social and Environmental Consequences," 7.

Driving Factor #2:

China's Future Upstream Activity To remedy the great north-south water divide, China started a massive South-North Water Diversion Project to transfer a total of 38 to 48 billion cubic meters of water annually. Officially announced by China's State Council in 2002, the project called for diverting waters along three different routes—an eastern route, a central route, and a western route. The water diversion projects along the first two routes are already completed and are transferring water from China's Yangtze and Han Rivers in the south to the Yellow River in the north. The third route is still under development. It will divert tributaries to the upstream portion of the Yangtze River in western China to the Yellow River. However, in the last 30 years, Chinese scholars and officials have proposed going above and beyond this project by diverting water from the upstream portions of the Mekong, Salween, and Yarlung Tsangpo Rivers that flow from China's Tibet.²⁶

動因二：

中共未來會在河川上游推動所謂「南水北調」計畫，展開每年調水480億立方公尺，以解決南北水資源差距巨大的問題。2002年中共國務院宣布，該計畫要自東部、中部、西部三條水道分水。分水計畫的頭兩條水道已經完成，南邊是長江與漢江，北邊是黃河。第三條水道仍在計畫中，主在引長江上游與黃河之間。不過中共學者及官方經過30年研究，認為更應該考量發源於西藏的湄公河、薩爾溫江，及雅魯藏布江的上游。²⁶

India views this additional diversion plan with great trepidation because it would affect the downstream flow of water into the Brahmaputra River; the Yarlung Tsangpo River becomes the Brahmaputra River once it flows across the Indian border.²⁷ The Brahmaputra River holds special importance for India. First, it accounts for almost 29 percent of all surface water in

26 Hofstedt, "China's Water Scarcity and its Implications for Domestic and International Stability," 74; Kiki Zhao, "Water From China's South-North Transfer Project Flows to Beijing," The New York Times, December 25, 2014, <http://sinosphere.blogs.nytimes.com/2014/12/25/waterfrom-chinas-south-north-transfer-project-flows-to-beijing/>; and Hongzhou Zhang, "Sino-Indian Water Disputes: The Coming Water Wars?" Wiley Interdisciplinary Reviews Water 3 (October 2015): 4.



India's rivers. Second, it encompasses roughly 44 percent of India's total hydropower potential. Of course, China's upstream activities will reduce both the run off and hydropower potential India could expect from the Brahmaputra River. Considering India's population is expected to grow by another 500 million by 2050, it is no surprise water diversion is a serious issue.²⁸

印度對這個額外的方案甚感不安，因為雅魯藏布江流進印度境內稱為布拉馬普特拉河，控制雅魯藏布江就會影響下游布拉馬普特拉河水量。²⁷布拉馬普特拉河對印度特別重要，第一、該河流為水量占全印度表水的29%，其次，該河的水力發電能量占印度44%。當然，中國在其上游的動作勢必降低印度預期可以從雅魯藏布江獲得的流量和水力發電之潛力。到2050年，印度的人口預計成長5億，分流當然是一個嚴重議題。²⁸

Thus far, the Chinese government has not officially approved plans to divert the Yarlung Tsangpo River. However, India remains concerned about China's future intentions. In 1999, China's State Council established a special task force of experts from the Ministry of Water Resources, the Ministry of Land and Resources, the Science Academy, and other agencies, to conduct a major field study of the Grand Western Water Diversion Plan (GWWD). After a 36-day field research trip, the task force published a report in support of the water diversion plans outlined in the GWWD.²⁹ After listening to the report in October 2012, General Zhao Nanqi, deputy chairman of the ninth Chinese People's Political Consultative Conference and a former president of the Military Academy of Sciences, stated, "Even if we do not begin this water diversion project, the next generation will. Sooner or later it will be done."³⁰ In 2005, Li Lang, an officer from China's second artillery corps, published a widely read book which listed various reasons and options for diverting the Yarlung Tsangpo River.³¹

27 布拉馬普特拉河是印度最長的河流，發源於喜馬拉雅山西藏境內的 Chemayungdung 冰河，中國人稱之為雅魯藏布江。河流流經Arunachal Pradesh時稱為Siang River，流入印度阿薩姆平原後稱為 Dihang River，再流35公里與Lohit Rivers合流，自此開始稱之為布拉馬普特拉河。

28 Biba, "Desecuritization in China's Behavior Towards its Transboundary Rivers: The Mekong River, the Brahmaputra River, and the Irtysh and Ili Rivers," 37; and Upali A. Amarasinghe, Tushaar Shah, Hugh Turrall, and B. K. Anand, India's Water Future to 2025-2050: Business-as-Usual Scenario and Deviations, International Water Management Institute - Research Report 123, (Sri Lanka, 2007): 9.

29 Zhang, "Sino-Indian Water Disputes: The Coming Water Wars?" 4-5.

30、31 於下頁。

到目前為止，中共官方尚未正式批准雅魯藏布江調水計畫，不過，印度依然對中共未來之意圖緊張不已。1999年，中共國務院設立了由水利部、國土資源部、科學院等機構專家組成的特別工作組，針對「大西部調水計畫」(GWWD)實施大規模實地研究。經過36天實地考察，工作組出版了支持該計畫的報告書。²⁹ 2012年10月第九屆中國政協副主席，同時也是前中共軍事科學院院長的趙南起上將，聽完報告後表示：「即使我們這一代不啟動此一引水工程，下一代也會。遲早會完成的。」³⁰ 2005年，中國第二砲兵軍官李朗出版了一本流傳甚廣的書，列出從雅魯藏布江調水的各種理由和方案。³¹

