



VOLUME 21 • ISSUE 11 • JUNE 7, 2021

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**Chinese Leaders Project Confidence in Self-Sufficiency  
Amid Post-Pandemic Food Security Concerns**

*By Elizabeth Chen*

The Chinese agronomist and "Father of Hybrid Rice" Yuan Longping (袁隆平) passed away on May 22. Chinese President Xi Jinping sent his condolences to Yuan's family, and the state news agency Xinhua ran a rare weekend commentary to honor his passing—actions usually more suited to the deaths of former political leaders, not scientists ([Hunan Daily](#), May 23; [South China Morning Post](#), May 23). Such officially sanctioned national mourning was especially significant given that Yuan—famously not a Chinese Communist Party (CCP) member—had been a vocal critic of past CCP mistakes such as the Cultural Revolution and the Great Leap Forward. Predictably, state censors also leapt into action. The Weibo accounts of 68 users accused of spreading false information about Yuan's passing were shut down, and several people were arrested for insulting Yuan online ([China Digital Times](#), May 24).



*Image: People leave flowers and other mementos at a statue of Yuan Longping on the campus of his alma mater, Southwest University, in Chongqing, Sichuan Province, amid an outpouring of national mourning on May 23, 2021 (Source: [Sixth Tone/People Visual](#)).*

A careful spotlight was cast on Yuan's achievements, even as censors moved to silence criticisms of his life's work. Yuan successfully cultivated the world's first high-yield hybrid rice in the 1970s, helping to fight hunger and poverty on a global scale. By the time of his passing, 57 percent of all rice grown in China was comprised of hybrid varieties developed from his research, and propagandists praised his contributions to China's alleviation of absolute poverty last year ([Xinhua](#), May 23). Yuan was also a vocal anti-food waste proponent and a symbol of China's quest for food security, two issues that have gained renewed focus for Chinese policymakers in the wake of last year's coronavirus pandemic. Lawmakers in April passed an "Anti-Food Waste Law" ([反食品浪费法], *fan shipin langfei fa*) ([Xinhua](#), April 29), and are preparing to pass a new "Grain Security Law" ([粮食安全保障法], *liangshi anquan baozhang fa*) in the next two years ([Xinhua](#), January 14).

### **Food Security, Dual Circulation, and Self-Reliance After Covid-19**

Achieving food security has been a longstanding priority for the CCP. With a little over 1.4 billion people, China possesses almost one-fifth of the world's population but less than one-tenth of the world's total arable land. Although China's per capita grain production (1036 lbs) exceeds the international average (882 lbs), it remains the world's largest food importer, and a recent official statement admitted that the nation's food security was in a "tight balance" ([Guangming Daily](#), April 3). A growing middle class and changing consumption patterns are likely to create further demand pressures on China's food supplies. Shocks from the coronavirus pandemic, a 2019-2020 outbreak of swine fever, and historic flooding, droughts, and

typhoons last year all contributed to strain agricultural yields, while urbanization continued to shrink both available farmland and the rural labor supply ([South China Morning Post](#), November 29, 2020).

On top of these short- and long-term pressures, Chinese President Xi Jinping has called for developing basic self-sufficiency in grain production, saying at a December 2013 Central Rural Work Conference: “the Chinese people’s rice bowls must be firmly held in their own hands at all times” (中国人的饭碗任何时候都要牢牢端在自己手上, *zhongguo ren de fanwan renhe shihou douyao laolao duanzai ziji shou Shang*) ([People Online](#), November 25, 2014), and that said rice bowls should ideally be filled with Chinese-produced grains. To this end, a 2019 White Paper on food security prioritized domestic wheat and rice production, trading off increasing “moderate imports” of soybeans and corn to compensate ([SCIO](#), October 14, 2019).

Food security was enshrined last year as one of “six guarantees” (六保, *liubao*)—that the central government would prioritize as it sought to address economic uncertainties arising from the effects of the coronavirus pandemic ([Xinhua](#), April 20).<sup>[1]</sup> The emphasis on food security also dovetails with China’s post-pandemic dual circulation strategy (双循环, *shuang xunhuan*) which aims to rebalance toward domestic reliance (the second circulation) and self-sufficiency while still remaining open to global integration (the first circulation) ([CSIS](#), August 24, 2020).

In 2020, China bought record amounts of non-rice grains and oilseeds including wheat, sorghum and soybeans. Corn imports exceeded annual quotas as well, buoyed by a strong pig production recovery and pressures to fulfill its phase one trade deal commitments for cereal grain purchases from the U.S. ([South China Morning Post](#), February 12; [World Grain](#), January 19). Strong Chinese demand continued to raise grain prices to record highs into 2021 ([Agweek.com](#), March 8). Both before and after the pandemic, China has sought to diversify its food imports, looking to emerging economies in Latin America, Central Asia, and the Black Sea region to offset its corn and soybean dependence on the U.S. while also increasing its purchases of foreign arable land to offset domestic shortages; between 2000 and 2018, China was the world’s fourth-largest buyer of foreign land ([AmCham Shanghai](#), February 22).

Although the government said that the 2020 summer harvest produced “all-time high” outputs, anecdotal reports of grain shortages led farmers to hoard crops and state purchases of grain reserves declined ([South China Morning Post](#), August 7, 2020). Xi kickstarted a national anti-food waste campaign in August that culminated in the aforementioned April 2021 Anti-Food Waste Law, which seeks, among other things, to counter an estimated annual 35 million tons of grain loss due to inefficiencies in storage, transportation, and processing ([Xinhua](#), April 29). China’s State Council issued a guideline on preventing the non-grain use of arable land and stabilizing grain production to ensure food security in November ([Xinhua](#), November 18, 2020), and promulgated a draft law on the management of grain reserves in December ([Agriculture.com](#), December 3, 2020). Food security, specifically addressing the two problems of “seeds and arable land,” was also listed as one of eight key priorities at the Central Economic Work Conference in December ([Xinhua](#), December 18, 2020).

### **2021: Grain Security Elevated in the 14th FYP**

In January, the new Minister of Agriculture and Rural Affairs Tang Renjian (唐仁健) expanded on “solving the problems of seeds and arable land” saying that “Seeds are the ‘computer chips’ of agriculture, and cultivated land is the ‘lifeblood’ of food production.” The semiconductor analogy comes from the perception that seeds, like semiconductors, represent a “bottleneck” technology for which China is dependent on foreign-controlled resources that must be overcome to “ensure that the Chinese bowl mainly contains Chinese grains, and Chinese grains mainly use Chinese seeds” ([PRC Ministry of Agriculture](#), January 4).

The first joint policy statement of the CCP Central Committee and the State Council issued in 2021, which is commonly referred to as Document Number 1 and usually deals with rural issues, was dedicated to the topic of food security ([PRC Ministry of Ecology and Environment](#), February 22). It notably required provincial authorities to maintain a “red line” of 120 million hectares of arable land while increasing the yields of wheat, corn, rice, cotton, edible oils, sugar, and meat. Because of China’s limited land and water resources, the document specified that increasing crop yields will depend on technological advances in seed quality and agricultural techniques—including biological breeding, gene editing, synthetic biology, and artificial intelligence ([SCMP](#), February 22). As a first step toward improving the seed supply, China’s Ministry of Agriculture announced that it will conduct a survey of seed and animal genetic resources and “fight for a turnaround” in China’s seed industry in three years ([Global Times](#), March 24).

In the strongest signal of the central government’s elevation of food security as a key policy priority, grain security was included in the March release of the country’s 14th Five Year Plan (FYP, 2021-2025), which stipulated a binding (约束性, *yueshu xing*) developmental target to maintain annual grain production above 650 million tons through 2025 ([GuanCha.cn](#), March 13). It is worth mentioning that while the addition of a binding target for grain security in the 14th FYP is new, it is not especially ambitious: China’s total grain output exceeded the amount specified for the past six years ([Guangming Daily](#), April 3).

Grain, energy and financial security were also highlighted in a special section in the newest FYP on “safe development” amid a complicated global environment ([Global Times](#), March 8). A follow up article written by the Director of the National Food and Strategic Reserves Administration (国家粮食和物资储备局, *guojia liangshi he wuzi chubei ju*) quoted Xi, saying, “food security is an important foundation for national security” and, “guaranteeing national food security is an eternal topic, and this string must not be loosened at any time” ([Qiushi](#), April 16).

### **Conclusion**

The Chinese Vice Premier Li Keqiang recently hosted an executive meeting of the State Council on the topic of food security ([Xinhua](#), May 6). Li reiterated the official line that China has enjoyed “a succession of bumper harvests in recent years,” but also emphasized the national security imperatives of boosting the country’s

grain supply and storage capacity as well as the need to stabilize grain prices. Li also stressed the need to make up for key agricultural shortcomings (i.e., the problems of seeds and arable land) through scientific and technological advances.

