



Flood Disaster Characteristics and Coping Strategies under Changing Environment

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Content

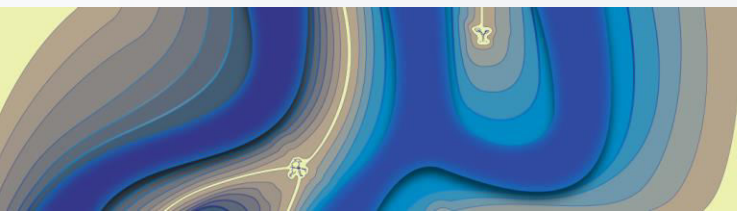
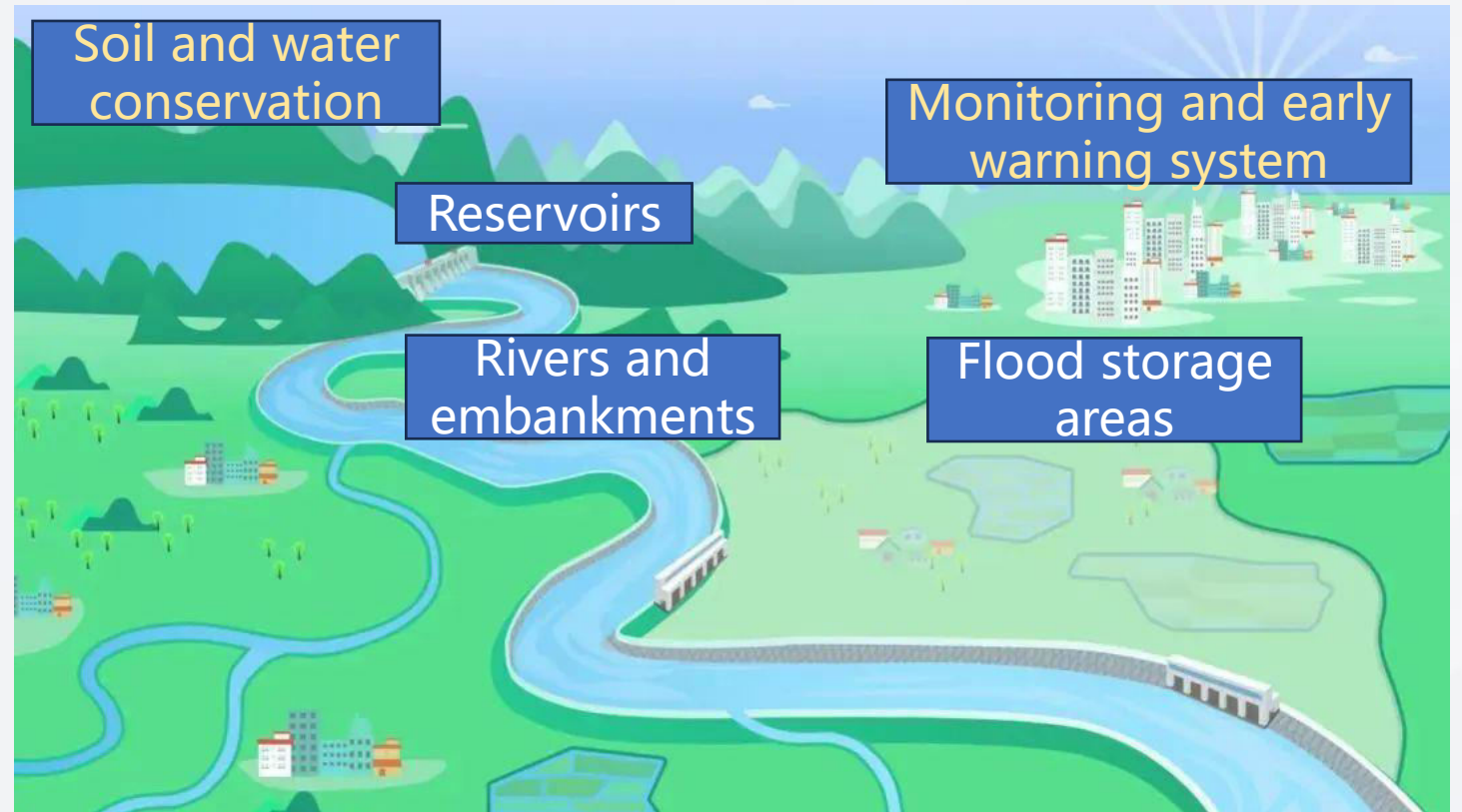
- **Achievements in flood control**
- **Changing environment**
- **China's flood control strategies**

