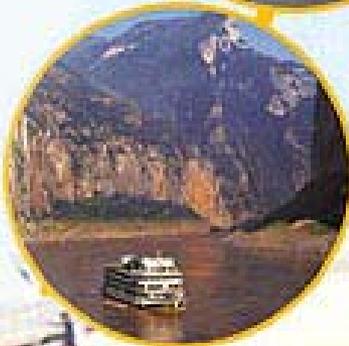
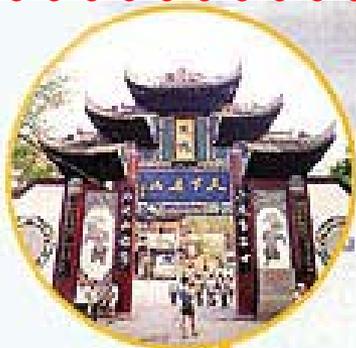


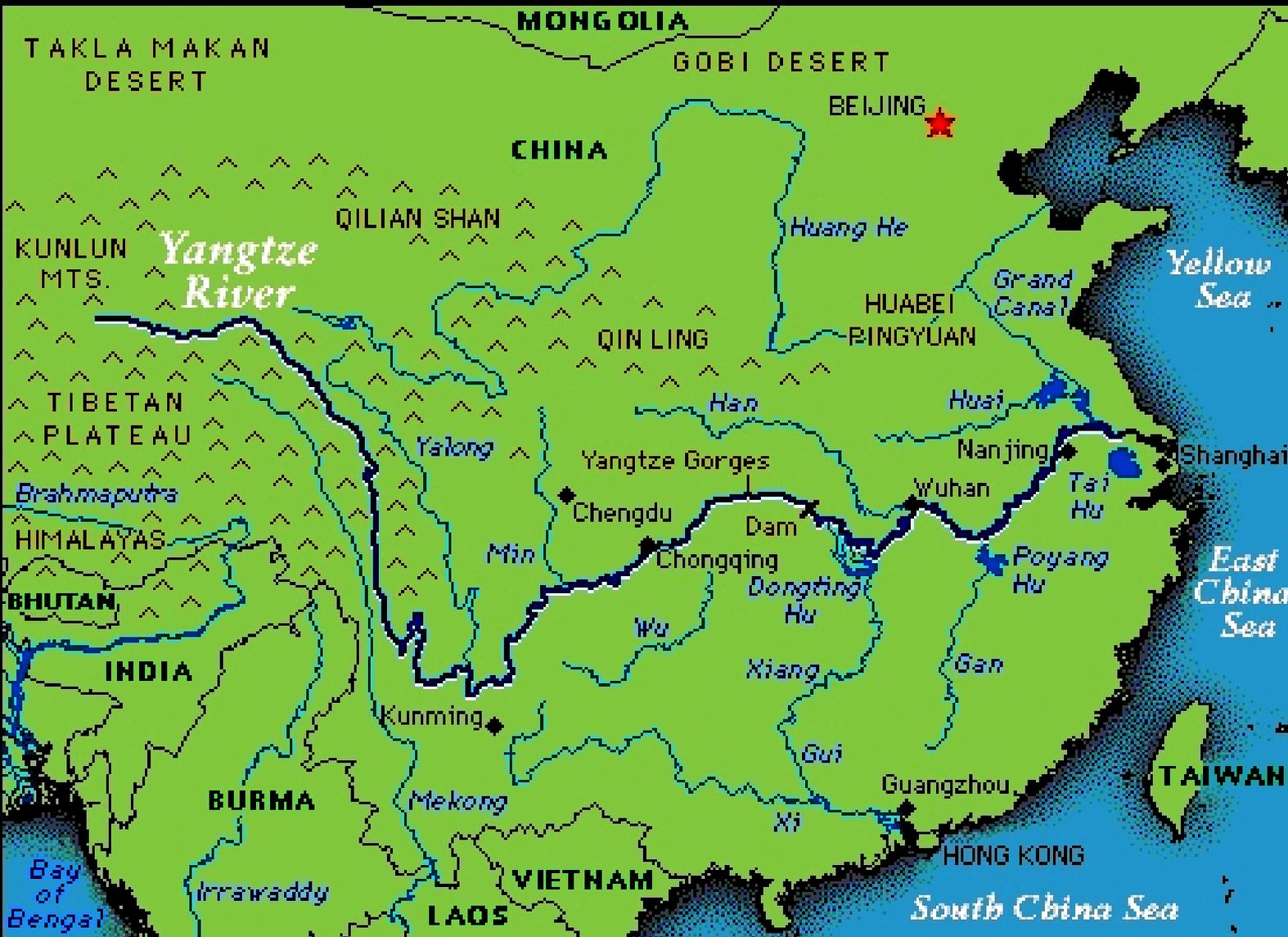
Presentation

**-- Three Gorges Dam
(TGD) on the Yangtze
River**

**Alex Buchanan
Rudy Koester
Ali Elahi
Michael
Jane**

THREE GORGES PROJECT





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It is in the Yichang city, Hubei province in China