Yet as China's leaders seek to pursue agricultural self-sufficiency through the development and commercialization of bio-engineered foods, they will also have to win over skeptical consumers with a long memory of food safety problems ([Bloomberg](#), March 29). The controversial phrase "genetically modified organism" (GMO, 转基因, *zhuanjiyin*), has been conspicuously absent from recent policy discussions on food security ([Caixin](#), February 22). Widespread but quickly censored criticisms of Yuan Longping's legacy demonstrate the Chinese public's wary relationship with GMO foods such as hybrid rice ([China Digital Times](#), May 24). China has mobilized its substantial state resources to elevate food security to a national security priority in the 14th FYP. Now, it will also have to wage a delicate public opinion campaign to convince domestic skeptics that the state's technology-driven solutions are viable and safe.

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### **Notes**

[1] Ensuring the "six guarantees" of 1) job security, 2) basic living needs, 3) operations of market entities, 4) food and energy security, 5) supply chain stability, and 6) the normal functioning of local governments, are intended to update the central government's 2018 economic policy priorities to maintaining the "six stabilities," (六稳, *liu wen*), consisting of stable employment, finance, foreign investment, local investment, and growth expectations ([CCDI](#), May 19, 2020).

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## What I Learned From the PLA's Latest Strategy Textbook

By Joel Wuthnow

### Introduction

In August 2020, China's National Defense University (NDU) released a revised version of its *Science of Military Strategy* (战略学, *zhanlüe xue*) (SMS), a core textbook for senior PLA officers on how wars should be planned and conducted at the strategic level. This article compares the 2020 version of this book with its last revision, in 2017, and finds that the former contains new details on wartime political work, "intelligentization" concepts, China's military strategic guidelines, major war operations, joint logistics and the People's Armed Police. It should be a go-to reference for those seeking to understand Chinese military thinking as it is currently explained to PLA officers themselves.



Image: The cover of the 2020 revision of the *Science of Military Strategy*, released in August 2020 (Source: Author's records).

## **Background**

Over the last three decades, China's two premier defense institutes—the Academy of Military Sciences (AMS) and NDU—have produced several editions of the *Science of Military Strategy*. AMS published new editions in 1987, 2001 and 2013. NDU published new editions in 1999 and 2015. In May 2017, NDU released a revision (修订, *xiuding*) to the 2015 edition, and then released another revision in August 2020.[1]

The postscript to the 2020 SMS explains that the recent revisions were necessary to “better adapt to the major trend in the form of warfare shifting from informationization (信息化, *xinxi hua*) to intelligentization (智能化, *zhineng hua*), elucidate the characteristics and rules of military struggle in the new era, reflect the newest results of national defense and army reforms, and promote innovation in our strategic theories” (p. 452). These volumes are best described as doctrinal teaching materials: previous editions have been included in the curricula at NDU, whose function is to train commanders at the senior colonel level and above.[2]

Although the books themselves are not “doctrine” per se, it is likely that the authors had access to—and based some of their judgements on—classified or otherwise non-public materials, including China's formal military strategy, known as the “military strategic guidelines” (军事战略方针, *junshi zhanlüe fangzhen*). Reviewing changes in the SMS over time can thus reveal insights into new issues, perspectives, and developments that the leaders of China's professional military education system believe need to be imparted to PLA officers.

## **Broad Similarities with the 2017 Revision**

The 2020 SMS, like the 2015 edition and the 2017 update, was coordinated by a “drafting team” (通稿组, *tong gao zu*) led by NDU deputy commandant Lieutenant General Xiao Tianliang (肖天亮) and including NDU National Security College deputy director Major General Lou Yaoliang (楼耀亮), and professors Kang Wuchao (亢武超) and Cai Renzhao (蔡仁照) from the NDU Military Strategy Research Office. Each chapter was authored by one to three subject matter experts but coordinated by the drafting team. As a result, the entire work reads like a coherent whole rather than a series of loosely related essays.

The 2020 SMS is only ten pages longer than the 2017 SMS (452 versus 442 pages), and the overall structure is basically the same. The 2017 revision included 24 chapters while the 2020 SMS added a single chapter on joint logistics. Both were organized into three parts (see table of contents below). The first part consists of general abstractions on strategic theory, planning, evaluation, and related topics. The second part covers special topics on strategic warfare, including crisis management and prevention, deterrence, war control, and operational guidance; it also includes chapters on military operations other than war and overseas operations. The third focuses on force development for each of the traditional services (army, navy, air force and rocket force), as well as space and cyber forces, the People's Armed Police (PAP) and reserve forces.

Table: SMS Chapter Lineup (2017 and 2020)

绪论 (Introduction)	
上编 (Part One)	
1	战略概论 (Strategic Theory)
2	战略判断 (Strategic Judgements)
3	战略决策 (Strategic Decisions)
4	战略规划 (Strategic Plans)
5	战略实施 (Strategy Implementation)
6	战略评估 (Strategy Evaluation)
中编 (Part Two)	
7	军事危机的预防与处理 (Preventing and Managing Military Crises)
8	战略威慑 (Strategic Deterrence)
9	新型领域军事斗争 (Military Struggle in New Domains)
10	战争筹划 (War Planning)
11	战争行动 (War Operations)
12	战局控制 (War Control)
13	作战指导 (Operational Guidance)
14	非战争军事行动 (MOOTW)
15	军事力量的海外运用 (Use of Military Forces Overseas)
下编 (Part Three)	
16	军事力量建设与发展的战略指导 (Strategic Guidance for Military Force Construction and Development)
17	陆军建设与发展 (Army Construction and Development)
18	海军建设与发展 (Navy Construction and Development)
19	空军建设与发展 (Air Force Construction and Development)

20	火箭军建设与发展 (Rocket Force Construction and Development)
21	军事航天力量建设与发展 (Space Force Construction and Development)
22	网络空间力量建设与发展 (Cyber Force Construction and Development)
23 (2020)	联勤保障力量建设与发展 (Joint Logistic Support Forces Construction and Development)
23 (2017) / 24 (2020)	武警部队建设与发展 (PAP Construction and Development)
24 (2017) / 25 (2020)	后备力量建设与发展 (Reserve Force Construction and Development)
后记 ( Postscript )	

Source: *Science of Military Strategy* 2017, 2020.

### Key Changes in the 2020 Revision

#### *A New Emphasis on Wartime Political Work*

One of the most interesting updates is the addition of a section on wartime political work in Chapter 10, on war planning (战争筹划, *zhanzheng chouhua*). Other parts of the chapter are written in an abstract style that could apply to any military, but this section starts with the clear statement that “wartime political work” consists of the “thought work” (思想工作, *sixiang gongzuo*) and “organizational work” (组织工作, *zuzhi gongzuo*) of the Chinese Communist Party (CCP) in “carrying out our military’s operations” (p. 212).

The section identifies the main features of wartime political work to include “unifying the thinking of war participants,” “guaranteeing robust party organizations,” “stimulating combat spirit,” “strengthening military propaganda and news control” and “breaking enemy resolve.” This is followed by a discussion of how to formulate political work plans and requirements, including the need to explore a “new model” of “political work plus information and network operations,” involving the more active use of social media platforms such as WeChat and Weibo (p. 216).

Adding this section is consistent with CCP General Secretary and Central Military Commission (CMC) Chairman Xi Jinping’s emphasis on improving party control over the military,<sup>[3]</sup> but according to the 2020 SMS, the changing character of warfare itself influenced this discussion. For instance, the authors suggest that enemy activities along the “hidden front” (隐蔽战线, *yinbi zhanxian*), including psychological warfare and “inciting defections” (策反, *cefan*), have become “increasingly intense” under conditions of “informationized and intelligentized” wars. Maintaining the party’s grip on information in the PLA during wartime, as well as its ability to influence foreign perceptions, is thus a top priority.

*An Increased Focus on Intelligentization*

“Intelligentization” broadly refers to a new phase of military modernization defined by the battlefield introduction of cutting-edge technologies such as artificial intelligence, robotics, nanotechnology, biotechnology, hypersonics, unmanned autonomous systems and big data analysis.[4] PLA analysts have studied these issues for many years but only just begun to address them in authoritative doctrinal teaching materials.

The 2020 revision expands on references to intelligentization in the 2017 SMS. Chapter 10 has a new section on the characteristics of “informationized local wars” that describes a “rapid development of military intelligentization” and notes that “intelligentized features of informationized local wars are becoming steadily more apparent” (p.185). Most of the service chapters in part three now also feature intelligentization as a requirement for capabilities development. For instance, Chapter 18 on the navy has a rewritten section on equipment modernization. Whereas the text in the 2017 SMS focused on mechanized and informationized systems, the 2020 revision references the need for progress in naval R&D for a new array of “intelligentized equipment” (p. 367).