Achievements in flood control

After the Establish of PRC, the General Ideas of flood protection is :

- reserve water at upstream
- hold up water at middle stream
- drain water at lower stream

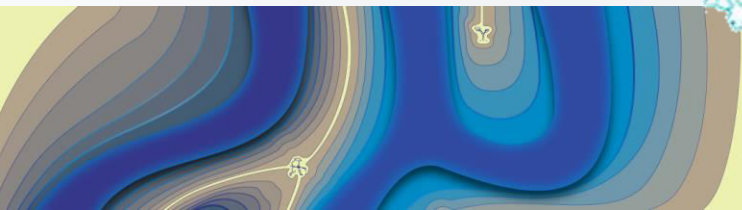
The major rivers in China have basically formed a flood control system of reservoirs— rivers and embankments— flood storage areas engineering measures and non-engineering measures.



Achievements in flood control



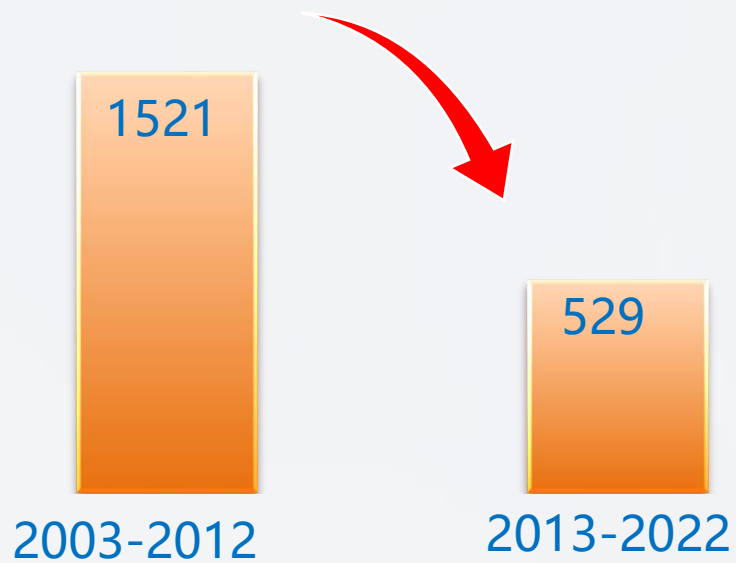
- The major rivers have the ability to defend against the largest floods since the founding of PRC.
- The important cities can defense the once-2-centuries-flood.



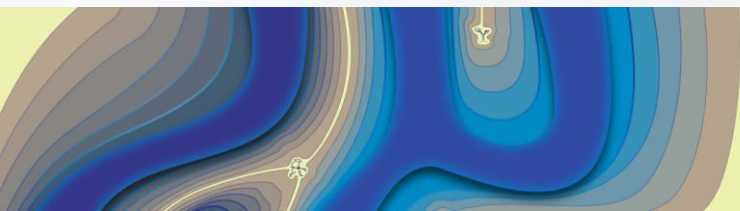
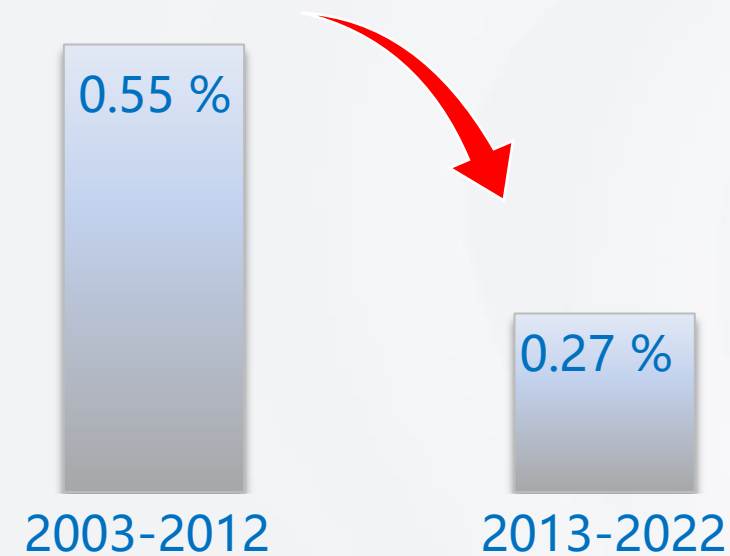
Achievements in flood control

