

Reconciling multiple uses of water resources: a case study of the megacities of São Paulo and Shanghai

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Abstract

"High levels of urbanization have created great demands on water quantity and quality – sanitary infrastructure, which has not kept pace with population growth, now requires large-scale investments" (HOGAN, 1993: p. 77). Carmo et al. (2014) noted that there is a significant correlation between rising incomes and water consumption, implying that the economic development of cities can lead to a higher percentage of the population having access to safe drinking water, but also allowing for an increase of consumption. Through the urbanization process, new consumption patterns and lifestyles emerge within the city, so local governments must promote responsible consumption and production patterns, not only for water, but for all natural resources in order to achieve a more sustainable development (ZHANG, 2016). Water stress due to climate change or an imbalance in its multiple uses can aggravate conflicts when poorly managed in urban and densely populated space, where the array of stakeholders is complex. This problem affects especially major cities in developing countries in Asia, Africa and Latin America.

Two of the most populous countries in two of those regions are China and Brazil, that have undergone very different development paths. For instance, when Brazil was still under Portuguese colonization, China had already established centuries-old cities. In the second half of the 20th century however, Brazil underwent one of the fastest urban transitions of all times. What has caused an acceleration in the Brazilian urbanization process, and what made China establish a slower and possibly more controlled pace? China has two major policies that greatly influence its urban growth: the Hukou system and fertility control, i.e. One/Two-Child Policy. The Hukou system controlled rural-urban migration and the One-Child Policy has led to a very small natural growth rate, and in some cities even to a decline, as in the case of Shanghai. The social,

economic and environmental challenges faced by Brazilian cities are of great complexity because planning processes were not able to keep up with this increase in urban population. This rapid change has not taken place in a harmonious way, being particularly harsh on the poorer contingent of the population and adding a burden to the most vulnerable (MARTINE; MCGRANAHAN, 2010).

São Paulo's metropolitan region, for example, has suffered from water stress over the past years. Will a mega project like the South–North Water Transfer Project bring about challenges of water scarcity to Shanghai's population, like its Brazilian counterpart? This project analyses socio-demographic variables relating population volume, number of households, urbanization level and water consumption (both domestic and non-domestic), for comparing these two undoubtedly different development paths, that can present more similarities between each other than the European trajectories that originated most demographic theories.

Keywords: water resources, urbanization, demography, megacities.