*New Insight into the Military Strategic Guidelines*

Military strategic guidelines function as China’s military strategy, informing force development, planning, and disposition.[5] The guidelines themselves are periodically updated by the Central Military Commission but have not been made public in recent years. The 2020 SMS postscript confirmed that a key development spurring the revision was the “setting of the military strategic guidelines for the new era” (制定了新时代军事战略方针, *zhidingle xin shidai junshi zhanlüe fangzhen*). This appears to refer to an update to the guidelines made sometime after the 19th Party Congress was held in October 2017 (p. 3).[6]

One of the key judgements underpinning the guidelines is the “basic operational form” (基本作战形式, *jiben zuozhan xingshi*), which can be thought of as the dominant features of modern warfighting that may require the PLA to adapt or innovate. In the 2020 revision, Chapter 13 on operational guidance (作战指导, *zuozhan zhidao*) makes the new statement that this has shifted from “integrated joint operations” (一体化联合作战, *yiti hua lianhe zuozhan*) to “multi-domain integrated joint operations” (多域一体化联合作战, *duo yu yiti hua lianhe zuozhan*) (p. 264-7). The latter refers to an “advanced stage” of joint operations consisting of a high level of operational coordination across domains, including land, sea, air, space, cyber and the electromagnetic spectrum, and also the cognitive domain (智, *zhi*).[7]

The 2020 revision also adds new detail on how military strategic guidelines—as with most of the content in part one, stated abstractly and without specific reference to the PLA—should be formulated. Chapter 3 on strategic decision-making (战略决策, *zhanlüe juece*) adds that, in addition to six criteria mentioned in the 2017 revision, the guidelines should also consider the “strategic layout” (战略布局, *zhanlüe buju*) including

disposition of forces and resources; for instance, ensuring a proper balance of resources between the “main strategic direction” (主要战略方向, *zhuyao zhanlüe fangxiang*)—referring to the primary warfighting theater—and “other regions and strategic directions” (其他地区 and 战略方向, *qita diqu he zhanlüe fangxiang*) (p. 61).[8]

*A New Focus on Strategic Reconnaissance and Maritime Operations*

Chapter 11 discusses the characteristics and requirements for a series of major types of war operations (战争行动, *zhanzheng xingdong*). The 2020 revision adds two more operations to the 2017 revision’s eight. One new requirement is “strategic reconnaissance and strategic early warning” (战略侦察与战略预警, *zhanlüe zhencha yu zhanlüe yujing*) (p. 217-9). The section, which is presented first in the chapter, describes these operations as a “cornerstone of national security” and an “important constituent part of military struggle” consisting of intelligence collection, processing, and distribution (based on various platforms) to inform strategic decisions.

The second new section discusses “maritime maneuver operations” (海上机动作战, *haishang jidong zuozhan*), describing joint operations that aim to achieve control over “important sea areas” and “important maritime passages” (p. 233-4). The text does not cite specific locations but notes that one key characteristic of these operations is “a rather long distance from one’s home territory, with large difficulties in operational support,” suggesting preparing for combat-oriented operations in seas farther from China’s coasts and well-defended supply lines. The PLA Navy has been building a more capable blue-water force for years, but the emphasis on fighting jointly signals that combat operations in the “far seas” will be a team effort—and not the province of a single service.[9]

*New Content on Joint Logistics and the PAP*

Structural military reforms adopted under Xi influenced both the 2017 and 2020 revisions. The Joint Logistic Support Force was established in September 2016, too late to be included in the 2017 revision, and is the subject of the single new chapter in the 2020 SMS.[10] As with other chapters in the third part of the book, the chapter reviews key developments, which in the case of logistics includes precision delivery; consolidation of forces and resources and military-civilian fusion; requirements, which covers supply, medical services, transportation and military infrastructure construction; and “unmanned and intelligitized support capabilities” (无人智能化保障能力, *wu ren zhineng hua baozhang nengli*). It finally discusses how to improve various “systems” in the joint logistics force, including war reserves, command and control and training.

Apart from this, the most extensive changes in part three were made to Chapter 24 on the PAP. Structural reforms to the PAP came relatively late and also were not included in the 2017 revision.[11] The chapter was thoroughly revised in the 2020 SMS to account for new developments—one notable addition was a section

on “maritime rights protection capabilities” (海上维权执法能力, *haishang weiquan zhifa nengli*) that alludes to the role of the China Coast Guard, which was subsumed under the PAP in 2018 (p. 430; [War on the Rocks](#), April 4, 2018). The text makes the interesting point that the coast guard should have capabilities for “effectively protecting rights in the far seas and highly effectively enforcing laws in the near seas” (远海有效维权, 近海高效执法, *yuanghai youxiao weiquan, jinhai gaoxiao zhifa*), possibly signaling a future role for China’s coast guard beyond the first island chain. The new joint logistics and revised PAP chapters will be of interest to specialists seeking a better understanding of these evolving forces.

## Conclusion

The 2020 SMS is not a fundamental rethinking of China’s military strategy but provides new insights in all three of its main parts. When translated and widely available, it should be the standard reference for foreign scholars looking to better understand Chinese thinking at the strategic level of warfare. It is also worth considering how the PLA will close the gap between frequently updated teaching materials on military strategy and core texts at the campaign and tactical levels that are now quite old. The Central Military Commission’s issuance of a new outline for joint operations in November 2020 ([PRC Ministry of Defense](#), November 26, 2020), for instance, could prompt NDU to revise its *Science of Campaigns* (战役学, *zhanyi xue*), which has been an often-cited resource for PLA watchers but whose last edition dates from 2006.

*The author thanks M. Taylor Fravel, Frank Hoffman, and Phillip C. Saunders for helpful comments on this piece.*

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## Notes

[1] It is unclear whether AMS will publish future editions of the SMS. PLA interlocutors have suggested that there may be a new division of labor where NDU focuses on strategic level issues and AMS focuses on lower levels of warfare.

[2] See Kenneth Allen and Mingzhi Chen, *The People’s Liberation Army’s 37 Academic Institutions* (Washington, DC: China Aerospace Studies Institute, 2020), 34-41.

[3] See Phillip C. Saunders and Joel Wuthnow, “Large and In Charge: Civil-Military Relations under Xi Jinping,” in Phillip C. Saunders et al., eds, *Chairman Xi Remakes the PLA* (Washington, DC: NDU Press, 2019), 519-555.

[4] For a good primer, see Elsa B. Kania, *Battlefield Singularity* (Washington, DC: Center for a New American Security, 2017).

[5] See M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (Princeton, NJ: Princeton University Press, 2019); and David M. Finkelstein, "China's National Military Strategy: An Overview of the 'Military Strategic Guidelines,'" in Roy Kamphausen and Andrew Scobell, eds., *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military* (Carlisle, PA: U.S. Army War College, 2007), 69-141.

[6] M. Taylor Fravel reports an update sometime in 2014. See M. Taylor Fravel, "China's New Military Strategy: 'Winning Informationized Local Wars,'" July 2, 2015, <https://jamestown.org/program/chinas-new-military-strategy-winning-informationized-local-wars/>. The 2020 SMS appears to be referring to another update to the guidelines made by the CMC after the 19th Party Congress (October 2017).

[7] For more on PLA views of the "cognitive domain," see Nathan Beauchamp-Mustafaga, "Cognitive Domain Operations: The PLA's New Holistic Concept for Influence Operations," September 9, 2019, <https://jamestown.org/program/cognitive-domain-operations-the-plas-new-holistic-concept-for-influence-operations/>.

[8] This has been a theme of other PLA writings in recent years. See Joel Wuthnow, *System Overload: Can China's Military Be Distracted in a War Over Taiwan?* NDU China Strategic Perspectives 15 (2020), 10-11.

[9] On PLAN development, see RADM (ret.) Michael McDevitt, *China as a Twenty-First Century Naval Power* (Annapolis, MD: Naval Institute Press, 2020).

[10] See also Joel Wuthnow, "A New Era for Chinese Military Logistics," *Asian Security* (2021), <https://doi.org/10.1080/14799855.2021.1880391>.

[11] See Joel Wuthnow, *China's Other Army: The People's Armed Police in an Era of Reform*, NDU China Strategic Perspectives 14 (2019).

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## Automation and Digitalization of Justice in China's Smart Court Systems

By Straton Papagiannas

### Introduction

The automation of justice has become a worldwide phenomenon. Various big data and artificial intelligence (AI)-driven technological applications have been introduced in the administration of justice over the past years. These range from predictive analytics to automated divorce proceedings and automated decisions in small claims cases.[1] The People's Republic of China (PRC or China) stands at the vanguard of this development. Its judiciary has embraced the power of technology to promote judicial reform and “to build a judicial mechanism that is open, dynamic, transparent, and convenient and improve public understanding, trust, and supervision of the judiciary” ([The Supreme People's Court](#), February 26, 2015).