Many Chinese experts have refuted the technical feasibility of the Grand Western Water Diversion Plan. In 2000, the minister of water resources told China's state council the project was technically and economically impossible, and his successor echoed these concerns. In 2006, China's Engineering Academy, in consultation with numerous academics and experts, produced a report refuting the findings from the 1999 task force, and asserted the GWWD is "not technically feasible in the foreseeable future, and given the development trajectory of China, it is neither practical nor necessary."³²

許多中國專家駁斥「大西部調水計畫」技術的可行性。2000年，水資源部長告訴中國國務院，這個方案在技術和經濟上是不可行的，他的繼任者也贊同這些關切。2006年，中國工程學院經與眾多學院與專家諮詢，編了一份反駁1999年工作組調查結果的報告，並聲稱「『大西部調水計畫』在可預見的未來，技術上不可行，且從中國的發展軌跡看，既不實際也不必要」。³²

These conflicting indicators have led to an ongoing debate over the true intentions of Chinese water diversion plans for its western route. Meanwhile, China officially announced plans to build a network of up to five massive dams on the Yarlung Tsangpo River for the purpose of generating hydroelectricity-not water diversion. In Fall 2014, it completed

30 Jinshui Cai, "Da xixian' yinggai shang" [Great Western Route Must Be Executed], Kexue juece [Scientific Decision-making], December 16, 2016, cited in Holslag, "Assessing the Sino-Indian Water Dispute," 25.

31 The name of the book is Saving China Through the Water from Tibet [Xizang zhi shui jiu Zhanguo], cited in Holslag, "Assessing the Sino-Indian Water Dispute," 25.

32 Holslag, "Assessing the Sino-Indian Water Dispute," 26; and Zhang, "Sino-Indian Water Disputes," 5.



construction of the Zangmu Dam, the first of these hydropower dams along the Yarlung Tsangpo River. Many in India believe these hydropower dams are the first step in the process to construct the additional infrastructure needed to divert water in accordance with the GWWD.³³

這些相互矛盾的指標導致中國西線引水計畫的真意，風波不斷。此期間，中國正式宣布計畫在雅魯藏布江建設5座大型水壩網絡係用來發電，而不是調水。2014年秋季，完成了雅魯藏布江首座「藏木水壩」(Zangmu Dam)。印度許多人認為，這些水力發電大壩是「大西部調水計畫」附加基礎設施進行的第一步。³³

While it does not appear likely China will go through with its water diversion plan due to cost and engineering difficulties, there is growing concern Beijing will change course if its current water-diversion plans do not resolve its growing water-scarcity problem. Should China proceed, it would increase tensions with India. This dynamic is all the more worrisome when one examines the linkage between the Brahmaputra River and national sovereignty.

由於成本和工程難度，中國未來似乎不會貫徹其調水計畫，但如果目前的調水計畫未能解決日益嚴重的缺水問題，將愈來愈擔心北京會有所改變。如果中國啟動計畫，與印度的緊張關係必然增加。當人們檢驗雅魯藏布江與國家主權之間的關係時，這種動向就更加令人擔憂。

Driving Factor #3 : Sino-Indian Dispute over Arunachal Pradesh

The area in which China's Yarlung Tsangpo River becomes India's Brahmaputra River is called the Arunachal Pradesh. Both China and India claim this region. This territorial dispute is all the more sensitive because it is linked to the sovereignty of both countries. China cannot

33 認為中國最終仍會從布拉馬普特拉河上游引水的論點，在印度媒體大量傳播。兩造觀點可從下列資料檢視：Jonathan Holslag, "Assessing the Sino-Indian Water Dispute," Hongzhou Zhang, "Sino-Indian Water Disputes;" and "South Asia's Water: Unquenchable Thirst," *The Economist*, November 19, 2011; Lowe and Silvester, "Water Shortages Threaten Global Security," 45; Ananth Krishnan, "China Puts First Brahmaputra Dam into Operation," *India Today*, November 23, 2014, <http://indiatoday.intoday.in/story/brahmaputra-dam-india-vs-china-zangmuyarlung-tsangpo-zangbo-hydropower-project/1/403379.html>; and Ramachandran, "Water Wars."

give up its claim without simultaneously weakening its claim of sovereignty over Tibet, which it took by force in 1950. For India, the Arunachal Pradesh is the site of a humiliating defeat by the Chinese in 1962.

動因三：中印對阿魯納恰爾邦之主權爭議

中國的雅魯藏布江開始變成印度布拉馬普特拉河的區域，稱之為阿魯納恰爾邦 (Arunachal Pradesh)，中、印雙方都宣稱擁有該區域。由於鄰接兩國，其主權爭議更為敏感。中共不可能放棄對該區域的主權宣示，因為會弱化1950年以武力奪取西藏的主權宣示。對印度而言，阿魯納恰爾邦則是1962年被中國人擊敗的恥辱所在。

From China's perspective, political control over Tibet is a matter of sovereignty, territorial integrity, and security. The Chinese Communist Party (CCP) claims China's sovereignty over Tibet traces back 700 years to the Yuan (Manchu) Dynasty.³⁴ Furthermore, the CCP perceives its sovereignty over Tibet as an essential part of restoring China's national pride and security. After the fall of the Qing Dynasty in 1911, Great Britain exploited China's weakened condition by recognizing Tibet as an independent state and negotiating new borders. Shortly after the Qing Dynasty fell, the government of India, which was still a colony of Great Britain at the time, hosted a meeting between its representatives and those from Great Britain and Tibet in Simla, India. There, they drew up the borders of a newly independent Tibet in the Simla Accord of 1914.³⁵

對中共而言，西藏之政治掌控事關主權、領土統一、安全。中國共產黨宣稱中國對西藏主權之擁有，可追溯至700年前元朝(滿族)(譯註：原文有誤)。³⁴況且中共將西藏主權視為恢復國家驕傲及安全的一部分。1911年滿清覆滅後，大英帝國趁中國羸弱之際承認西藏為一個獨立國家，並據以談判新疆界。當時仍屬英國殖民地的印度作東，在印度西姆拉(Simla)讓英國、西藏代表舉行談判，並在1914年的「西姆拉協議」中劃出新獨立

34 Sperling, Elliot. "Tibet and China: The Interpretation of History Since 1950," China Perspectives 2009, no. 3 (September 2009): 26.

