

Uncovering drivers of changes in China's water footprint

Topic: Environmental Applications

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China's enormous water stress caused by rapidly growing economy creates serious water problems. Understanding the key drivers underlying China's water footprint is critical for the future water management policies and provides guidance for other water-deficient countries' sustainable water usage. This study used input-output structural decomposition analysis to investigate relative contributions of driving forces to China's water footprint variation during 2002-2010, as well as the policy implications of these drivers for China's water sustainability. Results show that a) per capita final demand and population were the principal contributors to offset the water footprint increase. b) Water use efficiency, final demand mix, final demand composition, and technical change had negative effects on water footprint increase. c) the internal water footprint always be the primary composition of China's total water footprint. From the final demand perspective, urban household consumption and gross capital formation account for more than 70% water footprint from 2002 to 2010. Main policy points for China's water sustainability are as follows: a) Agriculture should be the main focus to reduce the water resource pressure in the future. b) External water footprint should be an important water supplement to alleviate water pressure of China. c) To reduce water footprint, strong policies in water-use efficiency, final demand composition, final demand mix, and technical change are required and water-saving lifestyles should be encouraged.