

China Irrigation Modernization Assessment Summary of the first draft completed

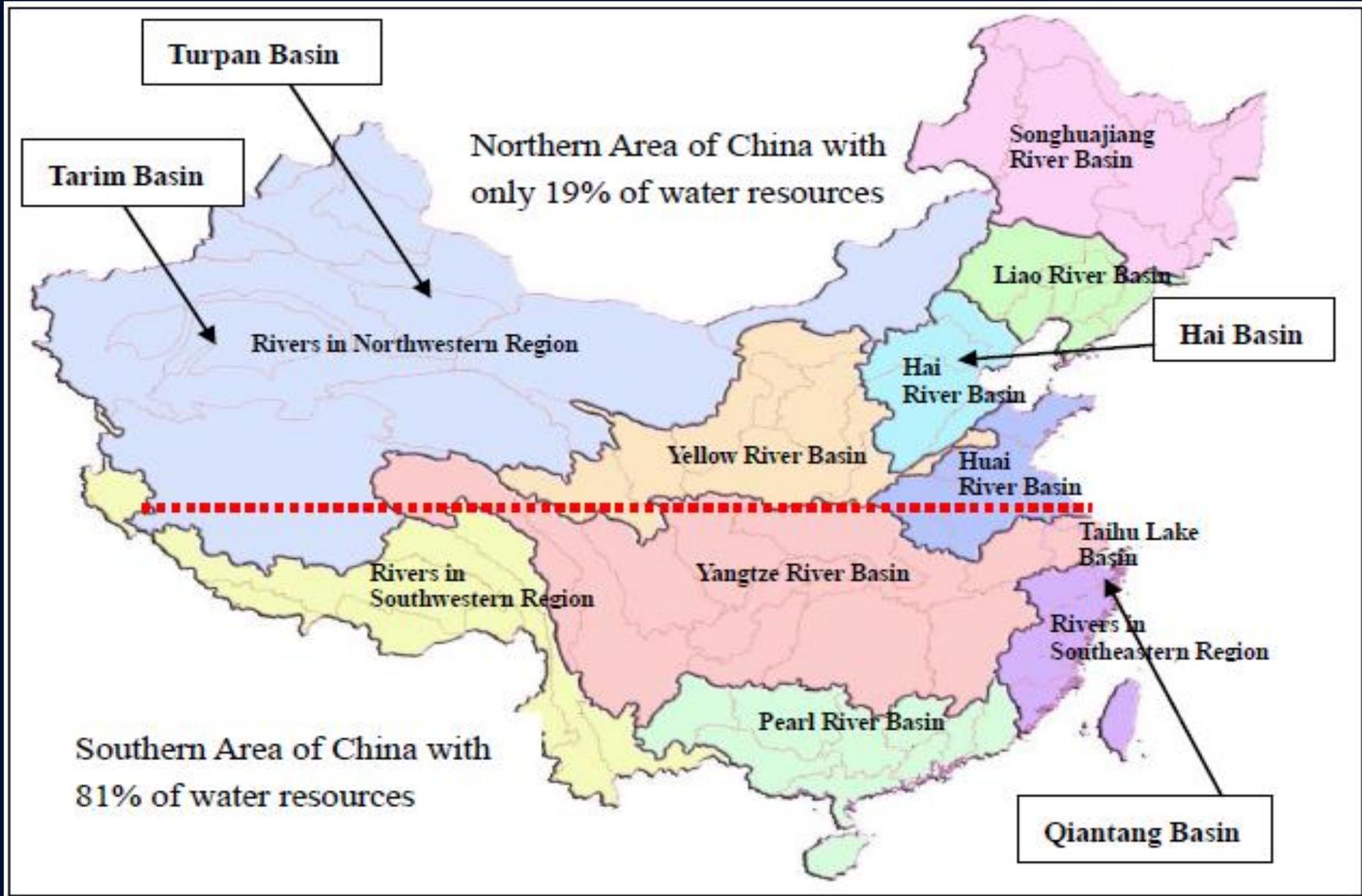
Outlines

1. Selected River Basin Locations
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- China Team

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1. Selected River Basin Locations



