

XVIII World Water Congress, Special Session: Implementing the 2030 Sustainable Development Agenda - Sustainable Water Resource Utilization and Green Development in Hunan, Sept.12, 2023

Great protection of Yangtze River and Green Development

**- An Excellent Demonstration on Good Water Governance
in Chenzhou, Hunan**

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Outline



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02 Chenzhou's demonstration

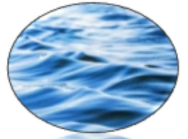
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1. Great protection of Yangtze River



Yangtze River is called as China 's mother river, which plays a key role on socio-economic development in the China



33% Freshwater in China

Total WR reaches to 995.8 BCM



33% Food product in China

Jiangnan plain area



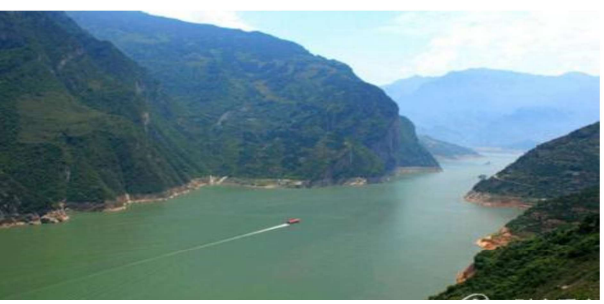
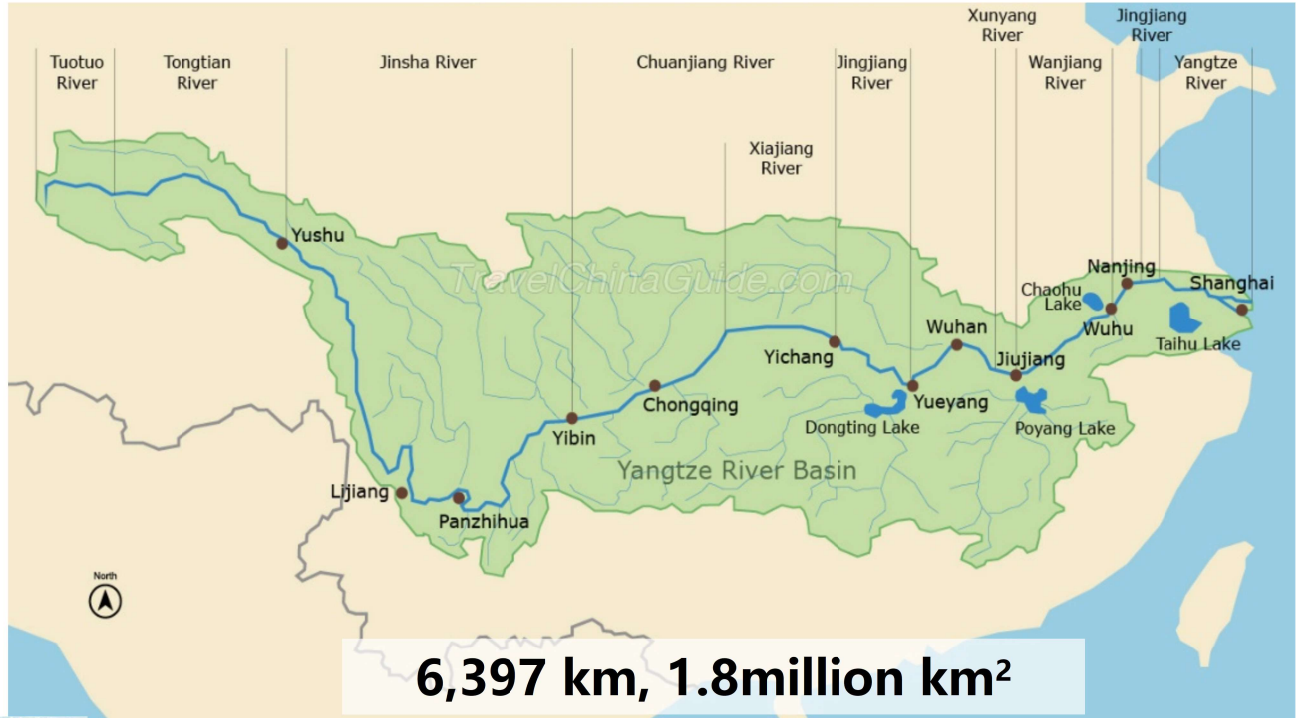
40% Population in China

