

# What's behind China's record floods?

August 20 2020, by Jing Xuan Teng

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China has touted its massive dam network as a remedy for its devastating annual floods, but record deluges have once again killed hundreds of people and submerged thousands of homes this year.

Millions of people have been affected this time—with hundreds of

thousands evacuated, roads submerged, tourist sites closed and soaring economic costs.

Here are five questions about why China still endures severe flooding every year.

## **Do the dams work?**

China has historically relied on dams, levees and reservoirs to control and divert the flow of water.

From June to early August, around 30 billion cubic metres of floodwater were intercepted by dams and reservoirs in Asia's longest river, the Yangtze, mitigating flooding downstream in areas including Shanghai, China's emergency management ministry said.

But the country's vast infrastructure has been unable to contain all the flooding, with authorities in the eastern city of Chuizhou, Anhui province, forced to blow up two dams last month to release water from the rising Chuhe river over cropland, state broadcaster CCTV reported.

And fears re-emerge periodically over the structural integrity of the Three Gorges Dam on the upper Yangtze, the world's largest hydroelectric dam, built in an area criss-crossed by geological faultlines.

## **What impact is climate change having?**

The burden on China's dams is likely to grow as climate change makes [extreme weather events](#) more common.

As the Earth's atmosphere gets warmer, it holds more moisture, making downpours more intense, Benjamin Horton, director of the Earth Observatory of Singapore, told AFP.

Water levels reached historic highs in 53 rivers this summer, according to China's ministry of water resources.

Authorities warned this week that the Three Gorges Dam is facing the largest flood peak since it began operating in 2003.

Heavy rains are set to send 74,000 cubic metres of water per second rushing into the Three Gorges reservoir, the official Xinhua news agency reported.

"This summer's floods ring an alarm bell for China that climate change is here," Li Shuo, a climate analyst for Greenpeace East Asia, told AFP.

## **Could 'sponge cities' help?**

The country's rapid development and breakneck urbanization has also exacerbated flooding.

Urban sprawl has covered more and more land in impermeable concrete—increasing the risk of rapid water buildup on the surface during heavy rain.

Horton also said that some of the country's big lakes have been drastically reduced in size.

One of the solutions proposed by the government has been the "sponge city" programme that began in 2014.

It seeks to replace impermeable urban surfaces with porous materials like permeable pavements, more [green spaces](#), drainage areas and reservoirs to stop water accumulating on the ground.

"The objective is that stormwater goes into drains or the green areas, and

affects the built areas less," Cecilia Tortajada, a researcher of water policy at the National University of Singapore, told AFP.

## **Who suffers the most from flooding?**

But sponge cities will be little consolation for rural communities in the path of diverted water, which have suffered severe damage to their homes and crops.

"While urban dwellers in China's megacities are largely spared from the rising [water](#), much of the country's hinterlands along the Yangtze River were put on the frontline," Li said.

Entire villages are routinely allowed to flood, with residents evacuated, in order to spare densely populated cities.

Over the last week more than 165,000 hectares of crops were damaged in severe flooding in Sichuan, officials said.

The Mengwa Flood Diversion Area, home to four townships and nearly 200,000 people, was inundated after officials ordered the opening of 13 sluice gates on the Huaihe river in July, state media reported.

## **What more can be done?**

China is also turning to increased flood surveillance and early evacuation to mitigate the human cost of flooding.

In addition to conventional weather monitoring technology, Anqing city in China's Anhui province is using virtual reality goggles linked to river-monitoring cameras that use 5G internet to transmit images to inspectors, according to Xinhua.

The number of people dead or missing as a result of flooding from June to early August this year fell to 219—less than half the average figure each year in the past five years, the ministry of emergency management said last week.

However, the economic costs of flooding have soared 15 percent this year, reaching 179 billion yuan (\$26 billion), officials said at a press conference this week.

Tortajada said that ultimately, flood prevention will also require global action against [climate change](#).

"While countries are getting better prepared, the world as a whole is not prepared," she told AFP.

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