- China has achieved remarkable progress and benefits in flood control and disaster reduction.

the average annual number of
deaths and missing persons due to floods

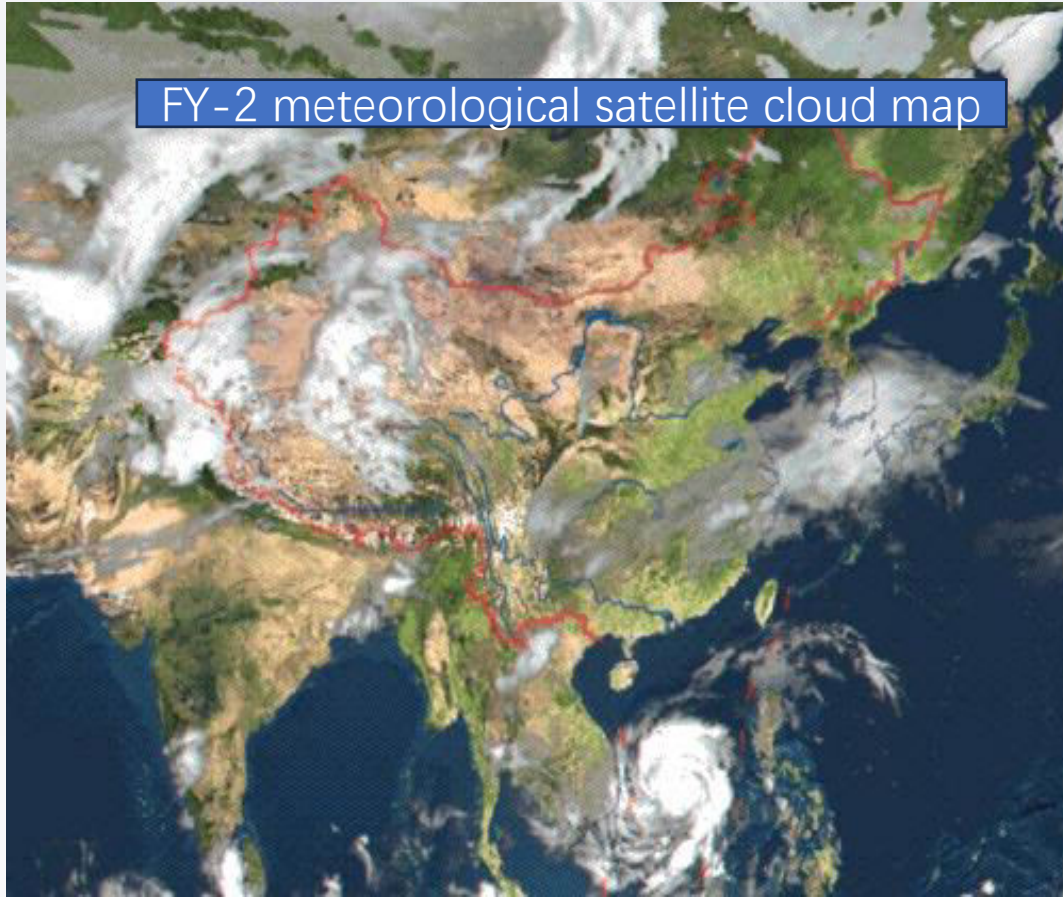


the average annual loss rate
of flood disasters

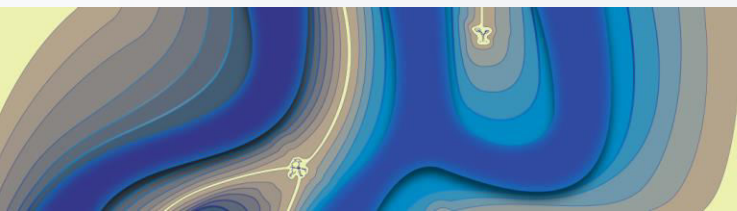


Changing environment

- China is a sensitive and significant impact area of global climate change