Under Chinese Communist Party (CCP) General Secretary Xi Jinping's “ruling the country according to the law” (依法治国, *yifa zhiguo*) reform platform, the modernization of the judiciary is a top priority. The Xi administration has indicated that it wants to re-establish the legitimacy and credibility of its legal system, mainly by centralizing control and improving judicial consistency across the country. Additionally, it has launched reforms aimed at improving procedures and compliance.[2] Judicial reform has, among others, focused on increasing judicial accountability and supervision mechanisms ([Supreme People's Court](#), August 5, 2020; [Supreme People's Court](#), April 18, 2017), unifying and standardizing law application ([Supreme People's Court](#), July 27, 2020), and improving transparency and judicial services ([Supreme People's Court](#), November 21, 2013; [Supreme People's Court](#), September 25, 2020).

China's first digital court, the Hangzhou Internet Court, launched its full online litigation platform in 2017 to hear internet-related civil and administrative cases ([Hangzhou Internet Court](#), August 18, 2017). The Supreme People's Court spurred on these developments with an authoritative opinion calling on all courts throughout the PRC to accelerate “building smart courts” (建设智慧法院, *jianshe zhihui fayuan*) ([The Supreme People's Court](#), April 12, 2017). Since then, many courts throughout China have developed and implemented various systems to automate and digitalize their court proceedings, often in cooperation with private technology enterprises. For example, Alibaba developed the first AI assistant judge to help judges during trial hearings, significantly reducing the time from filing to closing. This was debuted in the People's Court of Shangcheng District, Hangzhou City, in September 2019 ([AI Legal Studies](#), October 10, 2019).

This article takes stock of China's smart court policy by analyzing the 2020 annual “Report on Informatization of Chinese Courts [中国法院信息化发展报告, *zhongguo fayuan xinxi hua fazhan baogao*]” (hereafter “Report”), which is published by the Legal Studies Research Center of the state-affiliated Chinese Academy of Social Sciences.[3] It finds that China's smart court system is diverse and that no stereotypical “smart court” exists. An overall smart court trend is that the use of technology in judicial practice increases control,

supervision and standardization of adjudication. And although many other jurisdictions are still hesitant to adopt AI technology because of rights-protection concerns, AI adjudication is suitable for China's legal system because it reinforces much-needed standardization processes.



*Image: A photo from a conference accompanying the release of the 2020 Report on the Informatization of Chinese Courts, taken June 3, 2020 (Source: [Economic Daily](#)).*

### **Taking Stock: The 2020 Report on the Informatization of Chinese Courts**

The 2020 Report on the Informatization of Chinese Courts provides an insightful window into the functions and purposes of different smart systems.[3] It is an official research report on the development of smart courts that evaluates and summarizes the experiences and achievements of different courts across the country. According to the Report, courts at all levels across the country have reached a new level in standardization, systematization, precision, and intelligence in informatization construction. At the same time, the informatization of Chinese courts still needs to be further improved in terms of promoting in-depth applications, building a unified platform, improving user experience and improving data quality.

In its introductory chapters, the Report states that 93 percent of courts in China have achieved digitalization of core functions, such as an electronic dossier directory, digitalized generation of legal documents and a digital archive. The next step is to accomplish the simultaneous generation of digital files alongside court proceedings, allowing for proceedings to be conducted completely digitally. This includes procedural steps such as transferring cases to other courts for appeals and retrials. This full-process digitalization constitutes the foundation for more advanced applications, including AI-supported decision-making. The main shortcoming so far in smart court building is the uneven progress across China. To mediate this, the Report calls to promote a more coordinated development by providing more financial guarantees and training technical personnel.

The rest of the Report is organized according to five different themes: increasing trial efficiency, strengthening trial supervision, resolving “implementation problems” (执行难, *zhixing nan*), improving the quality of justice for the people and judicial big data. Each theme section includes three or four case studies written by judicial officials and researchers affiliated with the relevant courts. This article discusses two of them in particular, which have unique implications for the development of China’s smart court system. Although these two cases in particular were motivated by different (even opposite) intentions, they demonstrate a surprising convergence of outcomes. Their examples might indicate that centralization is not just a driving factor behind judicial digitalization, but also an inherent and self-reinforcing characteristic of the reforms.



*Image: (Left) Digital rendering of a proposed smart court project between the legal technology company Vtron and the People’s Court of Minhang District, Shanghai (Source: [Vtron](#)). (Right) A staff member at the Cangzhou Intermediate People’s Court in Hebei Province explains “intelligent litigation equipment” to the public (Source: [People Online](#)).*

## **Two Smart Courts**

### *The Yibin People’s Court’s Supervision Platform*

One case study in the Report details the development of a supervision platform in the Yibin People’s Court of Sichuan Province, which is meant to help perfect the judicial accountability system.<sup>[4]</sup> The Report states that many judges were resisting supervision on the grounds of wanting an independent trial. At the same time, other senior court officials worried that their supervision would be misinterpreted as illegitimate interference. In response, the Yibin Court introduced a new supervision mechanism that was integrated into a digital platform to enhance the reform’s effectiveness ([Yibin City Intermediate People’s Court](#), July 20, 2019; [Yibin City Intermediate People’s Court](#), July 20, 2019).

The system has specific supervisory functions. One is the hierarchical supervision function, effectively laying down a chain of command clarifying supervision between higher and lower ranked courts. Each court can predetermine what kinds of cases get flagged by the system according to their circumstances. The system

can then detect and send a warning to higher-ranked courts. A human then makes a judgment regarding the case. Where the case needs further supervision, the higher-ranked court guides the lower-ranked court via the system.

The digital environment also facilitates communication between junior and senior judges, allowing a senior judge to supervise a particular junior judge's case. Likewise, a junior judge may request supervision from a senior colleague in particularly complicated cases.

The system has a node supervision function that allows the real-time monitoring of a case's progress. If it detects an action that is not compliant, measures are taken. For example, the system can freeze the case proceedings until supervision requirements are met, and the court president approves continuation. Moreover, it determines clear time limits for each stage of the judicial process, which the system then tracks. In case of an approaching deadline, the system may send out warnings to the case-handling judge. In this sense, the supervision system also works as a management system.

The guidance of lower-ranked courts and judges in adjudicating a particular case is not new in the Chinese judicial system.<sup>[5]</sup> However, the novelty here is that these practices are being (semi-) automated, digitalized, and standardized. It is important to note that the system registers every single step or action. Thus, technology is used to formalize and standardize previously informal and off-the-record practices.

#### *The Jiangxi's High Court "Judge e-Assistant" Platform*

The "judge e-assistant" platform is defined as an "intelligent auxiliary case handling platform based on the actual conditions of courts in Jiangxi Province".<sup>[6]</sup> Its primary purpose is to help judges to prepare and adjudicate cases. The Report says that this system helps reduce the workload of judges, empowers them and improves the quality and efficiency of trials.

The "judge e-assistant" platform uses text recognition, image recognition and analysis to automatically index and organize scanned litigation materials. The system can also cross-reference and analyze the plaintiff's and defendant's key information with other databases to check for overlapping or serial litigation. It can generate relevant legal documents through text recognition, semantic analysis, and summary of other materials, such as trial hearing transcripts, first-instance judgments, etc., and allows judges to generate procedural documents with one click, which are then automatically generated and stamped.

The platform also has a similar-case push system. It can analyze case information in-depth and actively suggest laws, regulations, guiding cases, similar cases, and books and periodicals to judges to provide in-depth guidance. Finally, it records all decisions made at each procedural step of the case proceedings. This can then be used for management and supervision purposes.

This specific kind of auxiliary AI system is used in different courts across China. The most widespread and developed version of this is the Faxin 2.0 Smart Push System ([Smart Court Times](#), October 28, 2020). This type of AI-supported adjudication aligns with how overall judicial reform envisions the role of technology in standardizing the application of the law by reducing individual judges' discretion.

The case study on Jiangxi's "judge e-assistant" in the Report explicitly positions it in contrast to other systems that prioritize supervision and management. Other reforms, such as the judges' quota and accountability system, have mainly impacted rank-and-file judges, significantly affecting their work. The initiative is framed as attempting to address these issues and relieve pressure for frontline judges. Its success in this regard remains open to question, but according to the study, the e-assistant has assisted in the generation of over a hundred thousand judgment documents.

