EGRAM FROM BEIJING, 03.06.2003

SUBJECT: CHINA: THREE GORGES DAM

Summary

1. Second phase of Three Gorges Dam construction completed. Dam closed and water level rising. Project adds 18GW of hydroelectric power capacity, but remains controversial. Key concerns include construction quality, resettlement, corruption, pollution and sedimentation. High level political commitment to massive engineering works is undimmed. More prestigious-but-flawed projects will follow, with accompanying controversy.

Detail

2. The Three Gorges Dam was first conceived in the 1950s, as a massive contribution towards Mao's "endless struggle against nature". Many of China's leading scientists and engineers have criticised the project from the beginning, and in 1992 one third of China's legislators abstained or voted against the decision to go ahead. Li Peng, Premier at the time and a Soviet-trained hydropower engineer, pushed the project through and has championed it ever since. Construction work began in 1994, and the second phase was completed on 1 June 2003. The sluice gates have been closed and by 15 June the dam will have filled to create a deep lake stretching 365 miles along the main channel of the Yangtse River. A third phase will raise the water height to 185 metres by 2009. The total cost is estimated at between USD 24 and 30 billion.

3. State media have celebrated the completion of this phase. The project adds 18GW of electric power generation capacity, equal to the output of around 10 large coal-fired power stations, which will be sent downstream to eastern China and Shanghai. The power is likely to be priced at a discount, at least initially, to make up for high transmission costs. It will displace around 50 million tons of coal use per annum. The dam is also expected to contribute to flood control on the middle and lower Yangtse. Yangtse floods are said to have killed some 300,000 people during the last 100 years, with a death toll of over 4,000 in 1998 alone. Despite these potential benefits, the dam has many critics.

Construction quality

4. A senior Chinese Academy of Sciences engineer who reviewed construction work last month found deep cracks in the dam face and commented that China "should absolutely not be proud" of the construction work. Officials pointed out that all large dams have

some cracks and these were not serious enough to affect the safety of the dam. They have also rejected claims that earthquakes pose a significant risk, as the area is geologically relatively stable, and the dam has been designed to withstand earthquakes up to 7 on the Richter scale.

Pollution

5. The government does acknowledge that there is a serious risk that the waters of the dam will be highly polluted. The State Environment Protection Administration (SEPA) launched a campaign in May to encourage final efforts to clean up the area to be flooded, which includes many thousands of hazardous sites (eg public toilets, waste dumps and hospitals). Construction of waste treatment plants has lagged behind work on the dam itself, with only 60% of plants in operation along the reservoir's edge and two large plants to deal with waste from Chongqing Municipality not due for completion until end 2004. The Chinese press has reported on fears that the reservoir could become a home for the SARS virus (but the WHO points out that there is a far greater risk of the virus spreading through local flooding of urban sewage systems throughout SARS-affected areas). Local environmental NGOs, including the Chongqing Green Volunteers, are pessimistic about the likely levels of pollution, but point out that "the time for debate is over, now we need to face the problems and find solutions".

Sedimentation

6. The flow of silt into the reservoir is a recognised problem which has badly affected other major hydroelectric projects in China. This has been addressed partly by reafforestation in the upper reaches of the river, but could still significantly shorten the dam's expected lifespan of 50 years. The operating company is planning to invest in building four more dams upstream, to trap the silt and produce power. These are huge projects on their own - one of them will be 270m high and become the world's second largest in terms of power output - and they could be in operation by around 2020 if finance is available.

Migration/corruption

7. So far an estimated 700,000 people have been resettled, either into new towns and cities built by levelling new ground above the water line or elsewhere in China. The resettlement budget was huge, but some was spent on lavish public buildings and some siphoned off by individuals. The official media reported 234 cases of corruption involving USD 5 million, but popular perception would call this the tip of the iceberg. Many people have been

moved into new apartment blocks with better facilities (but less space) than their old homes, but there is a strong sense of the loss of community ties and many reports of people struggling to find new jobs. Those who complain to foreign journalists are frequently subjected to harassment - one elderly couple received a three year jail term. The next phase of construction will require another 400,000 to move in the next 6 years.

Loss of cultural heritage

8. The Three Gorges Area contains up to 2,000 sites of archaeological importance particularly from China's earliest civilisations. Popular websites registered public dismay at the loss of cultural heritage, and the budget for excavation and preservation was raised repeatedly, but archaeologists claim they were able to rescue only a small fraction of the total.

So is it worth it? Power generation and flood control

9. China needs to add around 16GW of electric power capacity per year to keep up with projected demand - a new Three Gorges Dam every 14 months. Officials are quick to point out that hydroelectric power is helping to reduce China's reliance on coal and therefore its greenhouse gas emissions. Critics would prefer to see the USD 25 billion invested in other energy efficient technologies (eg advanced clean coal technologies), to deliver potentially greater economic returns, higher environmental benefits and lower social costs. Some are concerned that the Yangtse Power Corporation has too much political power (one of the key investors is Li Xiaopeng, son of the Premier who championed the dam), and that this is one of the factors delaying the creation of a strong and independent power sector regulator.

10. The jury is also out on the issue of flood control. Flooding on the Yangste has been exarcebated by decades of deforestation, quarrying and land reclamation. The most frequent floods on the lower and middle reaches of the Yangste (eg those in 1998) are caused by heavy local rainfall and tributaries that join the river below the dam. The damage from these floods will still need to be controlled through better land use planning and maintenance of flood defences.

Comment

11. The Chinese government remains committed to building large scale dams and other works and is so far undismayed by the social and environmental challenges which accompany them. China's new President and Party Secretary, Hu Jintao, also trained as a hydropower engineer and took part in the construction of one of

China's first large-scale dam projects early in his career. Several massive projects have been approved more recently including the South North Water Transfer scheme (three long canals to pump water from the Yangste into and across the Yellow River to meet demand in northern China) and a cascade of eight hydroelectric dams on the Mekong River, whose potential impacts are a source of concern to downstream states. These projects are backed by large amounts of central government finance and are part of the overall package of fiscal measures to stimulate the economy, particularly in western China.

12. Although a handful of experts and academics voice specific criticisms of each project, there is a strong presumption in favour of high-cost prestige engineering works and a highly centralised political process to approve them. Economic analyses are strong on project costs but weaker on long term rates of return and on comparison with alternative approaches to achieve similar objectives. Although the government is coming under increasing budgetary pressure to raise the efficiency of its spending, central and local politics will continue to play a very significant role in the decision-making process. Local people usually feel powerless to protest, and are to some extent carried along by the promises of faster economic development.

13. The new Environment Impact Assessment Law has improved awareness of certain issues (water pollution, local soil erosion), but not others (impacts on ecology, transboundary effects). Social impact assessment is being carried out only where international finance requires it (for example for the West East Gas Pipeline project). In the light of this we can expect to see plenty more prestigious-but-flawed projects approved and carried through, accompanied by further controversy.

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