35 Ramachandra Guha, "The Dalai Lama's War," The National Interest 115 (September/October 2011): 47; and Sikri, "The Tibet Factor in India-China Relations," 59; and Sikri, "The Tibet Factor in India-China Relations," 60.



西藏的疆界。³⁵

This agreement created two sets of borders between India and Tibet, one on either side of Nepal. The western border, known as the Johnson Line, divided Kashmir from Tibet, and the eastern border, called the McMahon Line, divided Arunachal Pradesh from Tibet. Both lines were named after British diplomats.³⁶ China refused to acknowledge the agreement because it claimed Tibet was still part of China at the time and did not have the authority to make international agreements.³⁷ In fact, the Chinese leadership determined recognition of the Simla Accord, and its McMahon Line, would imply Tibet was an independent state with treaty-making powers. This status would undermine the legitimacy of China's centuries-long claim of sovereignty over Tibet.³⁸

該協議在印度與西藏之間創立了兩組邊界，分別在尼泊爾兩側，西線稱為「江森線」，將西藏與喀什米爾分開；東線稱為「麥克馬洪線」，分隔西藏與阿魯納恰爾邦。兩條線都以英國外交官為名。³⁶中國當然不承認，因為西藏仍為中國的一部分，沒有權力對外談判。³⁷若中國承認「西姆拉協議」及「麥克馬洪線」，等於承認西藏為一擁有對外談判條約權力的獨立國家，當然也破壞中共數世紀以來宣稱對西藏主權的合法性。³⁸

In this manner, the Arunachal territorial dispute became linked to a core issue-China's claim of sovereignty over Tibet. Once China invaded and occupied Tibet in 1950, both the Johnson Line and the McMahon Line became contested borders between India and China.

於是阿魯納恰爾邦領土爭議，與西藏主權產生連結。1950年當中共派軍入藏後，「江森線」與「麥克馬洪線」就變成中、印之間的爭議疆界。

The Arunachal Pradesh is also the scene of the 1962 Sino-Indian War during which China

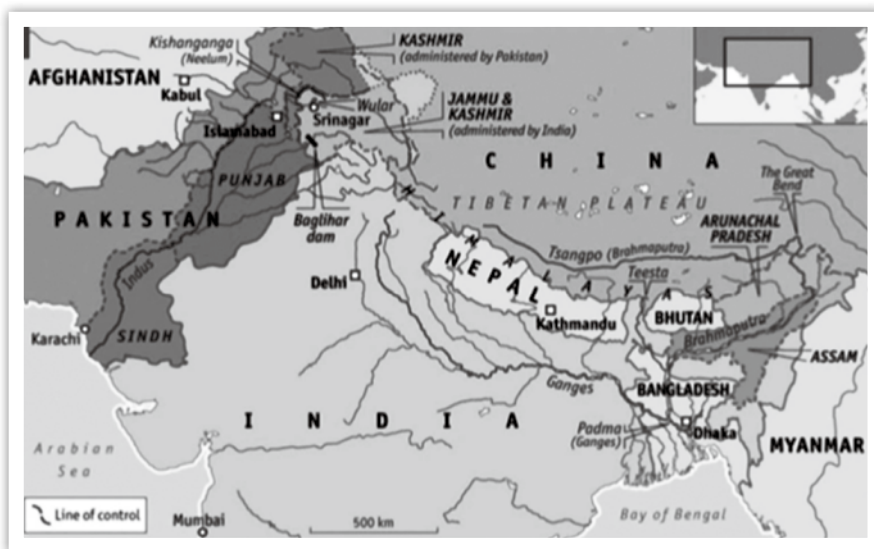
36 Bruce Riedel, "JFK's Overshadowed Crisis," *The National Interest* 120 (July 2012): 55.

37 實際上，在國共內戰時期，國共雙方均宣布西藏為中國的一部分。請參閱：Michael Clarke, "Ethnic Separatism in the People's Republic of China: History, Causes and Contemporary Challenges," *European Journal of East Asian Studies* 12, no. 1 (2013): 112.

38 Sikri, "The Tibet Factor in India-China Relations," 60.

wrested more than 20,000 square kilometers of territory from India and inflicted heavy casualties.⁴⁰ Since then, the dispute over the Arunachal Pradesh remains a point of contention in Sino-Indian relations and serves as a potential trigger for renewed military conflict despite a period of warming relations and increased trade between the two countries.⁴¹

中印邊界之阿魯納恰爾邦³⁹



阿魯納恰爾邦是1962年中、印之戰的戰場，中共從印度手中奪取了20,000餘平方公里土地，但使印度蒙受慘重傷亡。⁴⁰阿魯納恰爾邦之爭議從此成為兩國關係重啟軍事衝突的扳機，雙方關係增溫或貿易增加時亦然。⁴¹

Even before President Hu's historic visit to India in 2006, the Chinese ambassador to India made a statement on an Indian news channel asserting Beijing's claim to the entire Arunachal Pradesh area, casting a shadow over Hu's visit.⁴² To further emphasize this point, China refused to give a visa to a visiting Indian official from Arunachal Pradesh on the grounds that, as the

39 South Asia's Water Unquenchable Thirst."

40 印度政府承認傷亡超過7,000人，其中陣亡1,383人，失蹤1,696人，被俘3,968人。請參閱：Gyanesh Kudaisya, "Beyond the 'Himalayan Pearl Harbor'," *History Today* 62, no. 11 (Nov 2012): 3.