2. Government Goals by 2020

- 1) **Urbanization** – the number of rural people will reduce from the current 520 million to 260 million (Indicator: urbanization rate increases from current 60% to 80%);
- 2) **Food Security under National Self-sufficiency Policy** – the total amount of agricultural products will need to sustain the projected population of 1,500 million with the national self-sufficiency policy (Indicator: China should produce 90% of cereal grain products needed for the country); and
- 3) **Green Growth and Sustainability** – restoration of ecological environment; pollution reduction; and sustainable use of water resources (Indicators: the total water withdrawal should not exceed 670 billion m³, and water use efficiency for irrigated agriculture should increase from current 45% to 55%; and water quality in rivers and lakes should reach the national standards).

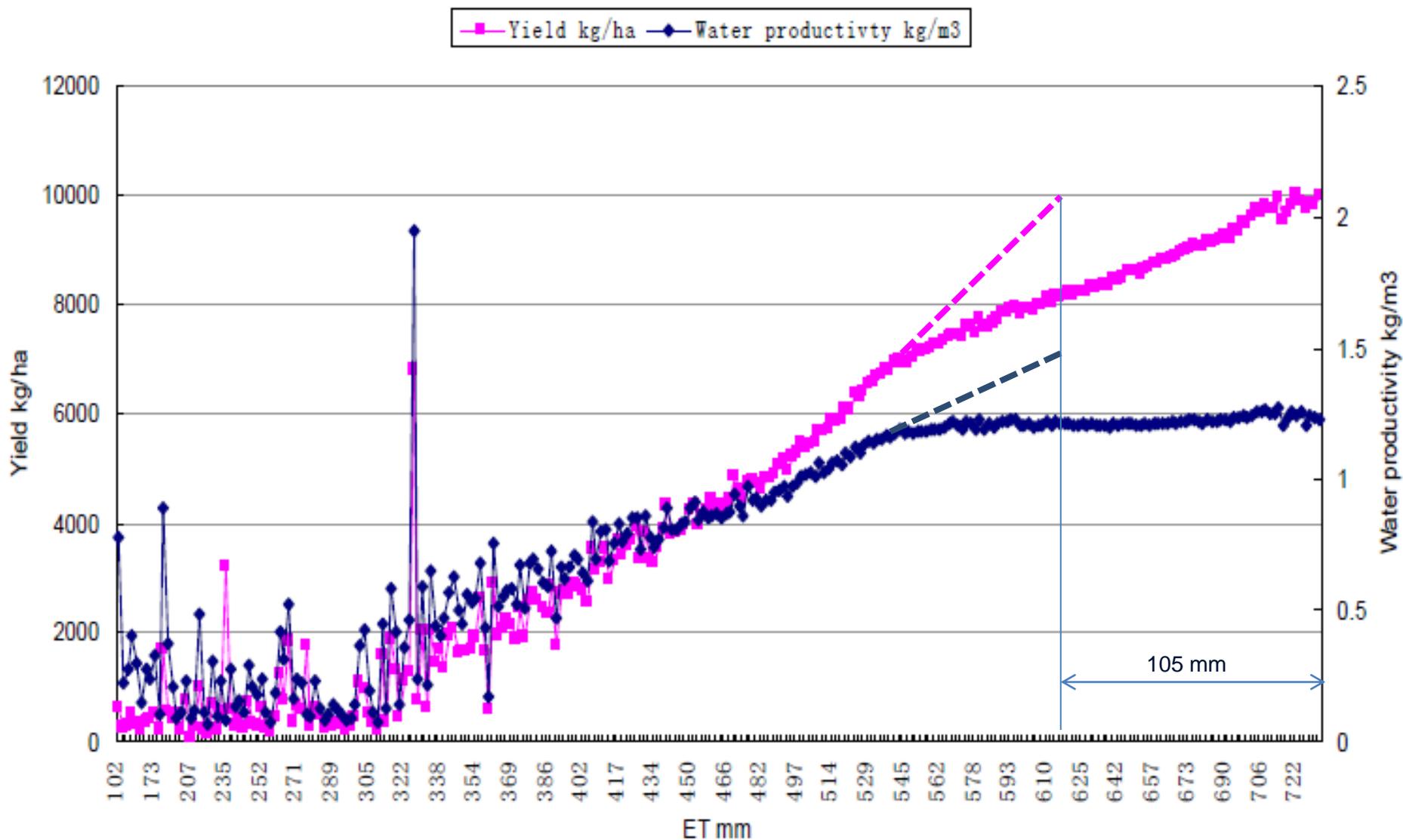
3.1 Goal for Urbanization – Challenges

- 1) *Irrigation systems, particularly on-farm systems, will need to be re-designed, constructed or rehabilitated with multiple functions, to provide water not only for irrigation but also for industrial and domestic water uses;***
- 2) *Irrigation services and its institutional setups will need to be adjusted to provide best water services for bigger farmer families;***
- 3) *Irrigation technologies will need to be changed to accommodate the large scale of farm land with modern and bigger agricultural mechanization and its automation;***
- 4) *Water demand for urban and rural will need to be reallocated;***
- 5) *Land and ecological compensation system will need to be established and operational to protect farmer interests, who lose land and irrigation water; and***
- 6) *Legislation for water-related new laws, regulations and policies will need to be carried out to facilitate urbanization.***

3.2 Goal for Food Security – Challenges

- 1) The current irrigated areas will need to be expanded and irrigation efficiency will need to increase (according to the national water master plan) in order to increase grain production to sustain the projected population of 1,500 million people by 2020;***
- 2) Water productivity will need to increase to reduce expansion of irrigated areas. The current water productivity will need to increase from the current 0.7-0.8 kg/m³ to 1.2-1.5 kg/m³, which is a big challenge; and***