450 million



40% GDP in China

9 Provinces + 2 Megacities



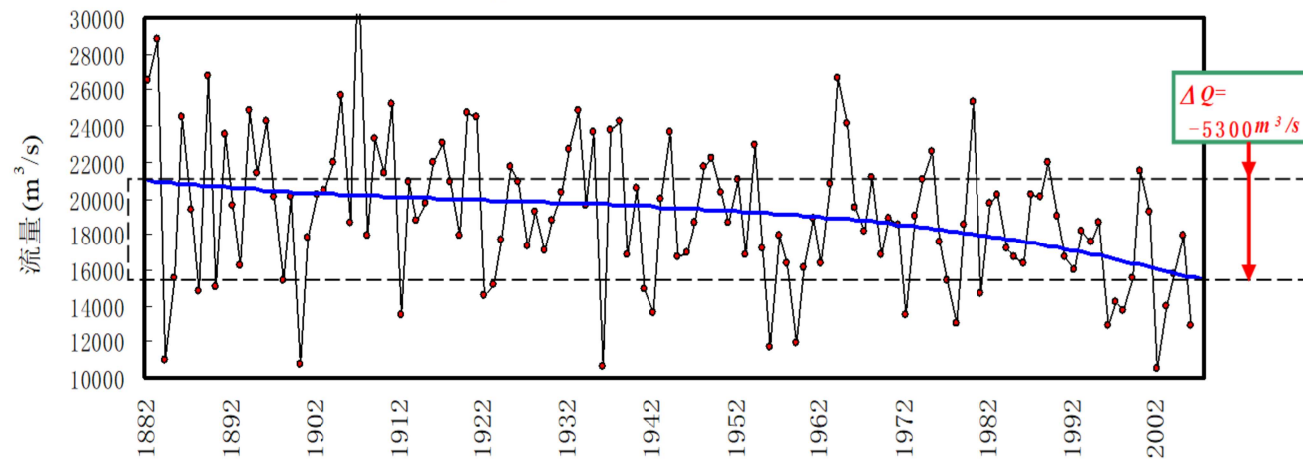
1. Great protection of Yangtze River



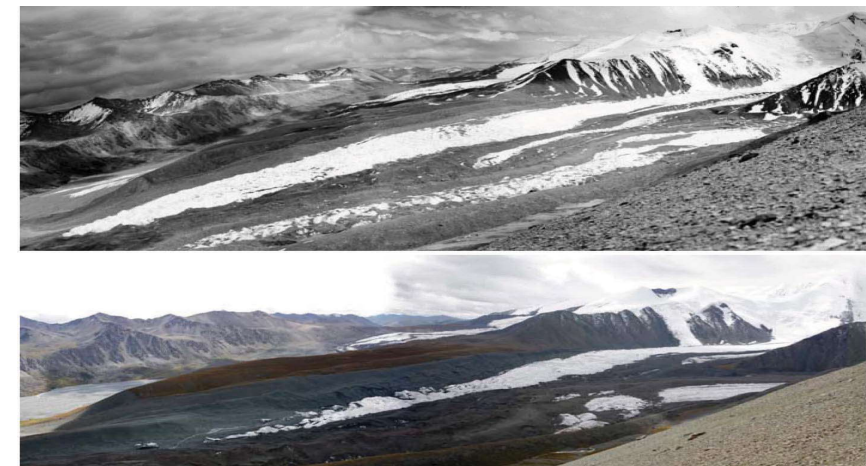
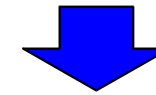
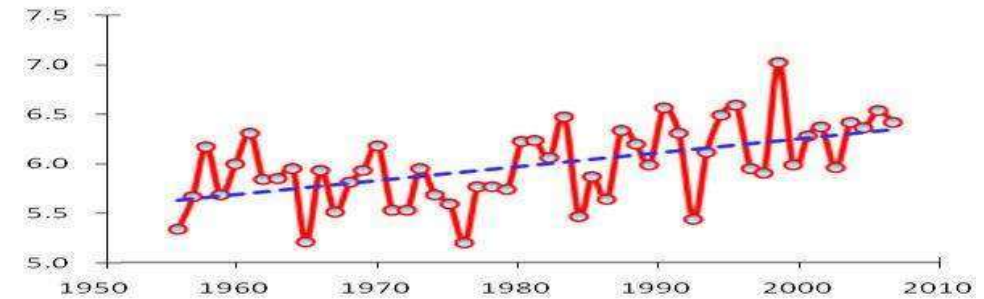
However, it faces to big challenges from changing environment

1) Climate Change Impact

- ◆ Air temperature rising, which results in degradation of frozen soil layer in the upstream
- ◆ Total runoff at Yichang has decreased by **49 billion m³** relative to



