

The Silver Lining in China's Worst Flood in Decades

By LI Yao and Sarah Y TONG

Few would have contested the statement that 2020 is a year of anomalies for China. In much of the first six months, the country was fighting a tough battle against a pandemic which brought huge losses in human lives and devastating economic outcome worldwide. Hardly has the Chinese leadership heaved a sigh of relief with the tapering of coronavirus cases in the Mainland that much of China's Yangtze River Basin (Figure 1), a major centre for China's economic activities including agricultural production, has since June 2020 been hit with the deadliest of floods in decades. The months of torrential downpour had brought cumulative rainfall to a level that has far surpassed those recorded in the 1998 floods, making this year's flood China's worst deluge in the past 50 years. The concern is whether the disastrous floods would considerably hinder China's road to post-COVID economic recovery.

FIGURE 1 AREA WORST-HIT BY FLOODING IN CHINA, 2020



Source: Straits Times Graphics (<https://www.straitstimes.com/asia/east-asia/xi-urges-all-out-efforts-to-save-lives-assets>, accessed 17 August 2020).

Why the Huge Concern?

At a time when the global economy is looking at China as a possible engine to put its economy back on track, news of China's 2020 floods have thus caught worldwide attention. First, China is already facing mounting challenges to revitalise its economy amid deteriorating domestic and international environment. Any new blows would jeopardise the fragile recovery.

The COVID-19 led to a sharp fall in China's first quarter economy due to strict mobility restrictions that disrupted production and consumption activities.¹ In the first two months of 2020, the outputs of China's industrial and service sectors, as well as investment, registered double-digit contractions. Although the economy managed to get its engine moving, with a modest year-on-year GDP (gross domestic product) growth of 3.2% in the second quarter, the risks remain.

New waves of the epidemic risk have renewed lockdowns in several cities in China. Following the second round of clustered cases in Beijing in June, Xinjiang and Dalian became new centres for recurring COVID-19 cases in July.² Meanwhile, the global pandemic has yet to be brought under effective control. By 10 August 2020, global COVID-19 cases totalled 20 million with more than 728,000 deaths according to Johns Hopkins University. Uncertainties on the fight against the pandemic, domestically and globally, may further dampen investor sentiments, curb consumer spending and threaten the already fragile recovery of China's economy.

An increasingly hostile external environment is also weighing down hard on China's economic recovery. China-US relations continue to worsen over disputes on the origin of the global coronavirus pandemic, China's perceived stronger posture on the South China Sea issues and bilateral trade surplus. The promulgation and implementation of the Hong Kong National Security Law soured China's relations with the United Kingdom and several countries in the European Union. China may face growing difficulties in its outward economic activities such as exports, direct investment abroad and financing in the international capital market.

Second, China's 2020 floods have broken many historical records: the long rainy season started earlier, lasted longer and recorded much heavier precipitation, particularly in a number of places with extremely heavy rainfall. While the Yangtze River Basin traditionally records long rainy (*Meiyu*, 梅雨) seasons with heavy rainfall, the middle and lower reaches of the Yangtze River entered the rainy season five days earlier than usual on 9 June. From 1 June to 1 August, the Basin registered 62 days of rain versus 40 days in a normal year in the past. According to China's National Climate Centre, the average rainfall in the *Meiyu* area this year was 759.2 mm, or 221.1% of the normal rainfall (343.4 mm), the highest since 1961.³ During this period, the Central Meteorological Observatory of China issued a total of 52 days of rainstorm warning, 41 of which were consecutive. The two marked the longest on record since the rainstorm warning system was launched in 2007.

¹ For more discussion, please refer to Sarah Y Tong and Li Yao, "The COVID-19 Outbreak and Its implications for China's economy", *EAI Background Brief*, No. 1522, 31 March 2020.

² For more details, please refer to <http://www.chinanews.com/gn/2020/07-31/9253409.shtml>, accessed 4 August 2020.

³ For more details, please refer to <http://env.people.com.cn/n1/2020/0806/c1010-31812692.html>, accessed 15 August 2020.

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Heavy daily or monthly rainfall was also reported in many sub-regions of the Yangtze River Basin. For example, the daily rainfall of 14 counties (cities) including Jinzhai (309.5 mm) in Anhui and Jianshi (262.2 mm) in Hubei exceeded their highest daily record, and 57 counties (cities) broke their highest monthly record. As of 11 August, 63.46 million people in 27 provinces, autonomous regions and municipalities reported direct economic loss totalling RMB179 billion as a result of China's floods in 2020⁴ (Table 1).