Brief Introduction



The Three Gores Dam on the Yangtze river in China will be the largest hydroelectric dam in the world. This monumental project has been plagued by massive corruption problems, spiraling costs, technological problems, and resettlement difficulties

I. Description

- **Generating capacity of 18,200 MW from 26 generators**
- **2 kilometers across**
- **185 meters above Yangtze River**
- **Reservoir over 600 kilometers upstream**
- **Largest concrete structure in the world**
- **Over 5 times the size of Hoover Dam**
- **Project met much opposition**
- **Displaced over 1 million people**
- **Ruined scenery and archaeological sites**
- **Environmental concerns**

II. Problems to be solved

- ❖ **Flooding**

- ❖ **1. Occur every 10 years**

- ❖ **2. Flooding disaster areas**

- ❖ **Exploitation of resources**

- ❖ **Bad for the human beings there**

- ❖ **Difficult waterway navigation**

III. History

- 1918 Sun Yat-Sen came up
- 1945 Dr. John Lucian Savage, a famous American expert arrived in dam--“Preliminary Report on development Plans of Three Gorges”
- 1950 Changjiang Water Resource Commission founded to manage river
- 1955-1957 Yangtze drainage area to control flooding, research and design of Three Gorges project started
- 1992 “The Resolution to Construction of Three Gorges Project” entered into executive process
- 01/03/1993 TGP Construction Committee was founded
 - 1) 04/02/Financing sources
 - 2) 06/29/Approved regulations for TGP relocation

IV. Process



Phase I (1993-1997) 3 steps

Phase II (1998-2003) 5 steps

Phase III (2004-2009) 2 steps

The three phases

□ Phase I

1. do advance work for project
2. excavation of diversion channel
3. river close-off

□ Phase II

1. construction of spillway
2. left-bank power house
3. ship lock
4. Initial water storage
5. commercial operation of first batch of generators

□ Phase III

1. construction of right-bank dam
2. construction of right-bank powerhouse



**Construct the
power house**

V. Available Alternatives

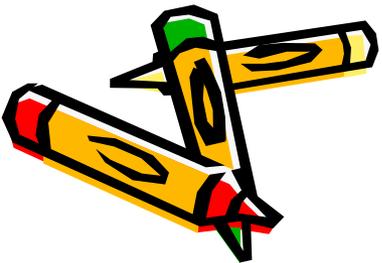


- **A) Do nothing**
 - **1) Still flooding**
 - **2) Still resource exploitation**
- **B) Many smaller dams**
 - **1) Supply less energy**
 - **2) Environmentally friendly**

VI. Cost of Design



- **A) Initial estimate of \$25 billion**
 - **1) Based on 1980's prices**
 - **2) Didn't include inflation**
 - **3) Errors in calculations ignored to ensure passage**
- **B) Now estimated at over \$100 billion**
 - **1) Most expensive construction project in the history of China**
 - **2) Should pay for itself through electricity generation**



VII. Technical Data & VIII. Non-technical Data

■ Technical Data

- A) 102.59 million cubic meters of stone and earth removed
- B) Replaced with 29.33 million cubic meters of stone and soil
- C) 27.15 million cubic meters of cement mixed and poured
- D) 281,000 tons of metal structures erected
- E) 354,000 tons of reinforcing bars made and erected
- F) 231,000 square meters of leak-proof concrete walls built
- G) 250,000 workers employed in construction
- H) 26 turbine generator sets
- 1) 700,000 kilowatt capacity per unit

■ Non-technical Data

- A) When completed, will be the world's biggest hydropower plant
- 1) Installed capacity
- 2) Annual average power generation volume
- B) Will take 17 years to complete
- C) Won't affect navigation of Yangtze river

IX. Problems and Costs

- **By April 2006, 15.75 billion spent on construction**
- **“Western estimate” between 40 and 50 billion US dollars**
- **Endangered species**
- **Slower water flow will increase pollution**
- **530 millions tons of sediment entering reservoir will influence function and**
- **decrease life of the reservoir**
- **Corruption**

- **Build up of silt could results in erosion and sinking of costal areas**

X. Estimated net savings



1.Flood control

2.Electricity generation

**3.Over 100 billion kwh
of electricity generated
has earned over 3
billion
dollars**

4.Budget

XI. Conclusion

- ◆ The Three Gorges Dam on the Yangtze River in China will be the largest hydroelectric dam in the world. Although at first seen as controversial, it seems as though the benefits provided by the dam by far outweigh the costs of construction , both economically and environmentally.



Dam model--Photos of the models that were built to represent what the dam would look like upon completion in 2009.



Thank you very much



- **Sources**

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