Variations in air temperature

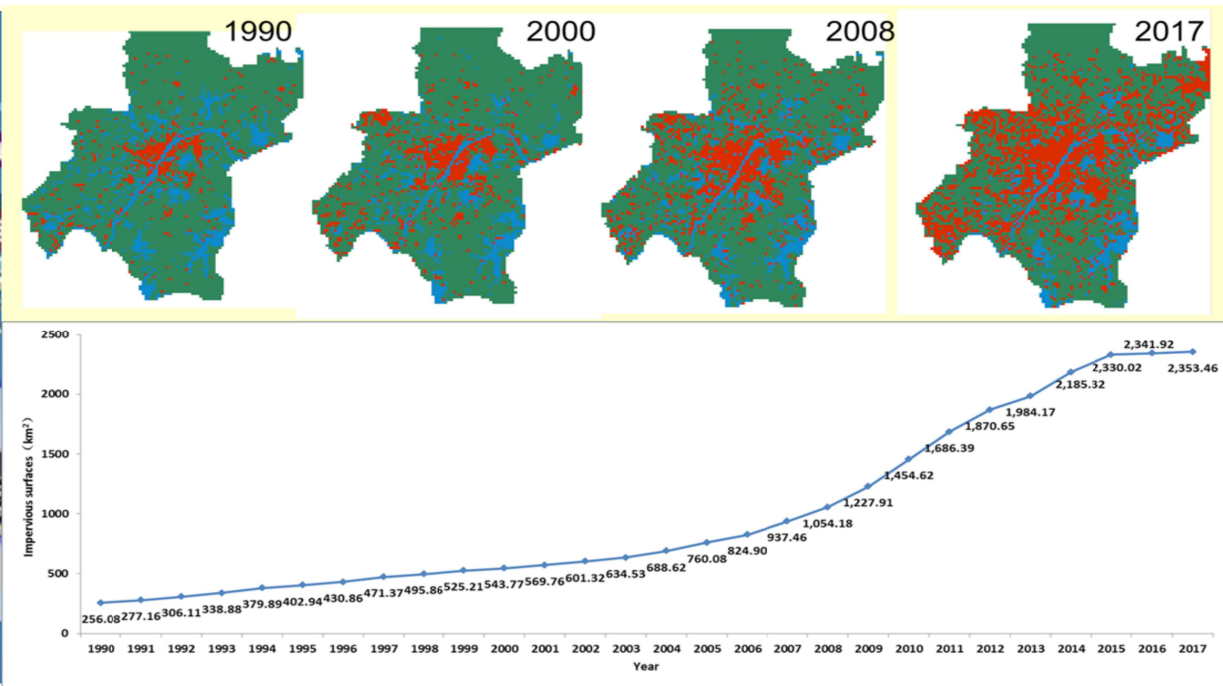


Piao et al., 2010 Nature

1. Great protection of Yangtze River



2) Remarkable Land Use & Cover Change(LUCC) due to rapidly social-economic development

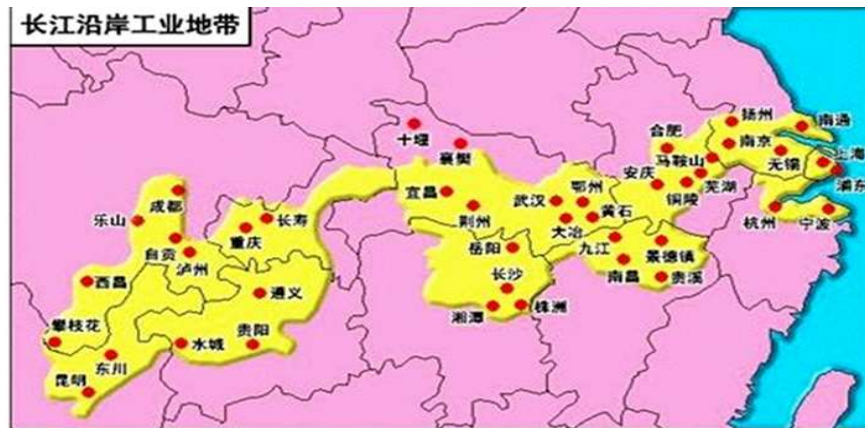


Yangtze River Economic Belt and urban agglomeration in upper-Change of the impervious area in Wuhan City, China stream, middle-stream and down-stream (Shao Z F., 2017)

1. Great protection of Yangtze River



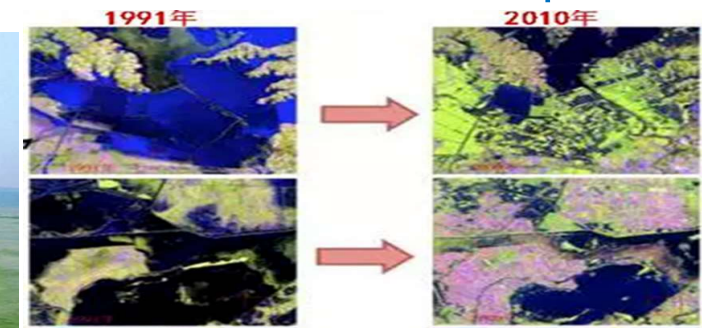
So, contradiction between socio-economics development and ecological & environmental protection is rather remarkable



Industrialization

Urbanization

Mine development



It leads to serious ecological and environmental problems

1. Great protection of Yangtze River



Challenge 1 : How to coordinate the contradiction between development and protection in YR Basin ?