TABLE 1 COMPARISON OF FLOODS IN SELECTED YEARS IN CHINA

Year	1998	2016	2020
Flood Period	Middle June-Early September	June-July	June-11 August
Number of Impacted Provinces	29	29	27
Seriously Impacted Provinces	Jiangxi, Hunan, Hubei, Anhui, Heilongjiang, Jilin, Inner-Mongolia, Fujian, Guangxi, Sichuan and Chongqing	Jiangsu, Anhui, Jiangxi, Henan, Hubei, Hunan, Guangxi, Chongqing, Sichuan, Guizhou and Yunnan	Chongqing, Jiangxi, Anhui, Hubei, Hunan, Jiangsu and Zhejiang
Impacted Farmland	21.2 million Hectares	5.2 million Hectares	5.28 million Hectares
Impacted Persons	223 Million	61 Million	63.46 Million
Death and Lost Persons	4,150	671	219
Damaged Houses	6.9 Million	0.316 Million	0.054 Million
Economic Loss (Direct Value Estimate)	RMB166 Billion	RMB213 Billion	RMB179.0 Billion
Economic Loss (Share of GDP)	1.90%	0.30%	0.21%

Source: Ministry of Emergency Management of PRC.

Apart from the loss of lives and property, the floods had dealt a devastating blow to the local economies particularly in four provinces and one provincial level municipality along the Yangtze River: Chongqing, Hubei, Hunan, Jiangxi and Anhui. In 2019, the GDP of the five accounted for 17.26% of China's total GDP. If two other less seriously impacted (but still badly affected) provinces, Jiangsu and Zhejiang, are included, the Yangtze River region's contribution would be one third of China's GDP in 2019. The region's importance to China's economy is obvious.

While the region's main economic drivers are still secondary and tertiary industries, it is an important and traditional source of agricultural products for China. The shares of agricultural output in GDP for Hubei, Hunan, Jiangxi and Anhui are all higher than the national level. The 1998 and 2016 floods show that agriculture (the primary industry) was the most impacted sector as China's flood fighting strategy is, if necessary, to discharge flood to farmland and secure cities with greater population density and more industry facilities. The devastation on agriculture often led to soaring prices, thereby raising the consumer price index significantly after the flood.

From end May to the third week of July, weekly pork price data provided by the Ministry of Commerce saw national average pork price surge for eight consecutive weeks with a total

⁴ For more details, please refer to http://www.gov.cn/xinwen/2020-08/13/content_5534534.htm, accessed 13 August 2020.

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increase of 27.1%. While pork prices increase seasonally from June to September every year due to the production cycle, the recent continuous downpour in the Yangtze River region has hampered the transportation of live pigs and pork, dampening supply and causing a greater surge in pork price than in most years.

The interruption in supply is also evident for agriculture products, such as animal and vegetable oil, cotton and so on. For agricultural products that have a longer production cycle, the disruption could be protracted. Construction is also in a standstill. As the six provinces and one provincial level municipality mentioned earlier contributed about 31% of China's output in the construction sector in 2019, a chain reaction is expected in its subsidiary sectors, such as steel and cement. Data from China Cement Network shows that since May 2018, the daily cement price index in the Yangtze River Basin had been higher than the national level. However, the reverse was true since 8 July 2020 when flooding from the Yangtze River overtopped its banks.

The ban on navigation in the Yangtze River has also hit these sectors which are heavily reliant on water transportation. The impact was also felt for producers of heavy household products, such as laundry detergent, shampoo and so on, and light protective gears needing large transportation space such as masks. While the transport interruption can also impact their supply chain in this part of China, the supply shortage for China as a whole would not be long given that production of these products in other regions could make up for the temporary shortage.

China's Response to Floods

As China is not new to deadly floods, with the most recent in 1998, responding to floods is easier for China than responding to the epidemic and the deterioration of the international environment. First, China has readied itself with 312,000 kilometres of dikes, 5,98,000 reservoirs, 104,000 sluices and 98 national-level flood storage and detention areas, which have greatly enhanced its flood resistance capability.⁵

The average annual number of deaths caused by floods in China has dropped from about 8,000 in the 1950s to about 800 in the past decade. The total amount of assets per unit of flood control area has increased significantly with the development of the overall economy, resulting in a corresponding increase in the absolute value of direct economic losses from floods (Table 1). However, Table 1 also shows that the proportion of direct economic losses to GDP had been reduced from 1.9% in 1998 to 0.3% in 2016.

This implies that the economic losses of the 2020 floods will be rather limited. To illustrate, since June 2020, the average daily coal consumption of China's six major power generation groups has remained relatively unchanged from that of the same period in 2019. The operating rate of blast furnace has also maintained at a high level since the resumption of production. The two indicators show that the 2020 floods did not cause a significant dent to China's overall industrial production.

Second, China has adopted a flood fighting strategy to discharge flood to planned spillway when necessary. Compared to the COVID-19 epidemic which broke out in large cities with dense populations and massive economic activities, the flood damage is relatively controllable and can be artificially channelled to sparsely populated places to preserve areas with

⁵ For more details please refer to http://www.xinhuanet.com/politics/2020-07/23/c_1126273306.htm, accessed 8 August 2020.

