

Progress anything but smooth on China's ambitious, and costly, water plan

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CHINA is engaged on the world's most ambitious replumbing scheme.

This month about 67,000 people were resettled to make way for the South-North Water Diversion Project, which will divert supplies hundreds of kilometres from the Yangtze River to the drought-stricken residents of Beijing.

Those displaced so far are the vanguard of about 345,000 people who must leave homes that will be submerged during the project.

Yao Ziliang spent his first 74 years in an earthen-floored house and made a living by growing wheat and maize in Guangou village. He and 894 fellow residents moved three weeks ago into a new version of Guangou, which has kept its original name.

They now live in concrete homes that have running water and indoor bathrooms.

Mr Yao is full of praise for the scheme, which will divert water 1277km along canals across China. "We have given up our homes for the South-North project. We are sad to move but it is for the good of the country," he said.

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He dismissed the concerns of some environmentalists, who fear that the water supply for the aqueduct may run out. "I believe the water will reach Beijing. The (Communist) Party would not lie to us," he said.

The diversion scheme is among the most ambitious that China, which is already famed for megaprojects such as the Three Gorges Dam across the Yangtze, has ever undertaken.

It involves three sections. The Eastern Route runs along the route of the 14th-century Grand Canal from the southern city of Hangzhou to Beijing and its port city of Tianjin.

The Middle Route runs along a canal being built from the Danjiangkou reservoir, the largest man-made body of water in Asia.

And the Western Route will come from the Tibetan plateau.

The project was first mooted by Chairman Mao with a throwaway comment during an inspection of the Yellow River in 1952. He said: "There's a lot of water in the south but not much in the north. If we could borrow some then things would be all right."

In 2002 the leadership of the Communist Party gave its formal seal of approval and the budget was set at 149 billion yuan. Since then costs have gone up and, while estimates vary, some experts say it will require as much as 420 billion yuan (\$66.6bn) or twice the cost of the Three Gorges Dam.

Progress has not been smooth, at least on the Eastern Route. Work to repair the Grand Canal started in December 2002, with the intention of creating a 1156km waterway to carry drinking water to Beijing and nearby cities. The structural work has been completed but there was trouble with the water. It was so polluted by the industries that line the banks that it was too dirty even to be treated.

Officials in Tianjin have reportedly refused the water, saying they would rather slake the thirst of their people with costly, but less risky, desalination plants. The water is due to be ready by 2013.

Wang Shushan is the official in charge of the waterway in the central Henan province where the Middle Route runs for 731km, or 57 per cent of the total route.

In a rare public acknowledgement that some of the water was not potable, he said: "You can't say that the Eastern Route isn't good, but it has a lot of pollution. The purpose is to use the water for agriculture and industry."

He was proud about the success of the Middle Route, adding: "This is a clean-water corridor".

Polluting industries in the area are being closed and a green belt 100m wide will be created along the length of the canal. Fears that the water supply from the Danjiangkou reservoir could dry up are overdone, he said.

The height of the dam is also being raised from 157m to 173m to increase its capacity. That is why Mr Yao and the village's other farmers and residents had to move. Their homes will be below the new water level once the reservoir is filled.

Mr Wang described the venture as a must-do project because of the needs of arid northern China, as well as of his province.

The government has already taken into account the possibility that the reservoir's waters may fail to supply the planned 9.5 billion cubic metres needed to flow north.

"We can't find ourselves looking at an empty reservoir. We can't waste this project. That is why we have a second phase: to build a channel from the Yangtze River to the Danjiangkou reservoir."

That costly addition to the original plans, estimated at about 8bn yuan, was decided on in 2008 and work has already begun. Because the route is uphill, electricity from the Three Gorges Dam will pump the water to Danjiangkou.

The Middle Route's sole water source will be the reservoir. From there the water will be sent north using only the power of gravity to deliver it to Beijing. The water will fall 98.7m over its journey and at one point will be carried by two tunnels- 7.2km long and 8.5m wide -- under the Yellow River.

Guo Shuqiang, of the 16th Bureau of the China Railway Construction Group, has been working at the tunnels for 20 months and is delighted with the engineering triumph. Drilling will be finished this month. "We must build this for the people of Beijing, for the leaders and for foreign guests," Mr Guo said.

Officials no longer make much mention of the complicated Western route that envisages bringing water from rivers on the Tibetan plateau swollen with glacier melt. Mr Wang said the most technically complicated section of all may have to wait beyond its projected completion date of 2050. "It has been stopped because of the huge investment and the difficulty. But we will do this one day," he said.

He expects the Middle Route, costing 80 million yuan a kilometre - mainly because of the canal's reinforced concrete bed - will start to flow in 2014.

Mr Wang said: "The South-North project is as significant as the Grand Canal or the Great Wall. On this hinges the long-term survival of China, the survival of future generations."

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<http://www.theaustralian.com.au/news/world/progress-anything-but-smooth-on-chinas-ambitious-and-costly-water-plan/story-e6frg6so-1225926385461>