Great Protection & Green Development of the Yangtze has been addressed by President, **Xi Jinping**, China Government since 2016. **This has become a big issue for China sustainable development**



Green Development is a term to describe the effort to go about the process of developing model for a river system in a manner that takes into account the environmental and ecological needs of that community

1. Great protection of Yangtze River



The **Yangtze River Protection Law**, was passed at the 24th Standing Committee session of the **13th National People's Congress** on Dec.27, 2020, which contents 9 chapters, a total of 96 articles, i.e.,

- *General Provisions,*
- *Planning and Control*
- *Natural Resources Protection*
- *Water Pollution Control*
- *Ecological Environment Restoration,*
- *Green Development*
- *Guaranty and Supervision*
- *Legal Liability and Supplementary*





Challenge 2 : How to implement a **good water governance** to wisely manage water to **maintain ecological and human development in a sustainable way** ?

A Good Water Governance

is the process in which government and society get organized to use water resources sustainably to meet needs within a legal and ethical framework in accordance to the water availability at any given time with equity and dignity.

(Kick-Off Meeting of the 6th WWF in Marseilles, June 2-5, 2010)

1. Great protection of Yangtze River

e.g., it involves how to balance multiple use of water

1. Water Services and Uses Multiple use of water in irrigation areas could involve
 - *Irrigation Service* (Irrigated field crop production, Domestic use, Fisheries Livestock, Forest, grasses, and chena),
 - *Domestic Service*
 - *Environmental Uses*
2. Water Accounting i.e., It important for an accurate assessment of all the uses and users of water, which involves a water accounting procedure that can quantify the different uses of water and gives a better understanding of the relative quantities used by different sectors. It can give an indication of the performance of sub-basin water management.

1. Great protection of Yangtze River

Major issues related to multiple use of water

3. Water Quality Issues

It should highlight the importance of water quality not only for domestic use but also for fishing, wildlife and others.

4. Institutional Structure for Multiple Water Use

In many cases, there are parallel government agencies and user groups for each type of water use. In some cases, there is even multiple government departments related to a type of water use.

However, **effective coordination among departments is very difficult.** Thus, it is necessary to carry out **institute innovation on water governance**. The needs of all water users, and deal with the potential complementarities as well as trade-offs involved in multiple water use.

1. Great protection of Yangtze River

Major issues related to multiple use of water

5. Valuing the Multiple Uses of Water

This is a big also rather difficult issue. Valuing the Multiple Uses of Water involve *the Value of Water, Valuing the Productive Uses of Water, Valuing the Nonproductive Uses of Water.*

For Valuing the water, it is good to distinguish different concepts: *water pricing, economic value of water, and other values of water.*

6. Complementarities, Competition, and Conflicts

When water becomes scarce, there is more competition and even conflicts over water, particular on competition, complementarity, and conflict between uses. This trend will continue.

1. Great protection of Yangtze River



Challenge 3 : How to **monitory, modelling & wisely manage water** to meet **SDGs demands** for whole river basin ?

1. Coordinating **relationships** among upper, middle & lower reach, human & nature
2. Emphasizing **carrying capacity** of resources, environment and ecology
3. Supporting **the solutions** by integrated ways:

headwater → lakes/reservoir → riverbank/shoreline → urban areas → delta/estuary



1. Great protection of Yangtze River

Integrated River Basin Management based on **river basin system theory** has become a very important issue for SDGs