41 中、印雙方在1980代進入「低盪」狀態。2003年雙方簽訂《雙方關係與廣泛合作原則》，2005年簽訂《中、印雙邊和平繁榮戰略合作夥伴》。但是阿魯納恰爾邦領土爭議部分並未解決。請參閱：Sikri, "The Tibet Factor in India-China Relations;" and Sujit Dutta, "Revisiting China's Territorial Claims on Arunachal," *Strategic Analysis* 32, no. 4 (July 2008).

42 Jing-Dong Yuan, "The Dragon and the Elephant: Chinese-Indian Relations in the 21st Century," *The Washington Quarterly* 30, no. 3 (Summer 2007): 138. Also in 2007, the Chinese Foreign Minister Yang Jieshi reiterated the PRC's claim on Arunachal Pradesh during his talks with the Indian External Affairs Minister Pranab at the sidelines of the G-8+5 meeting in Germany, see Dutta, "Revisiting China's Territorial Claims on Arunachal," 556.



region was a part of China, the official did not need a visa.⁴³ In 2009, China refused to endorse an Asian Development Bank project in Arunachal Pradesh on the grounds that the area for the project was in China.⁴⁴

即使在2006年胡錦濤歷史性的訪印之旅前，中共駐印大使在印度新聞頻道宣稱中國擁有阿魯納恰爾邦全部，為胡的訪問蒙上陰影。⁴²且為進一步強調這項堅持，中國拒絕發給阿魯納恰爾邦當地印度官員訪中簽證，因為該地屬於中國領土，不需要簽證。⁴³2009年中共基於該地為中國境內為由，拒絕在亞洲開發銀行為阿魯納恰爾邦提出方案背書。⁴⁴

Meanwhile, India continues a steady military build-up in and around the Arunachal Pradesh. In 2008, when Indian Prime Minister Manmohan Singh visited the province, he announced a major infrastructure development package, and appointed a retired army chief of staff to the post of governor. In 2009, India deployed an additional 60,000 soldiers to Assam, near Arunachal Pradesh, bringing the total number of troops in the area to 100,000. It also built three new airfields in the Himalayan foothills. In 2014, India announced plans to build 54 border posts in Arunachal Pradesh. Meanwhile, China has heavily invested in improving its military infrastructure in Tibet, establishing "five fully operational air bases, several helipads, an extensive rail network, and 36,000 miles of roads-giving them the ability to rapidly deploy 30 divisions (approximately 15,000 soldiers each) along the border, a 3-to-1 advantage over India."⁴⁵

在此同時，印度則在阿魯納恰爾邦持續增強軍力。2008年，印度總理辛格 (Manmohan Singh) 訪問該省，宣布一套重大基礎建設方案，並任命一位退休陸軍參謀長擔任省長。2009年，印度在阿魯納恰爾邦旁邊的阿薩姆省增兵60,000人，使得整個地區兵力達100,000人，同時在喜馬拉雅山麓新建3座機場。2014年，宣布要在阿魯納恰爾邦增建54座邊境哨所。中方也在西藏投下大資本強化軍事建設，包括5座已可運作的機

43 Sikri, "The Tibet Factor in India-China Relations," 64; and Kerry Bolton, "Water Wars: Rivalry Over Water Resources," *World Affairs* 14, no. 1 (Spring 2010): 56.

44 Sanjeev Miglani, "India, China Take a Measure of Each Other at Border Row Talks," *Reuters*, August 5, 2009, <http://blogs.reuters.com/india/2009/08/05/india-china-take-a-measure-of-each-other-at-border-row-talks/>.

45 於下頁。

場、若干直升機停機坪、延伸鐵道網絡，及36,000哩的公路網，使得中共可以迅速向邊境調動30個師(每師兵力約15,000人)，使得中方對印度兵力有3：1的優勢。⁴⁵

In addition to the military build up on both sides of the border, incursions into disputed areas are common. The Indian government reported, from 2012-2015, Chinese soldiers conducted 600 incursions into disputed areas along the India-China border.⁴⁶ In recent years, the Chinese-Indian border has become an increasingly dangerous hotspot, the net result of this military build up, aggressive patrolling, and border incursions.

由於雙方沿邊境之兵力增長，經常發生侵入邊境事件。印度宣布2012～2015年間，中方士兵侵入邊境事件達600次之多。⁴⁶近年來中、印邊境雙方軍力增加，具積極的巡邏及入侵邊境，逐漸成為危險的熱點。

Driving Factor #4: Increasing Political Instability in China

China is facing growing domestic political instability due to an economic slowdown and rising popular nationalism, making it increasingly difficult for the CCP to pursue national interests objectively in a non-confrontational manner, especially with issues linked to national sovereignty and quality of life. In the case of water scarcity, and especially with the case of the Brahmaputra River, both of these dimensions are present. As water scarcity in China grows, the CCP will find it harder to ignore the cries for more-drastic solutions, such as diverting the Brahmaputra River and other transnational rivers, to alleviate the suffering of its people. And, because the Brahmaputra River flows through a disputed area, the CCP's ability to make

45 Dutta, "Revisiting China's Territorial Claims on Arunachal," 572; Selina Ho, "River Politics: China's Policies in the Mekong and the Brahmaputra in Comparative Perspective," *Journal of Contemporary China* 23, no. 85 (2014): 14; Bolton, "Water Wars," 61; Ben Blanchard, "China Expresses Concern about Indian Plan to Build Border Posts," *Reuters*, October 30, 2014, <http://www.reuters.com/article/2014/10/30/us-china-india-idUSKBN0IJ14G20141030>; and Mohan Malik, "'Victory Without Bloodshed': China's India Strategy," *The Diplomat*, August 20, 2013.

