

Portland State University

**PDXScholar**

---

Institute for Sustainable Solutions Publications  
and Presentations

Institute for Sustainable Solutions


---

3-2014

# Diverted opportunity: Inequality and what the SouthNorth Water Transfer Project really means for China

Britt Crow-Miller  
*Portland State University*

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/iss\\_pub](https://pdxscholar.library.pdx.edu/iss_pub)

 Part of the [Sustainability Commons](#), [Urban Studies and Planning Commons](#), and the [Water Resource Management Commons](#)

**Let us know how access to this document benefits you.**

---

## Citation Details

Crow-Miller, Britt. 2014. "Diverted Opportunity: Inequality and what the South-North Water Transfer Project really means for China's future." GWF Discussion Paper 1409, Global Water Forum, Canberra, Australia

This Article is brought to you for free and open access. It has been accepted for inclusion in Institute for Sustainable Solutions Publications and Presentations by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

## Diverted opportunity: Inequality and what the South-North Water Transfer Project really means for China

POSTED ON MARCH 4, 2014 IN WATER SECURITY

Dr. Britt Crow-Miller, Portland State University, United States



Built in just over a decade, China's South-North Water Transfer Project (SNWTP) cuts across the country's northern flats, through a patchwork of dusty plains, irrigated fields green with millet, and massive cities of steel and concrete rising up out of the yellow earth. The project's Middle Route, completed on December 25, 2013, will soon begin moving 3.5 trillion gallons of water annually from the Danjiangkou Reservoir, fed by the Han River basin in central China, northward to the North China Plain (NCP) (see Figure 1).

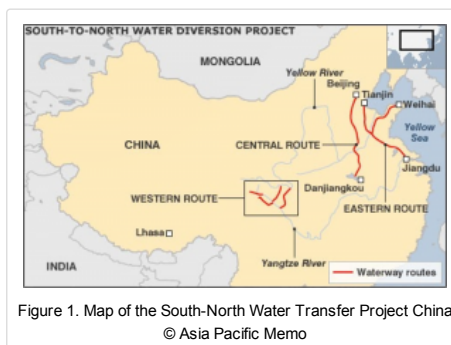
The NCP, on the northern edge of which lies Beijing, is an epicenter of China's rapid urban and economic growth. Climatically semi-arid, the region's natural water supply — in

combination with several institutional factors — is ill-suited to stand up against the anthropogenic stresses, such as severe industrial water pollution, that have accompanied such dramatic growth. The water transferred by the SNWTP is intended to augment the region's water supply and allow it to continue on its current growth trajectory, the continued success of which is a significant factor in the Chinese Communist Party's ability to maintain legitimacy. But the liquid lifeline comes at a higher price to some than others.

In addition to a 62 billion USD price tag, constructing the world's largest water transfer project to date<sup>1</sup> has required the relocation of more than 330,000 people,<sup>2</sup> many of whom are dissatisfied with the compensation packages they have received. Environmental impacts, including a dramatic decline in the volume of the Yangtze River (of which the Han is a major tributary), estuary salinization, and the breakdown of biogeographic barriers<sup>3,4</sup> are expected as a result of the project. One particularly concerning pattern emerging in the wake of the SNWTP is the reinforcement and potential exacerbation of existing rural-urban and regional inequalities.

Rural-urban and regional inequality are a major feature of post-reform China.<sup>5</sup> A lubricant for industrial and urban expansion, water is a fundamental input for growth and development both in the already booming cities like Beijing and Tianjin, and in the smaller cities and rural towns that have been largely left behind in the rapture of Chinese development. In diverting water away from certain places and uses, the SNWTP reflects the Chinese government's normative stance on where growth and development should be most concentrated. Once again, the already marginalized smaller cities and rural towns are losing out.