While both systems fell under smart court reforms, the intentions behind them were almost opposite. The Yibin Court's system was developed in response to resistance from the rank-and-file against the new quota and responsibility system for judges. It was motivated by a top-down, management-focused approach that had little consideration for frontline judges' workload concerns. The Jiangxi High Court's initiative, in contrast, was more concerned with front-line judges' perspectives, and was specifically aimed at relieving judges' workload pressures. It entailed a more bottom-up approach, beginning with the idea of serving judges, not management. But, technology, and particularly AI, often produces different outcomes than expected. In the cases of both the Yibin and Jiangxi court systems, despite having different motivating factors, their outcomes were largely the same: enhancing mechanisms of control and supervision while simultaneously reducing the space for judicial discretion.

### **Conclusion**

What becomes clear from the Report and the case studies presented here is that different courts have different priorities. Depending on who takes the initiative in a particular court, we see a different kind of smart system. There exists no single prototype of *the* smart court. It is especially interesting to contrast the two case studies presented in this article, which show that the motivating factors behind the development of smart systems can vary significantly.

In this sense, China's "smart court" system is diverse and fragmented. This can be attributed to China's typical experimentation style in promoting reform. As the Report notes, development has been uneven, which is attributable in part to budgetary differences across provinces. These systems are also often developed in cooperation with local private legal technology companies, which could have a further silo-ing effect. It remains to be seen whether China will succeed in integrating and centralizing these different systems, as it risks creating compatibility issues during the experimental reform process.

In another sense, the Report reveals key similarities across China's smart courts: many of the systems seem, in one way or the other, to enhance control and oversight over judicial power. Taking a step back, the unifying idea behind court digitalization can be identified as a vision of "codified justice": it favors standardization over discretion.[7] Other judicial reforms under Xi Jinping and his socialist rule of law rhetoric have also pointed in this direction. The smart court policy demonstrates how China is using the power of technology to drive these reforms.

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## Notes

[1] For examples, see: Ed Yong, "A Popular Algorithm Is No Better At Predicting Crimes Than Random People," *The Atlantic*, January 17, 2018, <https://www.theatlantic.com/technology/archive/2018/01/equivant-compass-algorithm/550646/>; "Divorce QLD: How Adieu app is changing divorce," *Courier Mail*, March 15, 2019, <https://www.couriermail.com.au/questnews/north/divorce-theres-now-an-app-for-that/news-story/c68ed2c459115e87481bd693b4ee9278>; Tara Vasdani, "Estonia set to introduce 'AI judge' in small claims court to clear court backlog," *The Lawyer's Daily*, April 10, 2019, <https://www.thelawyersdaily.ca/articles/11582/estonia-set-to-introduce-ai-judge-in-small-claims-court-to-clear-court-backlog->.

[2] For examples, see: Sarah Biddulph, Elisa Nesossi and Susan Trevaskes, "Criminal Justice Reform in the Xi Jinping Era," *China Law and Society Review*, 2, 2017, 63-128; Elisa Nesossi and Susan Trevaskes, "Procedural Justice and the Fair Trial in Contemporary Chinese Criminal Justice," *Governance And Public Policy in China*, 2, 2018, 1-92.

[3] Chen Su (陈甦), Tian He (田禾), Lü Yanbin (吕艳滨) and Hu Changming (胡昌明), "Report on Informatization of Chinese Courts [中国法院信息化发展报告, *zhongguo fayuan xinxi hua fazhan baogao*]," Beijing: Shehui kexue wenxian chubanshe [Social Sciences Academy Press], May 1, 2020. The Report can be accessed at: [https://www.pishu.com.cn/skwx\\_ps/bookdetail?SiteID=14&ID=11566098](https://www.pishu.com.cn/skwx_ps/bookdetail?SiteID=14&ID=11566098). Alternatively, the full Report can be purchased via Amazon Kindle: <https://www.amazon.cn/dp/B0897V5BMH>.

[4] Huang Junjie (黄俊杰), "Exploration of innovative application of new trial supervision and management: Taking Yibin Court's "full court, full process" supervision platform as an example [新型审判监督管理应用创新探索:以宜宾法院 "全院全员全程" 监管平台为例]," in: Chen, Tian, et al., (eds.), *Report on Informatization of Chinese Courts No. 4 [中国法院信息化发展报告 No. 4]*, Beijing: Shehui kexue wenxian chubanshe [Social Sciences Academy Press], 2020, 123-135.

[5] Xin He, “Pressures on Chinese Judges under Xi,” *The China Journal*, 85, January 2021, 49-74.

[6] Wu Shunhua (吴顺华). “An intelligent and team-based accelerator for judges’ case-handling: Jiangxi Court “Judge e Assistant” Platform Construction Application Report [法官办案智能化、团队化的加速器: 江西法院“法官 e 助理”平台建设应用报告],” in: Chen, Tian, et al., (eds.), *Report on Informatization of Chinese Courts No. 4 [中国法院信息化发展报告 No. 4]*, Beijing: Shehui kexue wenxian chubanshe [Social Sciences Academy Press], 2020, 82-94.

[7] For examples, see: Andrea L. Roth, “Trial by Machine,” *Georgetown Law Journal*, 104, March 2016, 1245-1306; Richard M. Re and Alicia Solow-Niederman, “Developing Artificially Intelligent Justice,” 22 *Stanford Technology Law Review*, 2019, 242-289; Maria Jean J. Hall, Domenico Calabrò, Tania Sourdin, Andrew Stranieri, and John Zeleznikow, “Supporting discretionary decision-making with information technology: case study in the criminal sentencing jurisdiction,” *University of Ottawa Law Technology Journal*, 2, 2005, 1-36.

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## Beijing Boosts its Position as a “Himalayan Hegemon” Through Hydropower

By Jagannath Panda

### Introduction

China’s building of ambitious hydropower and water diversion projects, and increasing focus on the Himalayan ecosystem as a critical developmental resource, has increased tensions with its regional neighbors, particularly India. The Chinese state contractor PowerChina in November 2020 announced plans for a 60-gigawatt dam on the Yarlung Tsangpo (雅鲁藏布, yalu zangbu) ([Global Times](#), November 29, 2020). The “historic” hydropower project was also included in the “14th Five-Year Plan (FYP, 2021-25) and Long-Range Objectives Through 2035” (国民经济和社会发展第十四个五年规划和2035年远景目标纲要, guomin jingji he shehui fazhan di shisi ge wunian guihua he 2035 nian yuanjing mubiao gangyao), which listed the Chinese Communist Party (CCP)’s near and long-term goals for “socialist modernization” ([Global Times](#), March 13; [Gov.cn](#), March 13). More recently, Chinese President Xi Jinping’s recent visit to a symposium on follow-up projects to the South-North Water Transfer Project (南水北调, nanshui beidiao) on May 14 also underscored the central government’s dedication to water resources development; the CCP’s pursuit of large-scale and prestigious water projects has been closely tied to the party’s legacy as it prepares for centennial celebrations in a month’s time ([People’s Daily](#), May 15).



Image: A line map of the Yarlung Tsangpo Great Bend, showing previous Chinese dams constructions (in bold) and the proposed site of the newest 60-gigawatt hydropower project at Metog (Source: [South Asia Network on Dams, Rivers and People](#)).

The Yarlung Tsangpo also passes through India (where it is known as the Brahmaputra) and Bangladesh (where it is called Jamuna), and news of China’s proposed dam on its lower reaches sparked outcry from downstream countries ([Benar News](#), December 7, 2020; [The Hindu](#), January 31). With water being a critical

shared resource between the upper and lower riparian countries, what are the implications of China's hydropower project for other Himalayan countries, particularly India and Bangladesh? Furthermore, considering the drastically changed dynamics between India and China since the 2020 border standoff, what are the potential implications for a transboundary water resource conflict?

### **Hydropower Politics**

Alongside other hydropower projects, the proposed Yarlung Tsangpo dam is intended to support China's national environmental objectives to peak carbon emissions before 2030 and reach carbon neutrality by 2060 ([South China Morning Post](#), April 1). Unofficial media reports have also claimed that the impetus for the new dam is driven by increased regional energy demands in the Tibetan Autonomous Region (TAR) due to the imminent completion of the Sichuan-Tibet Railway ([163.com](#), December 4, 2020). It will be the first to tap the downstream section of the Yarlung Tsangpo and could potentially "provide 300 billion kWh of clean, renewable, and zero-carbon electricity annually" to China ([Hindustan Times](#), November 29, 2020), generating potential "income of 20 billion yuan (\$3 billion) annually for the Tibet Autonomous Region" ([Global Times](#), November 29, 2020).

Beijing has touted the Yarlung Tsangpo dam as an opportunity to collaborate between China and South Asian nations, suggesting that these countries can use the Lancang-Mekong Cooperation Mechanism to advance the more efficient use and improvement of water assets ([Global Times](#), November 29, 2020). It took 26 years for China to announce the full completion of the 22.5-gigawatt Three Gorges Dam, currently the world's largest hydropower project ([Xinhua](#), November 2, 2020). The Yarlung Tsangpo dam's inclusion in the 14th FYP, amidst Beijing's focus on increasing the TAR's economic and energy output, hints at a much faster completion timeline. The 16-gigawatt Baihetan Dam project in Sichuan Province, which is due to begin operation on the day of the CCP's centennial celebrations on July 1, was completed in a comparatively rapid four years ([Inkstone](#), March 18).