46 Ibid. The Indian government routinely tracks and reports incursions by Chinese military patrols into various disputed areas India administers and which China claims. This number covers all of these areas, not just Arunachal Pradesh.



decisions in a collaborative manner with its neighbors will become even more important.

動因四：中共政治逐漸不穩定

中共面對因為經濟成長趨緩及民族意識高漲，特別對主權與生活品質攸關的問題，很難以非對抗方式客觀地追求國家利益。以水資源匱乏的案子，尤其是布拉馬普特拉河案為例，全都觸及上述問題。當中國水資源匱乏狀況加劇到中共必須找尋更激進的方案來解決問題時，就很難避免從其他跨國河川調水，而流經爭議區域，中共能否與其鄰國以合作方式做這件事變得異常重要。

China's Slowing Economy

Ever since the economic reforms ushered in by Deng Xiaoping in the 1980s, the CCP has focused on promoting economic growth to build its national power and to maintain its legitimacy as China's ruling political party. This concentration resulted in tremendous economic growth and rising living standards, but it also increased the income gap between rich and poor, the expectations by the Chinese people for better services, and environmental degradation.⁴⁷

中共經濟趨緩

自1980年代鄧小平進行經濟改革以來，中共加強經濟成長來使國力增長，同時保持共產黨執政的合法性。在一心一意經濟成長與生活水準提升的成果下，卻也加大了貧富差距，人民對服務品質的要求，以及環境惡化的關切。⁴⁷

But now, China's gross domestic product growth is slowing, and an increasing number of analysts are worried China will enter a prolonged period of slower growth-or an outright recession. This result would severely test the CCP's ability to deal with environmental issues, such as water scarcity, increased social unrest, and rising popular nationalism. A major contributing factor to China's declining economy is the tremendous growth of non-government

47 Randall Peerenboom, "China and the Middle-Income Trap: Toward a Post Washington, Post Beijing Consensus," *Pacific Review* 27, no. 5 (2014): 663.

debt and overcapacity China has accumulated since the 2008 Global Financial Crisis.

但是現在中共的GDP成長趨緩，愈來愈多的分析師擔憂這種成長趨緩會是一種長期性問題，甚至會導致經濟衰退，其結果將會嚴厲測試中共處理諸如水資源匱乏，社會日益不安，以及民族主義高漲等環境問題的能力。從2008年全球經濟危機以來，中共經濟成長趨緩主因係非政府債務遽增，以及產能過剩所致。

In response to the 2008 crisis, the Chinese government announced a major fiscal stimulus package and adopted measures to relax monetary policy.⁴⁸ A main component of this effort was to encourage local governments to increase funding for infrastructure and public works projects.⁴⁹ In order to raise these funds, local governments looked to the commercial sector to fund public projects by establishing Local Government Financing Platforms, which are treated as municipal State Owned Enterprises under Chinese law.⁵⁰

為因應2008年危機，中國政府推出一套重大的刺激財政方案，並且將金融政策鬆綁。⁴⁸主要在鼓勵地方政府增加基礎建設及公共投資預算。⁴⁹為增加資金挹注，地方政府成立財政平台，並給予比照國營企業的待遇來吸引商界投資。⁵⁰

Local Government Financing Platforms focus primarily on publicwelfare projects such as affordable- housing construction, infrastructure development, social services, and environmental protection. To finance these projects, local governments provide Local Government Financing Platforms with capital through the direct transfer of government revenue, land-use rights, or other real-property assets such as roads and bridges.⁵¹ Local Government Financing Platforms then use this capital as collateral to obtain the financing

48 Yinqiu Lu and Tao Sun, "Local Government Financing Platforms in China: A Fortune or Misfortune?" International Monetary Fund Working Paper, 13/243 (October 2013): 8.

49 Chaoying Qi, James Juniper, and James Xiaohe Zhang, "'Minsky Moment' and Financial Fragility: The Case of China," *The Journal of Developing Areas* 49, no. 6 (April 2015): 286; and Gang Fan and Yan Lv, "Fiscal Prudence and Growth Sustainability: An Analysis of China's Public Debts," *Asian Economic Policy Review* 7, no. 2 (December 2012): 207-208.

50 Fan and Lv, "Fiscal Prudence and Growth Sustainability," 203.

51 Lu and Son, "Local Government Financing Platforms in China," 4.



they need from Chinese banks to finance the projects the local governments want them to execute.

地方政府財政平台主要放在公共福利相關計畫，如平價住宅、基礎建設發展、社會服務、環保等。為籌措計畫所需之財力，地方政府給予地方財政平台以歲入、土地使用權及道路、橋梁等地產來提供資金。⁵¹地方政府則運用此一平台從中國銀行募集的資本，執行預劃的工作。

This relationship between local government, Local Government Financing Platforms, and state-owned banks has produced far more capacity than is demanded by foreign and domestic markets in housing, steel, cement, construction, iron, and other goods. More than one in five homes in China's urban areas are vacant. At the macro level, China's real estate activity is as much as 20 percent of the gross domestic product. To put this in perspective, at the height of the US real-estate market prior to the 2008 crisis, real estate was six percent of the US gross domestic product. As an indicator of over-investment in construction projects, China used more cement in 2011-2013 than the United States did in the entire 20th century.⁵²