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concentrated economic activities, including industrial areas. For the 2020 floods, China's flood discharge zone once again played an important role. For example, to fight the 2020 floods, the Mengwa flood storage area in Funan and Yingshang counties of Fuyang city, Anhui province established in 1953 was used for the 16th time. It has a total area of about 180.4 square kilometres, involving four towns, 75 administrative villages, more than 170,000 people and 120 square kilometres of arable land. Another two flood discharge areas, namely, the Second Huangcao Dyke and the Third Huangcao Dyke located in Chuzhou city, Anhui province, were also used for flood storage for the fifth time during the 2020 floods.

Third, as the floods have caused serious damages to residential properties, production facilities, roads, bridges and water conservancy facilities, Premier Li Keqiang had approved flood fighting and disaster relief work at the executive meeting of the State Council on 8 July, and promised to increase material and financial support to help disaster victims and the reconstruction of flooded areas. By the end of July, the Ministry of Finance and Ministry of Emergency Management of China had allocated a total of RMB1.755 billion in central disaster subsidy funds to support flood relief and reconstruction after the disaster. The State Bureau of Grain and Material Reserves has also allocated a total of 93,000 pieces of relief supplies from the Central Disaster Relief Supply Storage to the flood area.⁶ The financial and material support for infrastructure reconstruction and economic recovery of disaster victims is expected to form both investment and consumption pulls to the damaged regions as researchers⁷ have found that the fiscal multiplier associated with disaster-relief government spending tends to be larger compared to regular government spending.

Fourth, as the floods have exposed some shortcomings in infrastructure, the investment to “make up for the shortcomings” will form another pull for infrastructure investment. The executive meeting of the State Council presided by Premier Li Keqiang on 8 July had discussed for the first time, the launch of 150 major water conservancy projects from 2020 to 2022 to promote effective investment expansion and enhance national water security capabilities. The 150 major water conservancy projects mainly cover five categories: flood control and disaster reduction, optimal allocation of water resources, irrigation water saving and water supply, water ecological protection and restoration and smart water conservancy. Total investment is estimated to be RMB1.29 trillion, including five projects at more than RMB50 billion, four projects at between RMB30 billion and RMB50 billion, and 18 projects at RMB10-30 billion.⁸ The investment in these major projects is expected to directly and indirectly drive investments of RMB6.6 trillion.

The 150 major water conservancy projects form the “One Major” part of the “Two New One Major” investment mentioned in China's 2020 Government Work Report. The “Two New One Major” investment refers to the investment in new type of infrastructure, new type of urbanisation and major projects. The new type of infrastructure investment targets new and future technologies, new business formats and new economic development directions. The new

⁶ For more details, please refer to http://www.gov.cn/xinwen/2020-07/16/content_5527192.htm, accessed 9 August 2020.

⁷ For more details, please refer to Jan Fidrmuc, Sugata Ghosh and Weonho Yang, 2015, “Natural Disasters, Government Spending, and the Fiscal Multiplier”, CESifo Working Paper Series 5665, CESifo; and Zhou, Xiaoqing, 2017. “Multiplier Effects of Federal Disaster-Relief Spending: Evidence from U.S. States and Households”, available at SSRN, <https://ssrn.com/abstract=2928934>, accessed 15 August 2020.

⁸ For more details, please refer to http://www.gov.cn/zhengce/2020-07/26/content_5530073.htm, accessed 10 August 2020.

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type of urbanisation investment aims to improve public facilities and services in counties so as to meet the growing demand of rural residents.

The investment in the new type of infrastructure and new type of urbanisation has real market demand. Under the influence of market demand and industrial development trends, the development of 5G, artificial intelligence and industrial internet as well as the public facilities and services supply at county level can be relatively fast and successful. The role of government investment in these fields is simply to guide and support. However, for major water conservancy projects, due to the huge scale of investment and strong externalities, the leading role of government investment in these fields is necessary. Therefore, the fiscal multiplier of government investment in major projects is also likely to be huge.

On an optimistic note, the downpour for the middle and lower reaches of the Yangtze River had stopped as of 29 July according to the China Meteorological Administration.⁹ The rain belt in eastern China has moved northwards, and the 2020 heavy rainfall concentration period in the middle and lower reaches of the Yangtze River is over. Meanwhile, flooding in the Yellow River Basin has continued since August, albeit at a less serious rate as that in June to July. The overall damages caused by China's 2020 floods are by and large under control and limited. However, efforts to prevent further damage from floods remain challenging as rainfall remains strong in the upper reaches of the Yangtze River (especially in Sichuan province since the week of 10 August 2020) and in northern China. Nonetheless, China has withstood the shocks from the worst flood in decades with limited damage. The road to economic recovery is still rocky and there is a necessity for the country to press on.

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⁹ For more details, please refer to <http://env.people.com.cn/n1/2020/0729/c1010-31802918.html>, accessed 4 August 2020.