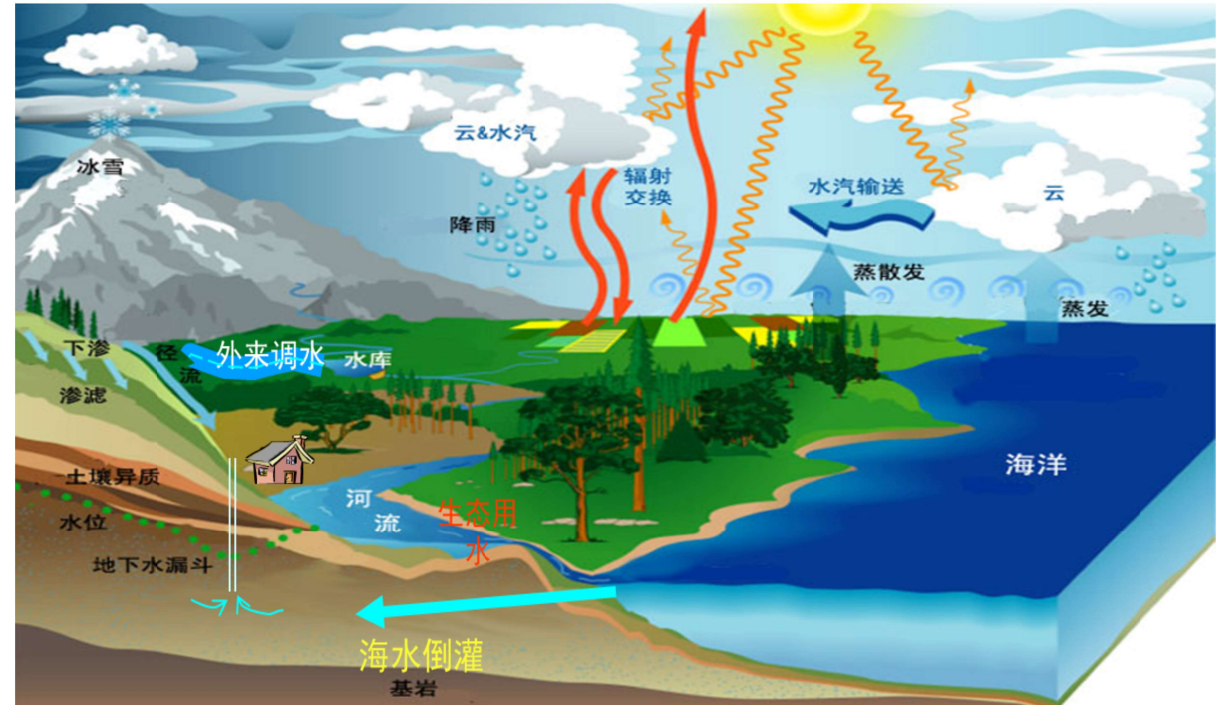
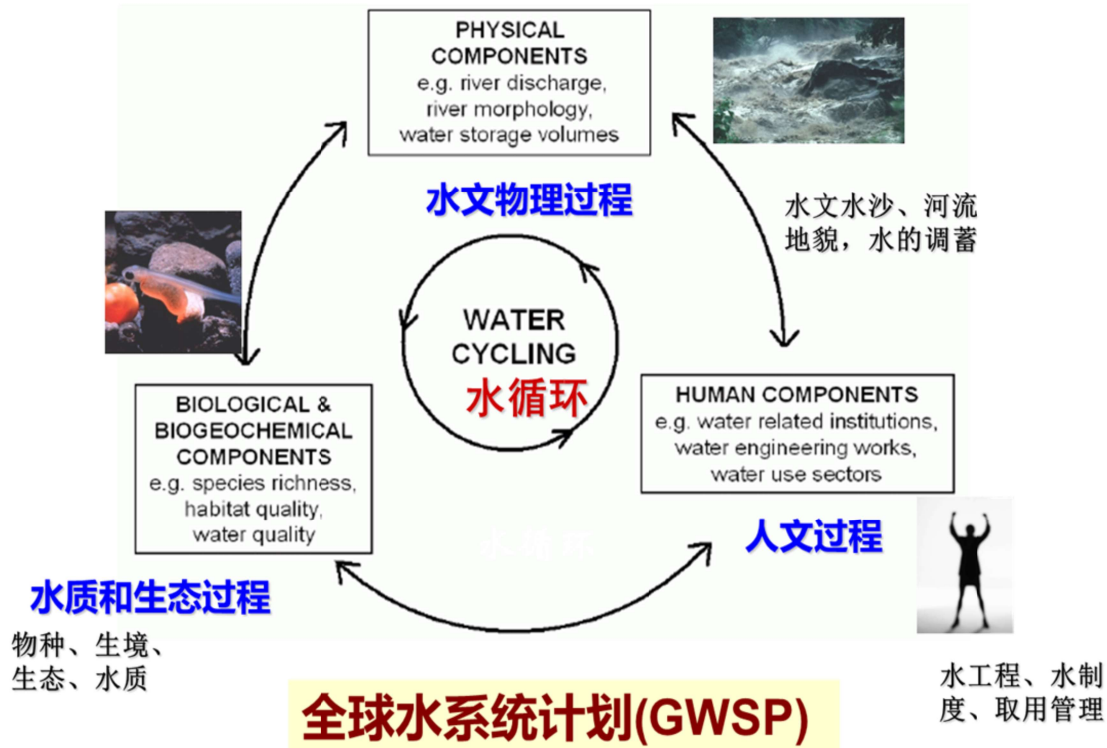


Global Water Systems Project
Open Science Conference

7-9 OCTOBER 2003



Initiative of Catchment System(ICS)