地方政府、財政平台、國營銀行三者結合，生產出遠超過國內、外市場所需的住房、鋼鐵、建築、鐵及其他產品。建於郊區的住房約有1/5空置，宏觀的水準而言全國地產已經占國內生產毛額(GDP)的20%，說得更明白一點，2008年以前，美國房地產最旺的年代也僅占GDP的6%。中共2011~2013年的水泥用量，超過全美20世紀的使用量，即為中共對營造業過度投資的指標。⁵²

Not surprisingly, this rising overcapacity has coincided with extraordinary growth in China's commercial debt-to-GDP ratio which, in 2015, exceeded 200 percent of the gross domestic product, almost double the 125 percent reported in 2008.⁵³ When coupled with government debt, China's total debt-to-GDP ratio approached 300 percent, according to a 2015

52 Vague, "The Coming China Crisis," 17; and Ibid., 21.

53 Ye Xie, "China's Debt-to-GDP Ratio Just Climbed to a Record High," Bloomberg Business News, July 15, 2015, <http://www.bloomberg.com/news/articles/2015-07-15/china-s-debt-to-gdp-ratio-just-climbed-to-a-new-record-high>.

report by McKinsey Consulting.⁵⁴ Small wonder that on March 3, 2016, Moody's downgraded its outlook on Chinese debt from "stable" to "negative."⁵⁵

產能過剩造成商業債務與GDP的比例大增，2015年大於200%，幾乎是2008年125%的兩倍。⁵³根據麥卡錫諮詢公司2015年報告，加上政府公債，中共整體債務接近GDP的3倍。⁵⁴2016年3月3日，穆迪信評將中國債信從「穩定」降到「負面」。⁵⁵

This over-capacity and debt has slowed China's GDP growth rate. Its nominal GDP growth rate declined from more than 15 percent in 2011 to around seven percent in 2014, but many analysts believe the actual figure was closer to four percent.⁵⁶ This slowdown is problematic in terms of political stability due to the growing income gap in China, an uncomfortable irony for a party whose originating ideology was based on communism. Between 2008 and 2010, the Chinese government dealt with more than 90,000 protests annually.⁵⁷ As the economy continues to slow and social unrest rises, the government will need to resort to nationalism to maintain political stability. This action, however, will entail its own risks, especially in the realm of foreign policy.

產能過剩與債務拖緩了中國GDP成長，從2011年的15%降到2014年的7%，而且很多分析師更認為實際數據應接近4%。⁵⁶經濟趨緩影響到政治穩定，因為加大貧富差距完全違反共產主義意識形態。2008～2010年，政府每年處理90,000件抗議事件。⁵⁷當經濟持續放緩，社會動盪隨之增加，政府就必須以民族主義來維持政治穩定，如此政府面對的風險，尤其外交政策方面因而增加。

Rising Popular Nationalism in China

54 Richard Dobbs, Susan Lund, Jonathan Woetzel, and Mina Mutafchieva, "Debt and (Not Much) Deleveraging," McKinsey Global Institute Report (February 2015): vi.

55 "Moody's Cuts China Outlook on Eve of NPC, Cites Reform, Fiscal Risks," Reuters, March 3, 2016, <http://in.mobile.reuters.com/article/idINKCN0W408K?irpc=932>.

56 Vague, "The Coming China Crisis," 22; and Qi, Juniper, and Zhang, "Minsky Moment," 279.

57 Elizabeth C. Economy, "Roots of Protest and the Party Response in China," Testimony before US-China Economic and Security Review Committee, First Session, 112th Congress, February 25, 2011.



Ever since the capitalist reforms under Deng Xiaoping, the CCP has based its legitimacy on economic growth and nationalist ideology. In fact, up until the mid-1990s, the party was able to "decide the direction, content, and intensity of Chinese nationalism, and then to mobilize the people...[it] could appeal to nationalism whenever it so wished, and dismiss it whenever it needed to shift its policy."⁵⁸

民間民族主義高漲

從鄧小平實施經濟改革以來，中國共產黨依靠經濟成長及國家意識形態來維持其合法性。事實上，直到1990年代中期，黨都能夠「決定中國民族主義的方向、內容和強度，然後動員人民……只要願意，都可以訴之於民族主義，而一旦政策必須轉向，也可以隨時取消。」⁵⁸

A slowing economy and rising popular nationalism are impacting a leadership that is more exposed to public opinion than ever before, and constraining the ability of China's political elites to coolly pursue China's national interests. The CCP originally supported this rising wave of popular nationalism in the 1990s, when a series of incidents contributed to the perception the West (with Japan included) harbored ill intentions toward China: the selling of advanced fighter planes to Taiwan; the search of a Chinese cargo ship; opposition to China's bid to host the 2000 Olympics; the accidental bombing of a Chinese embassy in Kosovo; and Japanese claims on the Diaoyu Islands, denouncing China in the name of human rights, and the deployment of aircraft carriers in the vicinity of the Taiwan Strait.⁵⁹

經濟成長的放緩，民間民族主義的高漲，使得領導階層必須面對民意，也限縮了政治菁英冷靜追求國家利益的空間。1990年代發生的一連串民族主義事件，如將先進的戰機軍售台灣、搜索中國貨輪、反對中國主辦2000年奧運會、誤炸中國駐科索沃大使館、日本對釣魚台主權宣示、譴責中國人權並在臺灣海峽部署航母等，造成人民認為西方國

58 Zemin Chen, "Nationalism, Internationalism, and Chinese Foreign Policy," *Journal of Contemporary China* 14, no. 42 (February 2005): 50.

59 Peter Hays Gries, "Chinese Nationalism: Challenging the State?" *Current History* (September 2005): 252; and Chen, "Nationalism, Internationalism, and Chinese Foreign Policy," 50.