China hopes that the mega-dam will serve as an example of its leadership in tackling climate change and its active efforts in reducing reliance on coal. Details for the proposed construction are limited, but independent analysts have warned that the dam's proposed location in a remote and geologically volatile area could make it "the world's riskiest [hydropower] project...technically the most difficult to build, ever, and it's the most expensive project ever undertaken on any river anywhere in the world" ([ABC](#), May 24). Increasing tensions with India also play a role in Beijing's growing strategic focus on the Himalayan region—and its desire to increase its physical footprint in the region. It seems that China intends to act as a regional 'hegemon', dictating both resource allocation and its political relationships with neighboring countries in the Himalayan region.

### **Beijing's Emergence as Himalayan Hegemon**

Historically, the Himalayan mountains served as a buffer between pre-modern China and British India, but China's 1950 invasion of Tibet changed this dynamic.[1] Since then, China has made increasingly assertive claims over "Greater Tibet" and adjacent regions, including the Indian state of Arunachal Pradesh and territories in Ladakh.[2] Last year's Galwan Valley clash marked the first violent border conflict between India and China since 1975 ([Hindustan Times](#), June 17, 2020), and China's trans-Himalayan territorial claims have also resulted in growing border tensions with neighboring countries such as Nepal and Bhutan ([Business Standard](#), May 20; [The Tribune](#), May 22).

China's foreign policy in the Himalayan region has been called an "invisible incursion," with culture, language, religion, and ideology serving as a means to expand China's political and economic influence even as it simultaneously pursues a rapid policy of infrastructure development that challenges historic borders.[3] In the past several decades, Beijing has emerged as a major economic partner for Pakistan, Bangladesh and Nepal; some of these countries historically fell under New Delhi's sphere of influence. China's soft power approach has been largely unchallenged by trans-Himalayan countries that have prioritized access to Chinese investment for strengthening military control and pursuing state-driven infrastructure development in the region ([China Brief](#), November 12, 2020).

The trans-Himalayan states have invested heavily in hydropower dams, including India, China, Nepal, Bhutan, and Pakistan. The pursuit of hydropower has economic drivers, while also serving as a mechanism for state-making and territorialism.[4] A China-India dam race has also played out in third party countries: for instance, one of India's largest foreign-aid projects is the Mangdechhu hydro-project with Bhutan, representing almost Rs 4,500 crore (\$695 million) of investment ([Economic Times](#), April 26, 2019). China, under the aegis of its Belt and Road Initiative (BRI) foreign policy and infrastructure project, has funded multiple dams in Nepal, including projects like Budhigandaki and West Seti ([The Wire](#), June 22, 2018).[5]

### **Beijing's Water Conflict with New Delhi**

New Delhi has long worried that the upstream damming of the Yarlung Tsangpo in China could cut off water supply downstream in the Brahmaputra. After news of the new Yarlung Tsangpo project sparked concerns in India late last year, the Chinese foreign ministry spokesperson Hua Chunying said, "it is China's legitimate right to carry out hydropower station development in the lower reaches of the Yarlung Zangbo River" ([PRC Foreign Ministry](#), December 3, 2020). Similarly, the Embassy of China in India clarified that Beijing "has always taken a responsible attitude towards the development and utilization of cross-border rivers...Any project will undergo scientific planning and demonstration with full consideration for the impact on the downstream and the interests of both upstream and downstream countries...There is no need to over-interpret it" ([Embassy of the PRC in the Republic of India](#), December 2, 2020).

Nevertheless, New Delhi remains concerned ([Hindustan Times](#), December 3, 2020). The Brahmaputra is necessary both for India's agricultural economy and renewable energy supplies; managing its flow is critical

for the country’s development. New Delhi’s concerns over China’s water management practices date back to the South-North Water Diversion Project (SNWDP), a long-term effort to redirect water from China’s water-rich south to drier regions in the north, first envisaged under Mao Zedong in 1952 and implemented with the promulgation of the State Council’s “Regulations on the Water Supply Management of the South-to-North Water Diversion Project” (南水北调工程公用水管理条例, nanshui beidiao gongcheng gongyong sui guanli tiaolie) in 2014 ([Gov.cn](#), February 16, 2014). New Delhi is anxious that the diversion of substantial volumes of water from the Tibetan plateau watershed could strain India’s agricultural needs in its northeastern provinces; conversely, Chinese mismanagement could lead to overflows and floods in India. Such concerns are not unfounded. In 2000, a Tibetan dam burst resulted in massive flooding in India. India and Nepal have also suffered flash floods amidst a consistent lack of adequate data-sharing on Tibetan glacial lakes and rivers from China ([Rediff](#), July 10, 2000; [Harvard Political Review](#), October 16, 2020).

China’s lack of clarity and communication only add to India’s worries. New Delhi and Beijing share several Memorandums of Understanding (MOUs) on hydrological data sharing (see Table 1), and an India-China MOU on data sharing for the Yarlung Zangbo/Brahmaputra was signed in 2002 and renewed in 2008, 2013, and 2018 ([Firstpost](#), January 12, 2020). However, this MOU is primarily focused on providing flood warnings during the monsoon season (May 15 to October 15), and the sharing of critical hydrological data has become politically charged. For instance, during the 73-day-long standoff between the Indian and Chinese militaries at Doklam in 2017, China unilaterally stopped the practice of sharing hydrological data ([ORE](#), December 4, 2019), and only resumed sharing data in May 2018, after meetings between Indian Prime Minister Narendra Modi and Chinese President Xi Jinping along the sidelines of the Shanghai Cooperation Organization (SCO) ([The Wire](#), May 17, 2018).

*Table: India-China Hydrological Data Sharing MOUs/Mechanisms*

<b>MOU/Mechanism</b>	<b>Date</b>	<b>Key Issue</b>	<b>Current Status</b>
MOU on Brahmaputra/Yalu Zangbu River	April 24, 2002	To share hydrological information for flood forecast on Nugesha, Yangcun and Nuxia stations located on Yaluzangbu and Brahmaputra rivers	China has been providing flood risks and water level information to India during flood season and the MOU is periodically renewed, most recently in 2018.
MOU on Sutlej/Langquin Zangbo River	April 11, 2005	For supply of hydrological information about Sutlej and Langquin Zangbo rivers	China has been providing information of any abnormal rise/fall of water level, which could lead to floods. The MOU was renewed in December 2010 for five years.
MOU on	June 5, 2008	To share hydrological	China shares data of water level

Brahmaputra/ Yalu Zangbu River		information for flood forecast on Yalu Zangbu and Brahmaputra rivers	of Brahmaputra during flood season (June 1 to October 15), including data from Nugesha, Yangcun and Nuxia stations to India. In exchange, India shares the details of data utilization. The MOU was renewed in May 2013.
MOU on Sutlej/Langquin Zangbo River	December 16, 2010	For provision of hydrological information of Sutlej and Langquin Zangbo rivers in flood season by China to India with a validity of five years.	Renewed MOU, China has been sharing flood risk data from its Tsada station during flood season (June 1 until end of October) every year.
MOU on Sutlej/Langquin Zangbo River	April 2011, 5th ELM meeting	Technical details of provision of hydrological information, data transmission method and cost settlement.	The 5th Expert Level Mechanism (ELM) meeting discussed technical and implementation details of the renewed MOU.
MOU on Brahmaputra/Yalu Zangbu River	October 23, 2013	To strengthen cooperation on trans-border rivers and enhance the provision of hydrological information.	Extension of previous MOU. The data sharing dates were changed: China previously provided data from June 1, but after this agreement, China agreed to share flood data from May 15 to October 15.
Implementation Plan of MOU on Brahmaputra/Yalu Zangbu River	June 30, 2014	For provision of hydrological information during flood season	China shares data of water level of Brahmaputra during flood season i.e. May 15 to October 15 every year, including data from Nugesha, Yangcun and Nuxia stations to India. In exchange, India shares the details of data utilization. The MOU is renewed.
MOU on Sutlej/Langquin Zangbo River	November 6, 2015	For provision of technical and hydrological information on Sutlej and Langquin Zangbo River.	Renewed MOU. China has been sharing flood and water level rise related information with India from June 1 to the end of October every year, along with any other abnormalities that it senses during the rest of the year.