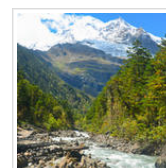
At one scale, the project's transfer of vast volumes of water from the Yangtze River Basin clearly reflects the prioritization of North China's water needs over those of the donor basin region in south-central China. For example, with a population of more than ten million, the city of Wuhan is built up around East Lake (*Donghu*), which once served as its primary source of water. But severe industrial pollution<sup>6</sup> has rendered the lake's waters unfit to meet the growing city's needs and Wuhan now draws 100% of its water supply from the Yangtze and Han Rivers.<sup>7</sup>



### Related Articles:



[Nature's silent currency](#)



[Vulnerabilities to hydropower development on the Nu River, China](#)



[Evolution of global developments in urban water management: Part 2 of 2](#)



[Indirect management of cross-boundary water sustainability using Virtual Water](#)



[The Brahmaputra: Water hotspot in Himalayan Asia](#)

### DISCUSSION TOPICS

- [Agriculture \(28\)](#)
- [Development \(32\)](#)
- [Economics \(44\)](#)
- [Energy \(30\)](#)
- [Environment \(22\)](#)

Several academics interviewed in Wuhan expressed concern over the future water supply of their city, particularly in the dry season and dry years, during which the project is estimated to cause up to a 20 percent reduction in surface water flow in the Yangtze River (the expected annual flow reduction is 4-5 percent).<sup>3</sup> Supplying the NCP with water — while certainly a pressing concern requiring immediate attention for social and economic as well as political reasons — is ultimately more important to the Chinese government at present than maintaining a healthy water supply for a major city like Wuhan over the long term.

A high-ranking government-employed urban planner interviewed in Beijing highlighted how the SNWTP prioritizes Beijing's water needs over those of its neighbors to the south:

*“Of course [the project] will have an impact [on the south]. [...] The water levels of Danjiangkou Reservoir will increase, flooding a large area and requiring people to relocate. It could also cause some ecological problems. Some of the cities in the south, especially in some areas of Hebei Province, have definitely made a very big sacrifice for Beijing and the North China Plain”*.<sup>8</sup>

In addition to these concerns, conversations with officials draw attention to the critical issue of sacrifice (*xisheng* 牺牲). By sacrificing water to meet the needs of the north, Hebei, Henan and the entire Han and Middle Yangtze River Basin are actually sacrificing opportunity and compromising their future. In other words, because water is a fundamental ingredient for socio-economic development, its spatial relocation also relocates development opportunity and growth prospects. This establishes a new spatial pattern of inequality, the effects of which may not be fully experienced for years to come, but which are likely to persist until water management priorities shift, perhaps several decades from now.

Another urban planner in North China alluded to this underappreciated impact of the SNWTP:

*“The South-North Water Transfer Project will increase the pace of urban development [...] in the East. It is a major source of support for this. Without the project, China's urban development might be more [geographically] balanced but the pace would slacken”*.<sup>9</sup>

Put differently, the SNWTP will support continued urban and therefore economic development on the North China Plain, rather than allowing growth in that region to naturally slow down as a result of water stress and forcing investment and growth in other regions.

The case of China's SNWTP reminds us of the fundamentally political nature of water management in the twenty-first century. Where water flows, in what amount, and for what purpose is the result not only of natural and biophysical factors such as a climate and topography, but, importantly, of human interests and institutions. As a fundamental input for socio-economic development, water carries in its flows the opportunity for future development. So, as the SNWTP re-channels those flows across central China and the NCP, it remakes the country's landscape of opportunity.

Not only does the SNWTP reflect existing spatially articulated power discrepancies, but it reinforces and potentially exacerbates those inequalities by prioritizing Beijing's present and future water needs above those of its neighbors and locking them in place for decades to come. Smaller, regional cities and rural areas — Shijiazhuang and Baoding in Hebei, Nanyang in Henan and the gritty, struggling towns and villages around Danjiangkou Reservoir — might have gained much-needed jobs and government investment in the short term around the construction of the Middle Route, but without access to adequate water resources over the long-run, the SNWTP ensures a bleak future for these kinds of places.

