

Stepping into Water Crisis: analysing the driving forces of China's water resources exhaustion

Topic: Environmental IO models 7

Author: Dabo Guan

Co-Authors: Klaus Hubacek

China is a country with abundant water resources, but these are unevenly distributed. The statement that all rivers run dry in the North, and all water is polluted in the South sketches a realistic picture about China's current water challenges. . Alongside the South-to-North Water Transfer Project, China sees technology as a rescue from the water crisis without harming its economic development. China announced its ambitious plan to cut "water consumption per unit of GDP to 125 m³ by 2020, down by 60% from today" with special focus on more efficient irrigation, in order to cope with the projected economic growth of 60% by 2020 (Ministry of Water Resources, 2007). In this paper, we employ three indicators to assess water issues in China: freshwater consumption discharged COD in wastewater, and unavailable water (amount of freshwater bodies contaminated and thus unavailable for any purpose of usage). For this we use the latest available datasets and adopt structural decomposition analysis to investigate the driving forces of China's water crisis from 1992 to 2007. We find that 1) agriculture is not the major contributor to China's water crisis, although it remains the largest freshwater consumer in China. 2) technology improvements can effectively offset some freshwater consumption and COD discharge but it fails to eliminate cumulative pollution which can be seen as a key contributor to the water crisis. Finally, China's water-intensive export production pattern is responsible for 1/4 of total consumed freshwater to be used (virtual or embodied water) for export production and about 1/3 of freshwater resources is too polluted to serve for any other production purposes.