Implementation Plan of MOU on Sutlej/Langquin Zangbo River	April 13, 2016, 10th ELM meeting	For provision of hydrological information on Sutlej and Langquin Zangbo River.	Details of the above-mentioned MOU discussed during the ELM meeting.
11th Meeting of India-China ELM on Trans-border Rivers	May 26-27, 2018	For provision of hydrological information on Sutlej and Langquin Zangbo River	Meeting discussed technical and implementation details of the existing MOU.

*Source: Author's research.*

The Doklam incident made clear that China views water as a sovereign political tool. Now, with the Galwan Valley clash bringing the India-China ties to a new low, the competition over cross-border water resources has once again become a contentious issue. For China, the dam is also a way to assert its control over the contentious Tibetan region, where it has touted its infrastructure projects and economic development as a means of asserting the legitimacy of its control ([Xinhua](#), May 21). The Yarlung Tsangpo was a crucial determinant in the CCP's decision to take control of Tibet in 1950 and become an upper riparian country ([Lowy Institute](#), July 23, 2020). Amid China's more recent aims to develop an "ecological civilization" and become a resource-independent economy, exploiting the TAR's water resources has gained significance as a matter of national security. Hydrological information pertaining to the Yarlung Tsangpo has become linked to state policy planning and secrecy. For its part, India increasingly sees China as an authoritarian and non-cooperative actor in the contested Himalayan valley.

### **Mapping Four Future Scenarios**

With China's massive new hydropower project on the politically contentious Yarlung Tsangpo now a strategic priority under the 14th FYP, water politics in the Himalayas requires more acute attention than ever before. There are four possible future scenarios for water cooperation and competition.

First, India and China may forge a *cooperative scenario* as part of the normalization of ties after the Galwan Valley incident. This would require both countries to build on their current bilateral apparatus and channels—the MOUs and the Expert Level Mechanism (ELMs)—ideally leading to concrete agreements. These could span matters like collaborating on hydropower infrastructure projects, treating the Yarlung Tsangpo river water as a joint transnational energy resource, and initiating a joint action plan for a flood management system that enables early warnings and regular data sharing. This best-case scenario is unlikely under the current conditions: India-China ties have taken a significant downturn, and New Delhi's trust in Beijing is all but eroded. Although both sides are still engaged in an ongoing border disengagement following the outbreak of violence last year, the larger bilateral relationship remains incredibly distrustful, particularly situated in the broader context of India's increasing synergy with like-minded allies in the Quadrilateral Security Dialogue

(Quad) (i.e., the U.S., Japan and Australia) regarding the need to balance (if not counter) China in the Indo-Pacific.

Second, India and China could enter a consultative scenario wherein they attempt to navigate the water issue through regular consultations, possibly via a multilateral forum with other critical Himalayan stakeholders such as Bangladesh, Nepal and Bhutan. Such a mechanism could be dictated under the United Nations 1997 Convention on the Law of the Non-navigational Use of International Watercourses ([United Nations](#), August 17, 2014). This is perhaps the best scenario that India could hope for. China has not shown any inclination to enter into consultations and has outright rejected the 1997 UN Convention, but Beijing might be persuaded to start informal stakeholder talks that could eventually be elevated to regular formal talks with concrete outcomes. China has displayed a cooperative outlook towards the Mekong River Basin, likely due to the prominent position Southeast Asia occupies in its foreign policy ([RSIS](#), February 2016). As South Asia becomes an increasing focal point for Beijing ([Hindu Business Line](#), December 17, 2020), there is a chance that China could also be encouraged to act more cooperatively over the Yarlung Tsangpo water sharing issue.

Third, China's refusal to enter into any kind of dialogue could push both states into a *confrontational scenario*, in which tensions over the Yarlung Tsangpo/Brahmaputra water resource will continue to increase. This scenario best describes the current state of affairs. Should such tensions continue, however, India and China could move rapidly towards the *fourth* scenario, entering a full-fledged *water war*. This would entail a complete breakdown of communication and arrangements between both states on water issues, potentially alongside a similar decline in security and trade relations.

### **Conclusion**

How the situation plays out will invariably be tied to not only the outcome of the India-China border dispute but also larger regional power dynamics and geopolitics in the Indo-Pacific. For India, the priority must be to maintain open communication and push for negotiations for a water-sharing treaty between China and other South Asian neighbors, particularly involving Bangladesh. Ultimately, the outcome will depend on China's approach: whether it wants to emerge as a cooperative country or remain tied to its authoritarian, non-cooperative, and hegemonic outlook, solidifying its position of acting as a *de facto* 'Himalayan Hegemon'.

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**Notes**

[1] See: Hussain Haqqani, "An Integrated Approach to the Himalayas: Report of the Working Group on the Himalayan Region," Hudson Institute, September 2017, <https://s3.amazonaws.com/media.hudson.org/files/publications/HimalayasWorkingPaperFINAL.pdf>; and Karunakar Gupta, "The McMahon Line 1911-45: The British Legacy," *The China Quarterly*, No. 47 (July-September 1971), [https://www.jstor.org/stable/652324?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/652324?seq=1#metadata_info_tab_contents).

[2] See: Tsering Topgyal, "Charting the Tibet Issue in the Sino-Indian Border Dispute," *China Report*, Vol 47, Issue 2, [https://www.researchgate.net/publication/241644832\\_Charting\\_the\\_Tibet\\_Issue\\_in\\_the\\_Sino-Indian\\_Border\\_Dispute](https://www.researchgate.net/publication/241644832_Charting_the_Tibet_Issue_in_the_Sino-Indian_Border_Dispute).

[3] Haqqani, September 2017.

[4] See: Ruth Gamble, "How dams climb mountains: China and India's state-making hydropower contest in the Eastern-Himalaya watershed," *Thesis Eleven*, Vol. 150, Issue 1, February 15, 2019, <https://journals.sagepub.com/doi/10.1177/0725513619826204>.

[5] See: Galen Murton and Austin Lord, "Trans-Himalayan power corridors: Infrastructural politics and China's Belt and Road Initiative in Nepal," *Political Geography*, Vol. 77, March 2020, <https://www.sciencedirect.com/science/article/abs/pii/S096262981930040X>.

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## Suez Closure Brightens the Future of China's New Silk Road

By John Daly

### Introduction

On March 23, the 240,000-ton, 1,312 feet long (399 meters) Panama-flagged MV container ship *Ever Given*, drawing 47 ft 7 in (14.5 meters) and carrying 20,000 containers from China's Yantian International Container Terminal in Shenzhen, Guangdong Province bound for Rotterdam, accidentally grounded its bow on the Suez Canal's eastern bank while transiting northwards from the Red Sea. It completely blocked the passage in both directions for six days, stranding hundreds of waiting vessels and paralyzing the global shipping industry.

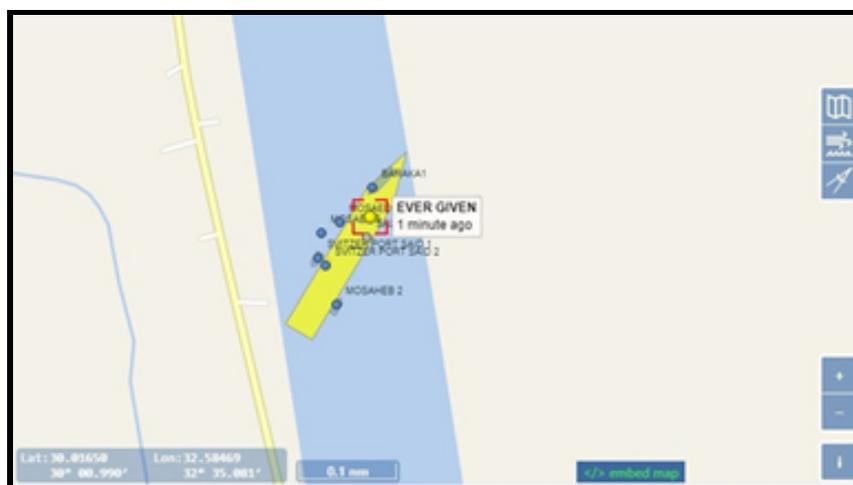


Image: A screenshot of the grounding of the *Ever Given* in the Suez Canal, taken from the ship tracking website *vesselfinder* and posted on March 24, 2021 (Source: [global.udn.com](http://global.udn.com)).

The *Ever Given* had been chartered by Taiwan-based Evergreen Line and was under the control of a local pilot for its passage through the canal when it grounded. Japan's Shoei Kisen Kaisha Ltd., owner of the *Ever Given*, now faces legal action over the accident, and an Egyptian court has sustained a Suez Canal Authority request for the ship to be detained until its owners pay more than \$900 million—later lowered to \$550 million—in compensation for the costs of the salvage operations, stalled canal traffic and lost transit fees ([Hellenic Shipping News](#), May 24).