#### References:

1. Liu, Jianguo and Wu Yang. “Water Sustainability for China and Beyond.” *Science*, Vol. 337, 2012: 649-650.
2. International Rivers, 2013. Available at: [www.internationalrivers.org/](http://www.internationalrivers.org/)
3. Zhang, Quanfa. “The South-to-North Water Transfer Project of China: Environmental Implications and Monitoring Strategy.” *Journal of the American Water Resources Association*, Vol. 45.5, 2009: 1238-1247.
4. Meador, Michael R. “Inter-basin Water Transfer: Ecological Concerns.” *Fisheries*, Vol. 17.2, 1992: 17-22.
5. Fan, C. Cindy and Mingjie Sun. “Regional inequality in China, 1978-2006.” *Eurasian Geography and Economics*, 49.1, 2008: 1-20.
6. <http://www.theguardian.com/news/gallery/2007/jul/18/china.pollution?picture=330216042>
7. Asian Development Bank. “Increasing Climate Change Resilience of Urban Water Infrastructure: Based on a Case Study from Wuhan City, People's Republic of China.” 2013. Available at: <http://www.adb.org/sites/default/files/pub/2013/guidebook-climate-change-resilience.pdf>
8. Personal communication with Sun Mingsheng\*, Beijing, China. 12/8/2011.
9. Personal communication with Wang Hongwu\*, 11/21/2011.

Governance (27)  
International Water Politics (11)  
Transboundary (27)  
Urban Water (22)  
Water Quality (22)  
Water Security (47)

NEWSLETTER

Subscribe

#### Editor's Picks

- 1 The Blue Nile dam controversy in the eyes of international law  
Dr. Zeray Yihdego
- 2 Integrated Water Resources Management: What is it and why is it used?  
Chris White
- 3 Water governance challenges in Colombia  
Daphne Willems
- 4 Shale gas in India: The wrong path?  
Prof. Asit K. Biswas & Julian Kirchherr

REGIONS

Africa Amazon Argentina  
Asia Australia  
Bangladesh Brazil  
Cambodia Canada China  
Colorado Ebro Ecuador Egypt  
Ethiopia Europe Ganges  
India Kenya Laos Latin  
America and the  
Caribbean Mekong  
Mexico Murray-Darling  
Nepal Nile Northern  
America  
Oceania Ogallala Aquifer  
Pakistan Paraguay Peru Rwanda  
South Africa South Sudan  
Spain Sudan Tanzania  
Thailand Uganda United Kingdom  
United States  
Uruguay Vietnam Zambia

\*Pseudonyms are used to protect the identity of those contributing to this research

*Splitting time between Los Angeles and North China, Crow-Miller has spent the last four years conducting research on the underlying political-economic agendas driving the South-North Water Transfer Project and its social and environmental impacts. She holds a Ph.D. in Geography from UCLA and an M.A. in Regional Studies–East Asia from Harvard University. She currently serves as Research Assistant Professor at the Institute for Sustainable Solutions at Portland State University in Portland, OR. You can follow her posts on water in China on twitter @bcrowmiller.*

The views expressed in this article belong to the individual authors and do not represent the views of the Global Water Forum, the UNESCO Chair in Water Economics and Transboundary Water Governance, UNESCO, the Australian National University, or any of the institutions to which the authors are associated. Please see the Global Water Forum terms and conditions [here](#).

Related Articles:



Water stewardship, business leadership



Dammed if you do...



China's political system, economic reform, and the governance of water quality in Pearl River



Evolution of global developments in urban water management: Part 2 of 2



Indirect management of cross-boundary water sustainability using Virtual Water

TAGGED WITH → [Asia](#) • [China](#) • [Yangtze](#)

SHARE →



1 Comment

Global Water Forum

Login ▾

Sort by Best ▾

Share Favorite



Join the discussion...



Huw • 8 months ago

\*\*I think you mean Hubei and Hunan, which are in the Yangtze basin, rather than Hebei and Henan which are in the north.

^ | ▾ • Reply • Share ▸

Subscribe

Add Disqus to your site

Privacy

GLOBAL WATER FORUM



DISCLAIMER

© 2014 Global Water Forum  
The authors are responsible for the choice and presentation of views contained in this website and for opinions expressed therein, which are not necessarily those of UNESCO and do not commit the Organisation.

FOLLOW

NEWSLETTER

If you wish to subscribe to the Global Water Forum newsletter please enter your email below:

Subscribe

TRANSLATE



Select Language ▾

Powered by Google Translate