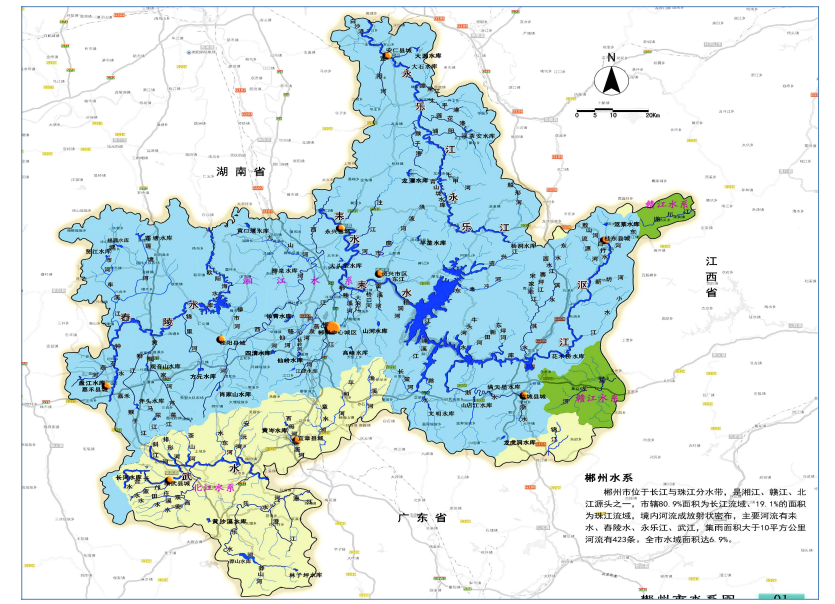
02

Chenzhou's demonstration



2. Chenzhou's demonstration

1. Chenzhou is located to the head water region of Yangtze River and Pearl River with **rich water resources**. The average annual precipitation is of **1797.5 mm**
2. The area of Chenzhou is **19,393 Km²**, consisting of three rivers, in which **81% area** (the heads of Ganjiang River & Xiangjiang) belongs to Yangtze River and **19% area** (the head of Beijiang River) is in the Pear River



3. Due to the rich mineral resources and traditional operation ways in the region, **the water pollution in the rivers is very serious**

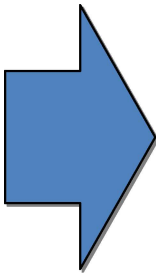


Major challenges : how to coordinate the relationship between development and environmental protection ?

Chenzhou's practices and demonstration on good water governance for SDGs

- Strengthening Systematic Governance to Ensure Clean Water Flows Continuously
- Promoting Value Transformation to Optimize the Use of Water Resources
- Balancing Urban and Rural Development to Benefit the People with Quality Water

2. Chenzhou's demonstration




牢记殷殷嘱托 系列报道
守护一江碧水

THE WORLD EARTH DAY | 第53个世界地球日
2022年4月22日 星期四

**千年矿山
又见青绿**

郴州柿竹园矿区点亮绿色发展新思路



晨视频

Chenzhou, Hunan Province, National Green Mining Development Demonstration Zone

2. Chenzhou's demonstration

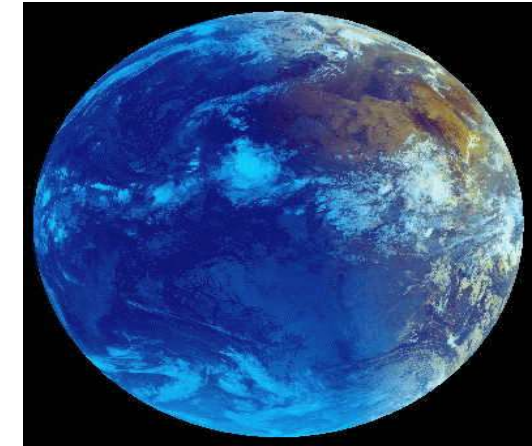


Chenzhou has been selected as an innovation demonstration zone of China National SDGs