- 3) Large inter-basin water transfer system to be built to provide more water from south to north in order to address the food security issue, which will have huge adverse impacts on the ecological environment, and hence is a big challenge.***

Possibility of Increasing Water Productivity?



3.3 Goal for Green Growth and Sustainability – Challenges

- 1) *In north China and north-western part of China, ecological environment degradation will become more serious due to the increased water consumption from expanded irrigated areas, increased irrigation efficiencies and increased water supply to industrial and domestic water uses;***
- 2) *Surface and groundwater over-exploitation will need to be reduced and finally stopped to mitigate over-use of water and restore ecological environment in North China and North-western part of China;***
- 3) *Water pollution, particularly in the south and south-western part of China, will need to be controlled to return clean water to irrigation and urbanization;***
- 4) *Water demand for ecological restoration will need to increase, which however will reduce the water resources available for economic activities.***

4. Considerations

- 1) Given the three national goals are somehow mutually exclusive, trade-offs at the river basin level , particularly for the river basins in the north or north –western part of China, will need to be incorporated into the decision process for irrigation modernization at the field level.*
- 2) In this regard, it would be important to analyze each step of ABCDEF to assess future irrigation modernization in China, which have partially tested in World Bank financed Tarim Basin II project (IEG rating: highly satisfactory); Water Conservation Project (IEG rating: highly satisfactory); and GEF Hai Basin Integrated Water and Environment Management Project (ICR rating: highly satisfactory and VP awards). Now, it has been fully tested by Xinjiang Turpan Water Conservation Project, which is under its second year of implementation.*

The second part of the presentation will be given by Dr. Wu Bingfang. The title of his presentation is irrigation modernization assessment on Turpan Basin of Xinjiang China.



Thank you!