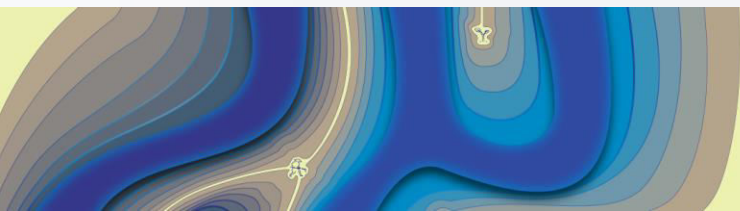
In recent years, global climate change has led to an increase in extreme weather such as local heavy rainfall and super typhoons. Basin-wide floods and basin-wide extraordinary floods occur from time to time.



Changing environment —new characteristics of flood disaster

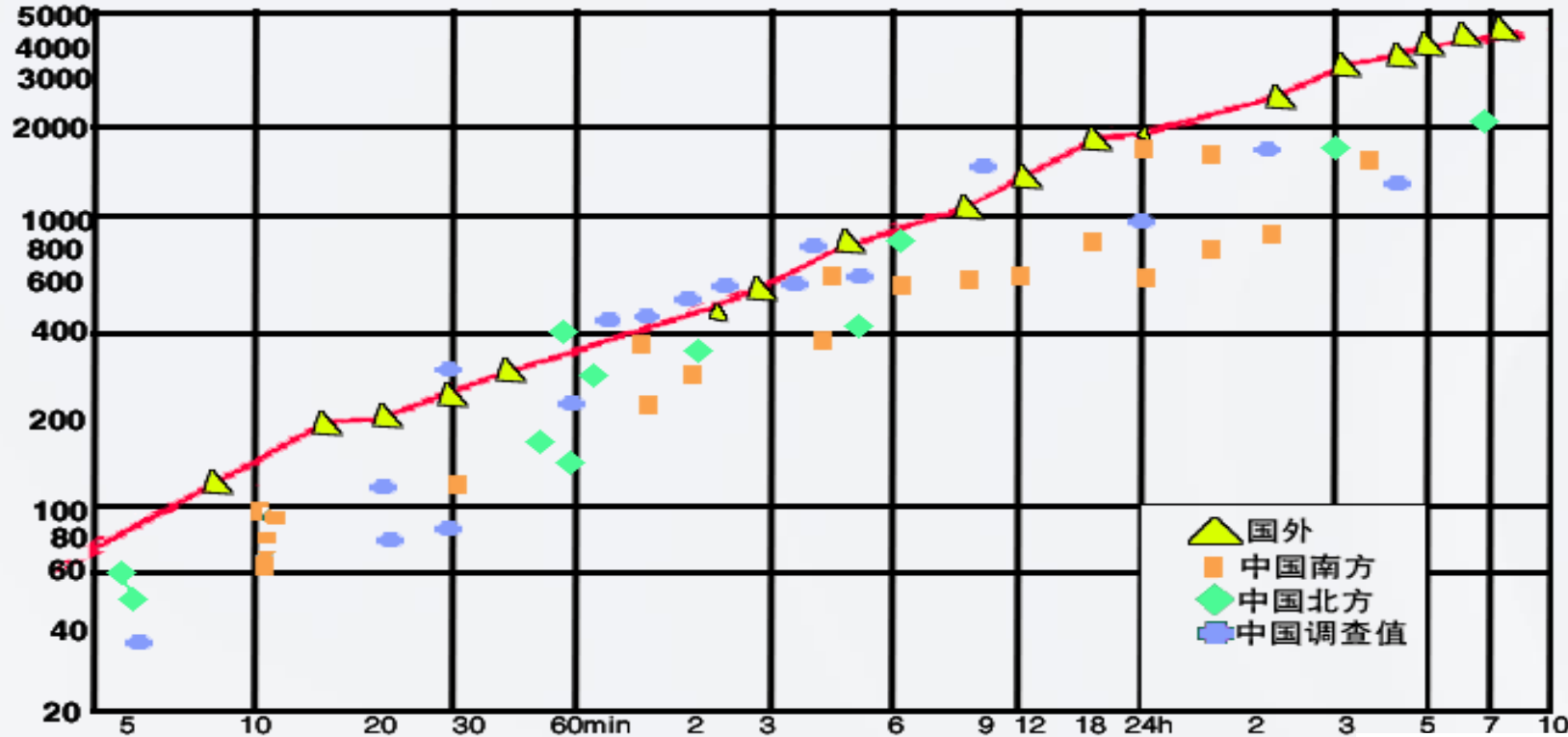
Firstly, the frequency of flood disaster events has increased significantly.