家(含日本)處處針對中國的印象。這個時期中共基本上支持民族主義的。⁵⁹

In the past, when rising popular nationalism threatened national interests, Chinese leaders applied pragmatic controls, at times constraining or promoting depending on the national and political interests at stake. For example, at the height of the 2005 anti-Japanese demonstrations, the Chinese government took measures to halt them because the growing size and publicity of the protests influenced the government's foreign policy interest in maintaining productive relations with Japan.⁶⁰ In the words of a prominent Chinese scholar, "Talking tough but acting in a calculated manner helped Chinese leaders prevent the rise of popular nationalism from damaging China's relations with the United States and Japan." The CCP also took steps to halt anti-US demonstrations after the 1999 accidental bombing of the Chinese embassy in Kosovo, as well as the 2001 mid-air collision between a US EP-3 and a Chinese jet fighter in the South China Sea.⁶¹

以往當民族主義威脅到國家利益，中國領導人會務實地加以管控，無論是採取限縮或鼓動，無不以國家及政治利益做考量。例如，在2005年反日示威的高峰期，中國政府採取限縮措施，因為抗議活動的規模和宣傳，影響了與日本保持建設性的外交政策利益。⁶⁰ 中國一位著名學者說：「說得很強硬，做得有分寸，使得民間民族主義不至於傷害到與美、日的關係。」中共在1999年駐科索沃大使館意外遭受轟炸，以及2001年美軍EP-3與中共戰機空中碰撞事件，發生後基本上壓抑反美示威活動。⁶¹

China's ability to exert this pragmatic control of popular nationalism has declined since the 2008 global financial crisis and the slowdown of China's economy. As Chinese elites lose the ability to leverage economic growth to maintain legitimacy, they will become more unwilling, or even unable, to control popular nationalism. China's current president and party leader, Xi

60 Shuisheng Zhao, "Foreign Policy Implications of Chinese Nationalism Revisited: The Strident Turn," *Journal of Contemporary China* 22, no. 82 (2013): 540.

61 Ibid., 542; and Ibid., 540. Actions by the CCP to tamp down Chinese protests concerning Japanese claims over the Diaoyu Islands are another example of the central government's ability to constrain nationalism when needed. See also Phillip C. Saunders and Erica S. Downs, "Legitimacy and the Limits of Nationalism: China and the Diaoyu Islands," *International Security* 23, no. 3 (Winter, 1998-1999): 139.



Jinping, is particularly exposed to nationalist opinion because of the way he has consolidated power. Prior to assuming office as president in 2012, he witnessed the "collective presidency" which distributed power across the CCP Standing Committee and constrained then-President Hu Jintao's influence so completely he was nicknamed the "woman with bound feet." To reverse this, Xi surrounded himself with "a shadow cabinet that was defined less by a single ideology than by school ties and political reliability."⁶²

2008年發生全球金融危機及中國經濟放緩以後，對民族主義務實管控的能力下降。當中國的菁英階層失去了運用經濟成長以維持的合法性，變得更加不願意，甚至沒有能力去管控民族主義。中國現任主席兼黨的領導人習近平相當仰賴民族主義者的意見，因為這是他的權力鞏固的來源。2012年就任前，他目睹中共政治局常委的所謂「集體領導」，如何分散並限縮當時的主席胡錦濤的影響力，甚至胡被諺稱為「裹小腳的女人」。為了扭轉此一現象，在習周圍的是「一個系出同校且政治可靠，意識形態考量較少的影子內閣。」⁶²

Xi has limited collective leadership and marginalized traditional institutions of governance, and he relies on a small group of advisors who are more loyal than experienced. The National Security Commission, for example, is led by two figures loyal to Xi, but who have little foreign policy experience. And with regard to foreign policy decision-making, Xi has reduced the roles of the State Council, the Foreign Ministry, and the military.⁶³ He has consolidated so much power, he is personally at the center of every major policy decision, and is arguably China's most authoritarian leader since Mao.⁶⁴

習限縮集體領導，並讓傳統的統治機構邊緣化，而依賴由忠誠度高於經驗的領導小組顧問。例如國家安全委員會由兩位對習忠誠，卻鮮少外交經驗的人領導。對外交決策而言，習降低了國務院外交部與軍方的角色。⁶³他已然鞏固其權力，所有重大決策唯我獨尊，已是毛澤東以後備受爭議的專權者。⁶⁴

62 Evan Osnos, "Born Red," *The New Yorker* (April 6, 2015).

63 Robert D. Blackwill and Kurt M. Campbell, "Xi Jinping on the Global Stage: Chinese Foreign Policy Under a Powerful But Exposed Leader," *Council on Foreign Relations Special Report* 74 (February 2016): 6.

64 Evan Osnos, "Born Red."

Because Xi established such clear dominance in the national decision-making process, it has left him with near-total responsibility for the government's economic policies. As these policies continue to prove ineffective in reversing China's declining economic growth, Xi becomes more exposed to popular nationalism as he will have to "address countless domestic challenges for which he is now explicitly accountable," and a major misstep on any of them could be costly to his political popularity and position.⁶⁵

由於習明確主導了國家決策程序，使得他也必須為經濟政策負全責。當這些政策被證明無力扭轉經濟成長的持續放緩現象，習就必須依賴民族主義來「處理國內無數他必須負責的挑戰」，一旦失著，就會失去政治人氣與地位。⁶⁵

As Xi and his small group of policymaking elites continue to grapple with declining economic growth and rising social unrest, concerns over political instability will become a driving factor for foreign policy. "For this reason, Xi will most probably stimulate and intensify Chinese nationalism-long a pillar of the state's legitimacy-to compensate for the political harm of a slower economy, to distract the public, to halt rivals who might use nationalist criticisms against him, and to burnish his own image."⁶⁶ This is evidenced by his development of an image as an assertive strongman, not unlike that of President Putin to whom Xi reportedly said in 2013, "We are similar in character."⁶⁷

