The South to North Water Diversion Project: a Bad Solution to the Water Crisis in Northern China?

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Since the beginning of the economic reforms in 1978, water shortage in northern China has deteriorated very quickly. For the Yellow River only, the main source of water supply in the northern region, the annual demand is about 150 billion cubic meters. This amount exceeds by far the available resources of the Yellow River, and creates a deficit of around 40 billion cubic metres. Since 1972, the Yellow River is running dry in Shandong Province and doesn't reach the sea for about three to four months during the dry season. Restrictions on water consumption have been extended to all northern China cities, and the water resources available to northern China population with 501 cubic metres per capita per year is about 1/5th of the China average and 1/12th of the world average. Moreover, most of the remaining water is heavily polluted with 90% of urban rivers sections which is not suitable for human contact. Given the pace of economic development in this region populated by 550 millions individuals, the shortage of water is bound to reach such a level that if no action is taken urgently the situation will turn into an economic, social and environment disaster.

In response to this crisis, fifty years after Mao Zedong proposed to divert water from the Yangtze River to the Yellow River, the State Council has announced recently the start of the construction of three different routes along the upper, middle and lower reaches of the Yangtze

river to northern China. On paper, this project seems to be an appropriate solution. Upon completion, the three diversion routes will bring a total of 40 billion to 50 billion cubic metres annually to the northern region. Nevertheless, as with the Three Gorges dam construction, numerous criticisms can be addressed to the south-north water diversion project. The project suffers from a lack of consultation with the population and the scientific community. There will also be a negative impact on the environment and a huge economic and social cost, with an estimated 370,000 people who will have to be displaced to other areas.

The total cost of the project has been estimated around 60 billion U.S. dollars (22 billion U.S. dollars for the eastern and the central route, and 36 billion U.S. dollars for the western route). In line with its decision to pursue a Keynesian economic policy, the government is going to fund part of the construction of the project. The central and the western routes are also considered as an important part of the "Xibukaifa"--or "Go west"--policy. But according to some recent declarations from Zhang Guoliang, head of the diversion project, some funding should also come from an increase in water fees. Although fees are necessary to reduce the current wasteful use of water, this policy is more likely to be accepted by the urban population than by the farmers who are biggest consumers of water. Until now, peasants have paid very low water fees, 0.05 to 0.03 Yuan per cubic metre, depending on their location. In a general context of huge and increasing income disparities between cities and rural areas, any attempt to bring water fees closer to the production cost (estimated at 6 to 8 Yuan per cubic metre) could provoke strong opposition. Even if room to negotiate with farmers on pricing policy does exist, as has been shown by recent experiments carried out successfully by the World Bank and the United Nations Development Programme, this won't be enough to cover the major part of the SNWD project funding. Who will then fill the gap? Will it be the government, by further budgetary spending?

Urban consumers? International investment agencies? Foreign private investors, who are often very reluctant to invest if prices are too low? This is a question that needs to be addressed more precisely by the government.

Generally speaking, everywhere in the world, governments are not showing any enthusiasm in promoting an open and democratic debate among their population when they want to implement big infrastructure projects. But China's current regime gives even less room for individuals to voice criticism and design alternative projects. Despite many declarations by Prime Minister Zhu Rongji in favour of better management of the existing water resources, the priority has been clearly given to the south-north water diversion project. The result is that other solutions have been sidelined and their feasibility has not been properly examined. Some Chinese experts like Geng Shufang, Research fellow at the Institute of Geology of the Chinese Academy of Science, have questioned the necessity of spending such a huge amount of money and over such a long period of time. He proposed the use of different methods to tap local water resources section by section to ease the shortage of surface water in the northern region, arguing that there is no shortage of ground water in this region. He also proposed the use of melted glacier water in the northwest instead of constructing the third route, which will be the most expensive and the most difficult route to build. The level of investment would then be much lower than what has been planned and would yield quick results. Other experts, like Zhang Jiacheng, Vice-president of the China Institute of Meteorology, insist that relying on an enlarged irrigated area for agriculture is an outdated idea. They propose the easing of water shortages through development of farming methods that rely on rain water or desalinised sea water.

The water crisis in Northern China is the result of a number of bad resource management policies: encouragement of growth and transfer of population to the upper reaches of the Yellow

River; development of huge irrigation projects for agriculture; proliferation of small rural enterprises using and polluting huge quantities of water, such as cement and fertilisers; inappropriate pricing; and incapacity of the Yellow River Commission to plan the use of the Yellow River water and to regulate conflicts between local governments. One example of the lack of coordination among provinces can be found in the Hetao plain irrigation programme in the Inner Mongolia province. This programme pumps 5 km3 of water each year from the Yellow River to irrigate 6000 km2 of farmland. According to the China Human Development Report[1] by the Stockholm Environment Institute and the UNDP, it sometimes uses up half the river's flow, and creates severe water shortage in downstream provinces like Henan and Shandong. The report is clearly pointing in a direction opposite to the south-north water diversion project as a way to solve the region's water crisis: gradual increase of prices, charging farmers by volume instead of by irrigated acreage, giving river basin authorities increased power to manage conflict and plan the use of water, corporatisation and privatisation of water supply with cooperation of the foreign expertise and capital, and promotion of technical solutions agriculture and industry could use to save water. Paradoxically, these solutions could be politically more difficult to implement for a government like China's than launching a pharaonic construction like water diversion project. They require great improvements in public governance, especially at the local level, like closing down polluting factories, enforcing anti-pollution law, increasing participation of the local population in the promotion of new types of agriculture, and solving conflicts of interest between different levels of the administration. If China wants to maintain a high growth rate in its northern region, without deep improvements in management of the existing resources,

[1] Stockholm Environment Institute and UNDP (2002). Making Green Development a Choice. China Human Development Report 2002. New York, Oxford University Press.

the project will only be a costly and temporary solution that will divert energies from more important policies like water conservation.

A downscaled version of the south-north water project based on the construction of the Eastern route only--i.e. the most feasible one and the least costly in terms of population transfer--combined with a priority given to better management of the existing resources, would be more likely to promote sustainable development in areas concerned.