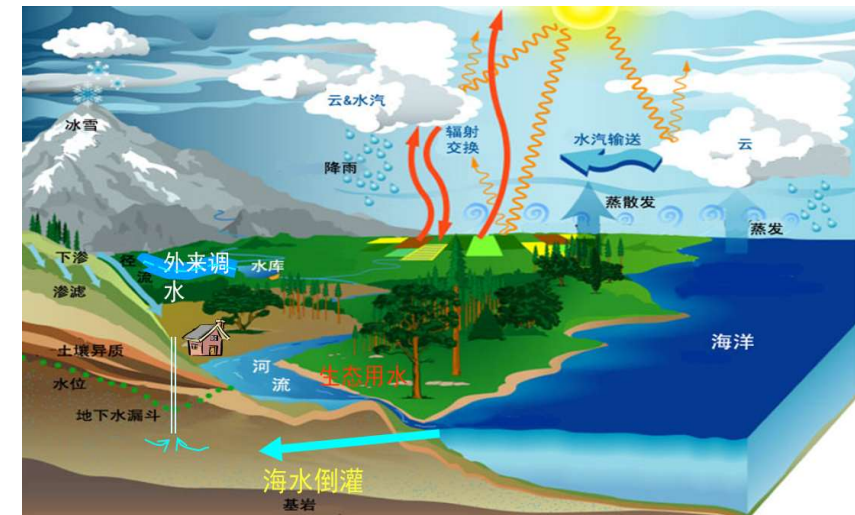
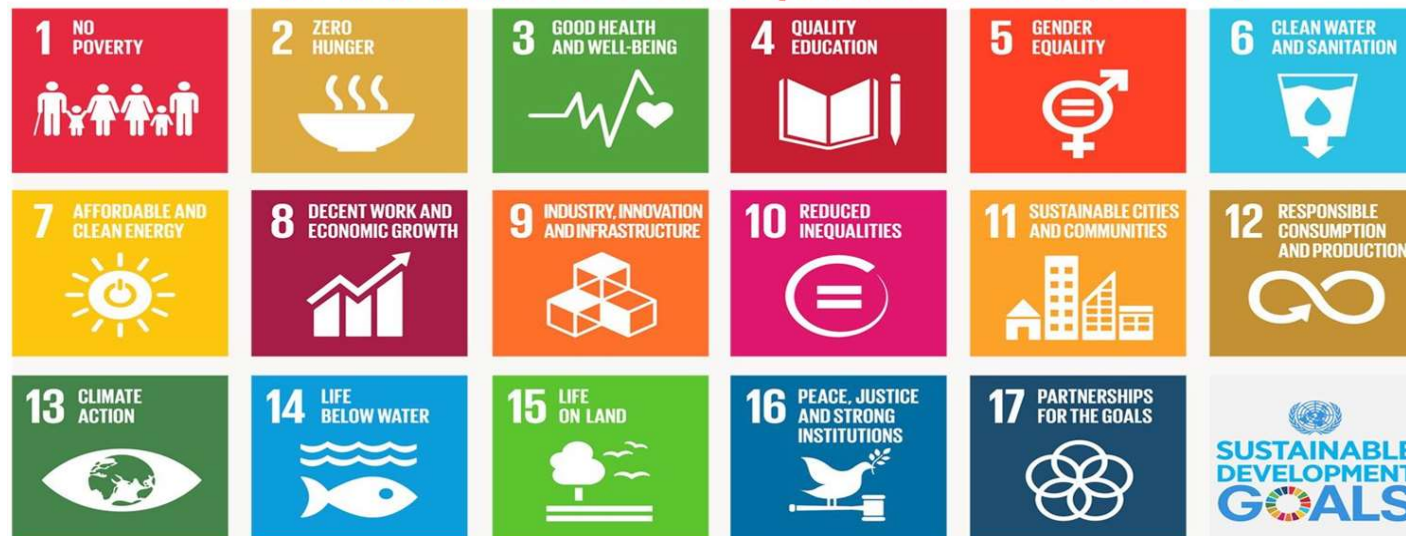
Conclusion Remark



1. **The issue of Good Water Governance** copied with **SDG 6 of Clean Water & Sanitation** is one of the **major challenges** in our society, particular **in regional scale** toward the sustainable development in **China**

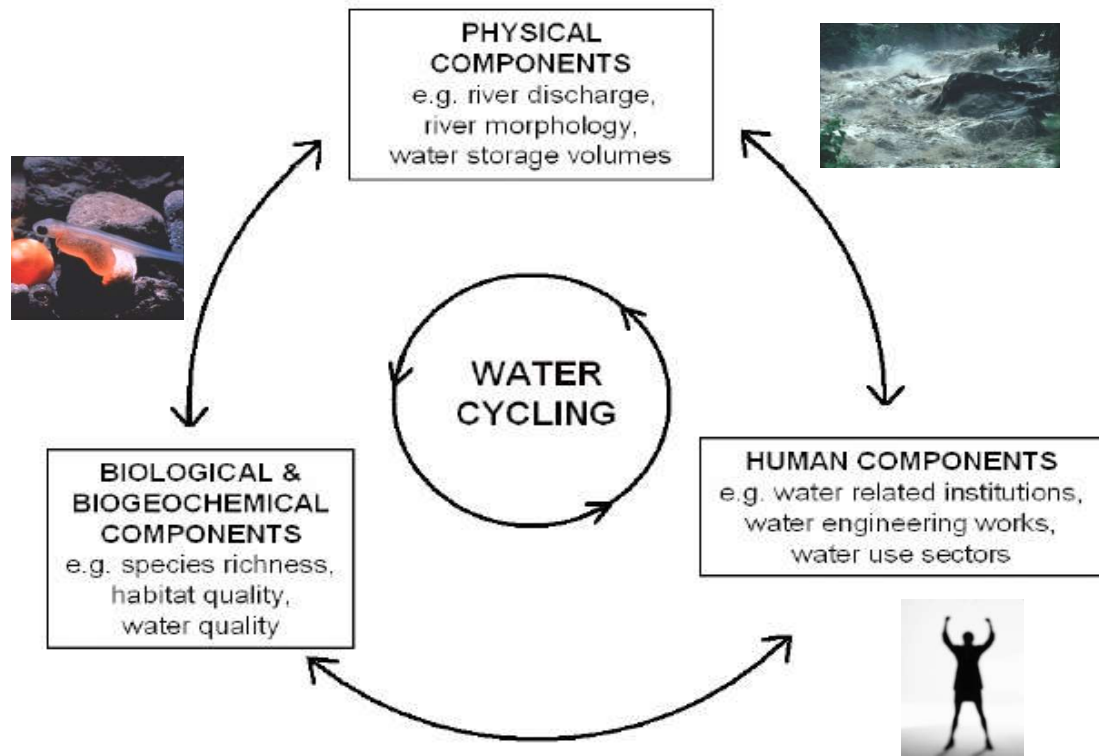


The 17 Sustainable Development Goals (SDGs)