當習近平與其決策菁英小組繼續忙著處理經濟成長下滑與社會動盪，政治上不穩定的憂慮勢將成為外交政策的驅動因素。「因此，習近平極可能刺激長久以來是國家合法性支柱的民族主義，以補償經濟放緩的政治壓力，轉移大眾注意，壓制以民族主義批評抹黑自己的對手。」⁶⁶他塑造強人形象即為明證，據稱2013年習曾對普丁說：「我們的個性一樣。」⁶⁷

As water scarcity continues to grow in China due to over-consumption, climate change, and pollution, rising popular nationalism will pressure the CCP to seek drastic solutions. Water

65 Blackwill and Campbell, "Xi Jinping on the Global Stage," 10.

66 Ibid., 4.

67 Evan Osnos, "Born Red."



diversion of rivers originating in Tibet will become more attractive to the detriment of China's relations with its downstream neighbors.

當中國因為過度消費、氣候異常、汙染，使得水匱乏的現象繼續，高漲的民族主義勢必壓迫中共尋找激進的解決方案。從發源於西藏的各河川調水的吸引力，遠大於與下游鄰邦關係的惡化。

Conclusion

This article examined a diverse set of factors when assessing the relationship between water insecurity and war. It is not enough to focus purely on the dynamics of how water is shared, how water scarcity is growing, or how the overall natural environment is deteriorating. War, as a human and a political endeavor, is a more complex matter.

結 論

本文依據各種因素評估中、印雙邊因水而戰的可能性，當然純就水資源如何分享，水資源匱乏如何日益加劇，或整體自然環境如何被破壞的角度做評析，顯然並不充分，因為戰爭的發生和人性與政治有關，遠較水這一因素複雜。

Consequently, water scarcity, by itself, will most likely not lead to war. However, water insecurity when coupled with other factors, such as increasing water scarcity at the source of transnational rivers, threatening behavior by the upstream state, overlapping linkages between water insecurity and national sovereignty, and decreasing political stability in the upstream state, will increase the likelihood of war. In the case of China and India, all these conditions exist.

分析結果，似乎單純從水資源角度看，尚不至於走向戰爭，但是當與其他諸如經由調水造成河川上游水量遽減、位於河川上游國家的威脅性行為、水資源的不安全感與國家主權相互作用，以及上游國家的政治不穩定等因素攪和在一起時，就極可能產生戰爭。以目前中、印為例，上述因素是存在的。

So why should the Department of Defense care? It should care because history has shown

the United States could be drawn into a war between these two powers. On November 19, 1962, when the SinoIndian War was at its worst point for India, Prime Minister Nehru wrote two letters to President Kennedy describing India's situation as desperate and requesting comprehensive military aid. He specifically asked for a minimum of 12 squadrons of supersonic fighters, radar support, and US Air Force personnel to man them.⁶⁸ Although the United States did not provide direct air support to India, probably having to do with the timing of the request being on the heels of the Cuban Missile Crisis, it did send C-130s, laden with military equipment and ammunition, and dispatch the USS Enterprise to a nearby location.⁶⁹

國防部何以要關注此一情勢？因為從歷史看，這兩大強權相爭，美國勢必被拉進來。1962年11月19日，中印戰爭爆發後，在印度最不利的狀況下，當時的印度總理尼赫魯寫了兩封信給甘迺迪總統，力陳狀況的無助，急需美國全面軍援，特別要求美國能至少派遣12個中隊的超音速戰機及雷達設施，加上各項裝備操作人員。⁶⁸雖然當時可能因古巴飛彈危機，美國並未直接答應支援，卻也派出C-130軍機運載裝備及彈藥，同時派遣企業號航母巡弋鄰近海域。⁶⁹

The Department of Defense should also recognize Tibet's impact to regional security as it becomes the strategic high ground of Asia for fresh water due to increasing glacier melt; growing water consumption in China, South Asia, and Southeast Asia; and increasing pressure for China to divert water away from its downstream neighbors. While this article covered these issues with regard to China and India, the same lessons learned can apply to countries in Southeast Asia.

國防部更應了解西藏已經成為這個區域的戰略高地，因為冰川加速融解，中國、東南亞、南亞的用水消耗量大增，而西藏為亞洲淡水主要來源，中國必須從這些河川調水而對下游鄰邦產生影響。雖然本文將重點放在中國與印度，實際上同樣的情況，也適用於東南亞其他國家。

As water becomes increasingly sought after among states in that region, and even

68 Kudaisya, "Beyond the 'Himalayan Pearl Harbor'," 4.

69 Riedel, "JFK's Overshadowed Crisis," 56.



around the globe, it is time for the United States and the Department of Defense to elevate environmental security issues to a level on par with national security interests such as countering WMD proliferation and preventing attacks on the homeland. It is increasingly important to promote confidence-building measures between certain states to ensure military missteps do not aggravate territorial sovereignty issues like the one over the Arunachal Pradesh. Finally, it is time for the Department of Defense to invest in more water purification/treatment capabilities so it is not focused only on sustaining the health of US and coalition forces, but also on mitigating water shortage crises.

當水資源被區域內各國，甚至全球所關注，美國國防部將對環境產生的不安全問題，提高到與大規模殺傷性武器及國土防衛同等位階看待，或正其時也。建立某些國家之間相互信任措施，是避免領土主權問題激化所必須，就如當年發生在阿魯納恰爾邦的狀況一樣。最後，國防部應該加強水資源淨化/處理能量，如此不但維持美軍及聯盟軍飲水健康，也可以減輕水資源匱乏的危機發生。

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