The grounding had a ripple effect through the global economy. Typically, more than 50 ships transit the canal each day, transporting roughly 12 percent of world trade and 8 percent of its liquefied natural gas (LNG), along with one million barrels of oil ([Caixin](#), April 5, 2021.) The Suez Canal is the most important trade corridor linking Asia with Europe and the U.S. East Coast and disruptions can affect the economies of these regions. While hundreds of vessels idled *in situ* for the canal to be cleared, some ships with time-sensitive

cargoes were forced to take the longer route around South Africa's Cape of Good Hope, requiring additional fuel and added costs.

### **The Suez Canal's Significance to China**

The Suez Canal opened in 1869 and is the shortest maritime route linking Asia and Europe, cutting travel time between the two continents by as much as 10 days and 6,200 miles (10,000 kilometers) compared with circumnavigating Africa. But with an average width of 672 feet (205 meters), the canal faces increasing challenges to accommodate gigantic vessels like the *Ever Given* as container ships grow bigger and bigger, with the largest already capable of carrying 24,000 containers.

In addition to the Suez Canal, the Middle East also hosts three additional strategic maritime channels for Chinese maritime trade—the Bosphorus and Dardanelles (the Turkish Straits), the Bab el-Mandeb that unites the Red and Arabian seas and the Hormuz Strait, connecting the Persian Gulf with the Indian Ocean, through which much Chinese seaborne trade passes. Over 60 percent of Chinese goods shipped to Europe pass through the Suez Canal, and Chinese ships account for around 10 percent of the Suez's annual traffic volume ([Global Times](#), March 24). According to Suez Canal Authority data, in 2019 more than one billion tons of cargo worth \$9.6 billion passed through the Egyptian waterway every day, or roughly four times the tonnage transiting through the Panama Canal ([Arab News](#), March 26).

The Suez Canal also has military significance for China. Building upon earlier bilateral Russian-Chinese naval maneuvers undertaken in the Yellow Sea in 2012, the East China Sea in 2014, and the Sea of Japan in 2014, in May 2015 the Chinese *Linyi* (临沂) and *Weifang* (潍坊) Type 054A missile frigates transited the Suez Canal and entered first the Black Sea before shifting to the Mediterranean to deploy with Russian warships in the Sea Cooperation-2015 maritime exercise ([Aif.ru](#), May 17, 2015; [Military Reporter](#), May 11, 2015).

As China's maritime commerce in the volatile Middle East has grown, a more permanent regional naval presence has been instituted to provide security. In 2017, China opened its first overseas military base in Djibouti on the Red Sea at a cost of \$590 million to participate in international antipiracy operations off Somalia. Regarding the base on Djibouti, the Chinese Ministry of Defense has said, "It mainly provides effective guarantee for China's participation in escort, peacekeeping, humanitarian rescue and other missions in Africa and West Asia. It is also conducive to China's better implementation of military cooperation, joint exercises and training, and evacuation of overseas Chinese" ([PRC Ministry of Defense](#), July 11, 2017). Chinese military authors have discussed the value of overseas "strategic strong points," and the ability to protect China's overseas interests are an intrinsic element of Chinese Communist Party (CCP) General Secretary and Chairman of the Central Military Commission (CMC) Xi Jinping's call for the PLA to become a "world class military" by the mid-century (China Brief, [October 19, 2020](#); [January 12](#)).

Given both rising U.S. skepticism about Chinese intentions and the fact that ports are inherently “dual use” facilities that can be used for both military and civilian purposes, questions have been raised about the true motivations behind recent upgrades of the Chinese military’s Djibouti facilities. On April 20, U.S. Africa Commander Army General Stephen Townsend told the House Armed Services Committee that the People’s Liberation Army was expanding its existing naval installation adjacent to a Chinese-owned commercial deep-water port, remarking, “Their first overseas military base, their only one, is in Africa, and they have just expanded that by adding a significant pier that can even support their aircraft carriers in the future. Around the continent they are looking for other basing opportunities” ([U.S. Africom](#), April 20, 2021). In his testimony, Townsend downplayed the significance of the U.S. Naval Expeditionary Force base (which also houses British military personnel) next to Djibouti-Ambury International Airport and also did not mention that Djibouti hosts several other foreign military bases, including the French Air Force Base, the Italian Support Base and the Japanese Self-Defense Force Army Base.

### Implications for the New Silk Road

While the Suez blockage underlined the potential vulnerability of global maritime transport it also highlighted the value of China’s multi-vector transport export approach, first outlined in its 2013 “One Belt, One Road” (now renamed the Belt and Road Initiative) strategy, and particularly its reliance on a burgeoning Eurasian rail network (i.e., the Belt).



Image: A map of China’s “Belt and Road” infrastructure and transit development strategy, with the Silk Road Economic “Belt” outlined in red and the 21st Century Maritime “Road” depicted in blue dots (Source: [Belt and Road Morning Post](#)).

Trading concerns in Europe, the Middle East and Asia quickly understood how potentially disruptive the closure of the Suez Canal for an indeterminate period could be, resulting in a search for alternatives as soon as the extent of the problem was identified. For time-critical delivery and price-sensitive goods, rail transport by any of the New Silk Road routes became the most feasible alternative solution, ahead of air and road freight.

Although the transportation cost of China-Europe Express rail transport is 50 percent higher than maritime cargo, it is still much lower than comparable air freight costs ([Sina](#), March 31). The volume of Eurasian rail transport has consistently risen, and last year China surpassed the U.S. to become the European Union's largest trading partner. In the past eight years, the volume of rail exports from China surged, with 12,400 trains sent last year—50 percent higher than in 2019 and seven times the number dispatched in 2016, according to Chinese authorities ([PRC Foreign Ministry](#), May 20).

In the first quarter of 2021, the number of China-Europe freight trains increased by 15 percent year-on-year, following 2020's 50 percent year-on-year growth over 2019 levels ([Sina](#), May 31). European-bound trains with Chinese exports now depart a Chinese city every hour on average, while China-bound European trains head eastwards every two hours. Around half utilize the Trans-Siberian Railway route, and the other half transit through post-Soviet Central Asia ([China Daily](#), June 1, 2021). Unlike maritime exports, the goods transported along Eurasian "interior lines" are immune from any potential hostile maritime action in increasingly contested regions such as the South China Sea, Arabian Sea or Persian Gulf.

According to the Hong Kong-based U-Freight CEO Simon Wong, the *Ever Given* incident increased demand for both "less than container load" (LCL) and "full container load" (FCL) cargo and made rail shipping look "all the more attractive. ...Clearly, supply chain planners are reappraising the once-dominant Suez Canal route from China to Europe, with intermodal rail continuing a sharp upward trajectory following a strong 2020. The Covid pandemic and capacity problems in the air and ocean sectors have pushed the route to much heavier usage—the recent blockage of the Suez Canal leading to additional traffic" ([The Loadstar](#), May 5, 2021).

The Suez Canal blockage has combined with the economic effects of the Covid-19 pandemic and a shortage of 40-foot TEU (Twenty-foot Equivalent Unit) shipping containers to push their rental to the highest rate in a decade. According to the British international logistics consulting company Drewry Supply Chain Advisers, the current Shanghai-Rotterdam 40-foot container freight rate has risen above \$10,000 for the first time and is now \$10,174, an increase of 3.1 percent from the previous week and a year-on-year increase of 485 percent, while the global World Container Freight Index (WCI) has risen to \$6,257, an increase of 293 percent from 2020 ([Yicai](#), May 31).

Given maritime shipping's lower cost differential and greater efficiency compared to other transport modes, the vast majority of Chinese exports will likely continue to be transshipped by sea. The largest container ships

can carry the equivalent of over one hundred train loads. But although the recent incident in the Suez Canal illustrates that navigating the seas may have challenges, impediments to rail transport, such as national borders, gauge differences and border congestions are not among them.

### **Conclusion**

While global oceanic trade is flowing again, China's economy will continue in the short term to be impacted by events unrelated to maritime commerce. Rising concerns about forced labor in Xinjiang and the deterioration of democracy in Hong Kong, allied with growing suspicions about technology transfers and Chinese protectionism could result in severe economic consequences beyond possible sanctions in the year that the CCP celebrates its centenary. Amid such "changes unseen in a century" (百年未有之大变化, *bainian weiyou zhi da bianhua*), President Xi Jinping has decided that China needs to redefine its international image; on May 31 Xi told senior CCP Politburo officials it was important to present an image of a "credible, loveable and respectable China" and that it was important for China to tell its story in a "positive" manner ([CCTV](#), May 31). The *Ever Given's* Chinese cargo represents China's growing role in the global economy, even as criticism mounts over its domestic and foreign policies. As to the question of whether President Xi will succeed in his efforts to build China into "strong, democratic, civilized, harmonious and modern socialist country" and global superpower by 2049, the only certainty is that it will be more difficult than clearing a container ship from the Egyptian sands.

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