Conclusion Remark

2. Chenzhou is just case how to implement good water governance to support water sustainable utilization & green development



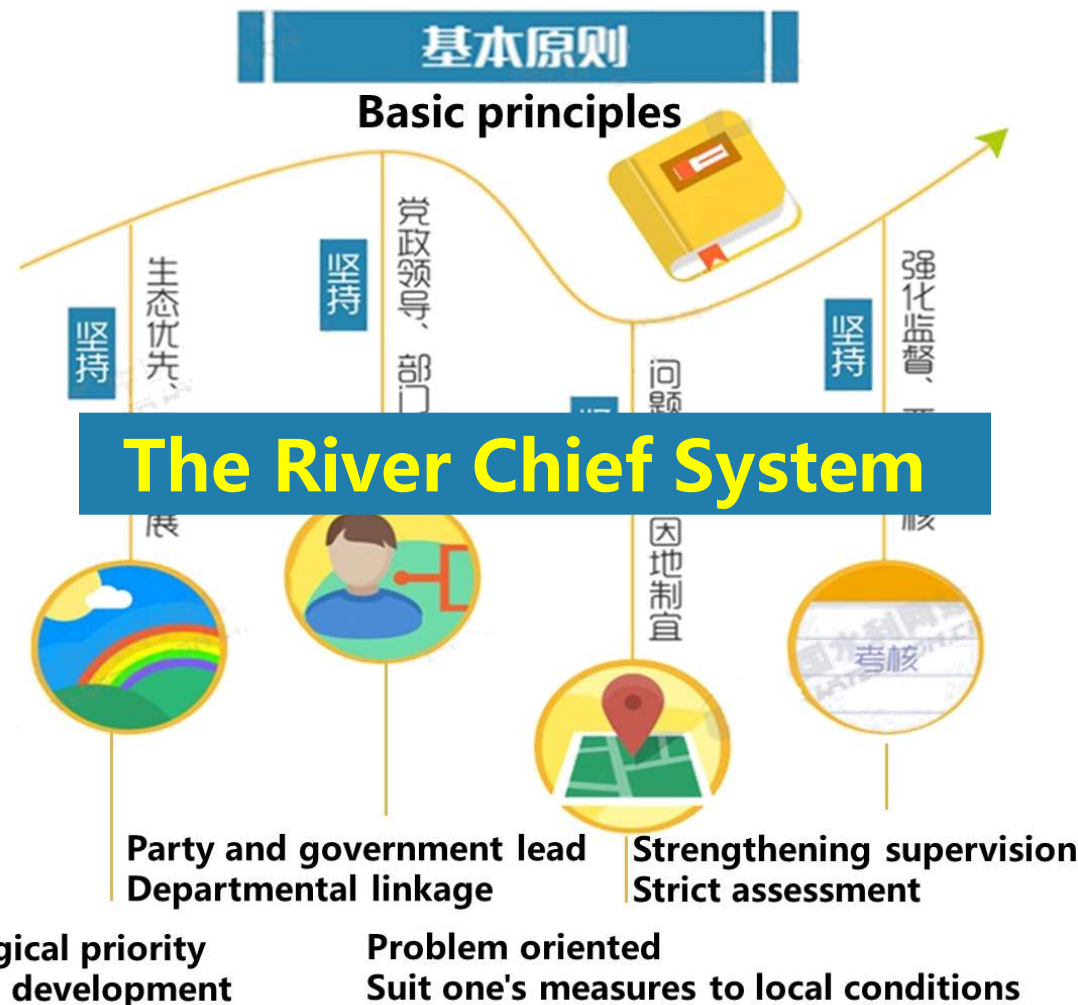
WATER SYSTEM



Conclusion Remark



It supports construction of Wild China by the river chief system

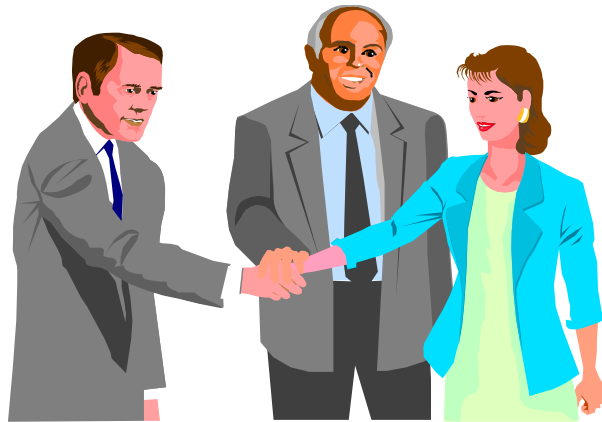


Conclusion Remark



3. It also support *the Great Protection of Yangtze River* as an excellent demonstration of China for SDG6

Thank you for your attention!



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