- Yangtze River Basin: 2010, 2016, 2017, 2018 and 2020
- Yellow River Basin: 2011, 2019, 2020, 2021
- Huaihe River Basin: 2003, 2007, 2020
- Haihe River Basin: 2012, 2016, 2021, 2023
- Songhua River Basin: 2010, 2013, 2021, 2023
- Liao River Basin: 2022
- Pearl River Basin: 2022
- Taihu Lake Basin: 2016, 2020



Changing environment —new characteristics of flood disaster

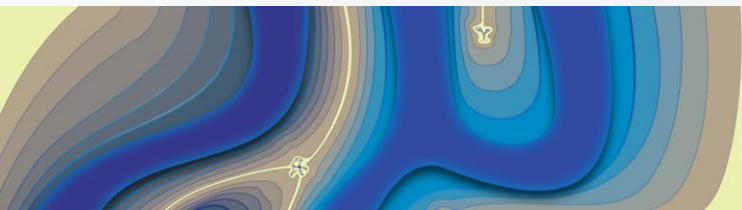
Secondly, the intensity of extreme disaster events has increased



Rainfall
(mm)

- exceed the local historical extremes
- close to world record

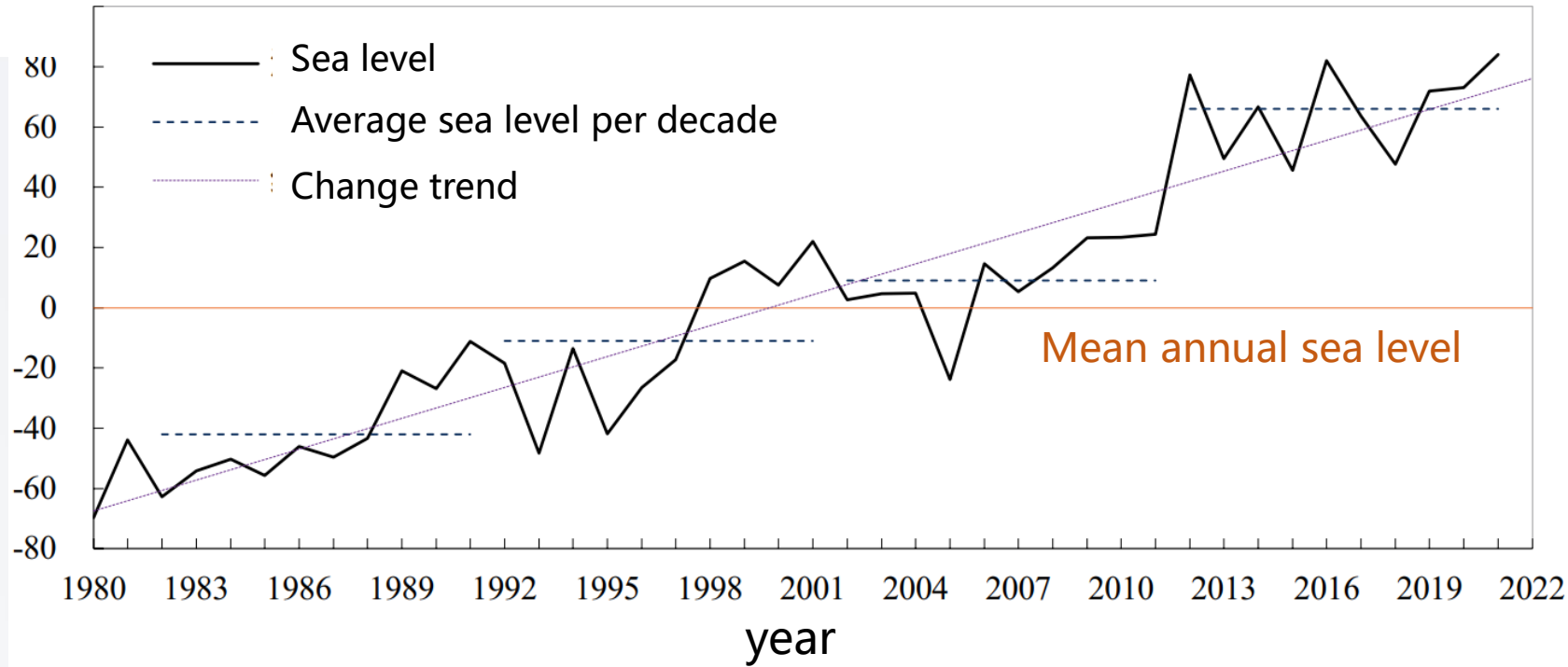
Comparison of China and the world's largest rainfall duration



Changing environment —new characteristics of flood disaster

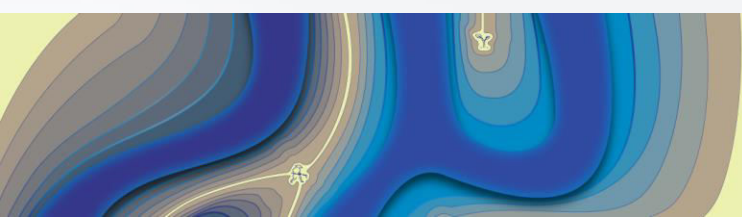
Thirdly, sea level rise affects flood control security

change
value



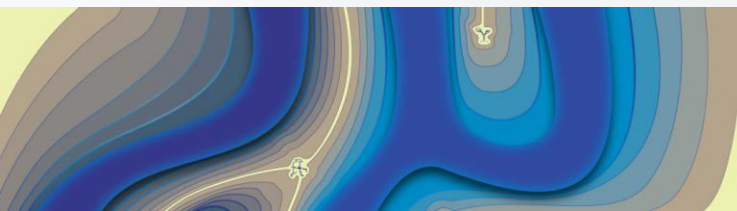
Sea level changes in China 's coastal areas

During the typhoon ' fireworks ' in 2021, the upper reaches of the Huangpu River experienced a super-historical high tide level, which brought severe challenges to the flood control of the basin and the region



Changing environment —new characteristics of flood disaster

Fourthly, under the over-standard load of extreme weather, the hidden dangers of the projects broke out intensively, and the projects crashed some times.



China's flood control strategies

General Aims:

Put the people and their lives above all else

General floods

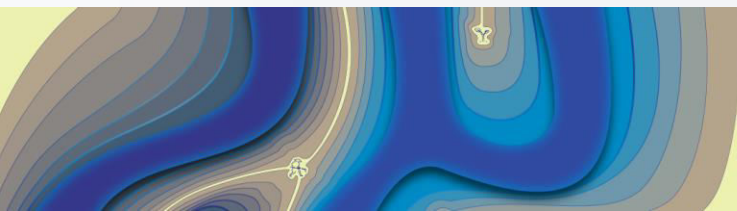
- Ensure the people's life and properties away from losses

Target floods

- Ensure the safety of life and the normal economic activities of the country

Over-standard floods

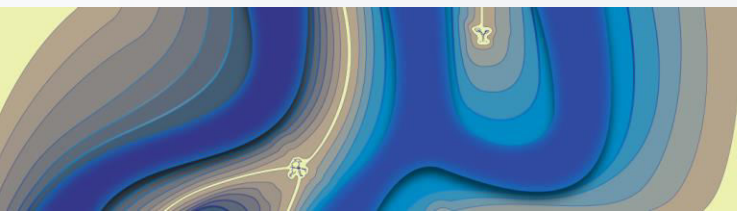
- No unrest in national sustainable development process
- No any significant Interferes in building a modern socialist country process



China's flood control strategies

Main measures:

- **adjust the construction standards of flood control system and improve the resilience**
- **reserve appropriate engineering capacity redundancy**
- **improve the monitoring and early warning system**
- **promote inter-departmental coordination and cooperation**
- **enhance the socialized management capacity of disaster prevention and reduction**



Thank you for your attention

