Final Progress Report
Sustainability Science Program
Term: September 1, 2013 – August 1, 2014

Name:
Scott Moore

Your fields:
Political science; Environmental Studies; Water resource politics and policy

Your degree program, institution and graduation date:
DPhil, Politics, University of Oxford, 2013

Faculty host at Harvard name and department:
Henry Lee, Harvard Kennedy School

Description of SSP-related research activity:

Market-Based Responses to Water Scarcity in China, an outgrowth of my previous research on water resource management in northern China, this project focuses on barriers to using market-based mechanisms, especially water price reform and water rights trading, to addressing water scarcity within the distinctive case of China.

Abstract:
The People's Republic of China is the scene of a curious contradiction. Despite China being the source of most of Asia's major rivers and in possession of the world's fifth-largest national endowments of freshwater, water scarcity increasingly imposes a constraint on its economic and social development. In response, the Chinese government has enacted a variety of technical, regulatory, and economic measures. Yet the last of these will in many ways determine the extent to which China is able to meet its water scarcity challenge. Even the gargantuan South-North Water Transfer Project, which aims to eventually pump 45 cubic kilometers of water annually from China's wetter southern regions, will not obviate the fact that demand for water will exceed supply in northern China. As a result, difficult choices must be made concerning who gets how much water—and China's government has determined that market-based responses will play a leading role in this allocation. Yet before detailing these market-based mechanisms, it is first necessary to detail the impetus for the introduction of water right trading programs in China, both in light of the country's water scarcity challenge as well as the general appeal of water rights trading relative to other economic, technical, and regulatory responses to water scarcity around the world. This project and the resulting paper accordingly first details the key dimensions of water scarcity in China, then describes water rights trading (WRT), and finally places WRT within the context of China's overall policy response to water scarcity since the foundation of the People's Republic in 1949.

Identification of the problem you address:
Although the Chinese government has identified market-based responses as a key element of its response to water scarcity, the use of these mechanisms remains very limited in scale and geographic scope.

Key question asked about the problem:
What barriers inhibit the scaling-up of market-based responses to water scarcity, and how might they be overcome?

The methods by which you answered that question:
Extended fieldwork in China, which will include documentary research at the National Library of China, the Library of the Ministry of Water Resources, and several dozen interviews with academics, journalists, and government officials. In addition I plan to conduct at least one field visit in western China.

Principle literature upon which the research drew:
This project draws mainly on the substantive literature on water resource management, with limited applicability of common-pool resource management literature (of which Elinor Ostrom is the foremost contributor).

Empirical data acquisition description:
Extended fieldwork in China using the methods described above will constitute the majority of empirical data acquisition, supplemented by online literature searches conducted in English and Chinese prior to departure.

Geographical region studied:
North China

Recommendations that might be relevant for your problem:
China must strengthen inter-governmental coordination and rule of law for water rights trading to function effectively.

A description of the final product(s) you have/are aiming to produce:
BCSIA/SSP Working Paper, article in *Water Policy.* As of the date of submission of this report, a final draft of the Working Paper is under review by Henry Lee, and a manuscript is under review with *Water Policy*.

Description of major other intellectual or professional advancement activity(ies) over the past academic year:
Job search, specifically targeting think-tanks and public policy research institutions, as well as extended fieldwork in China to examine Water Rights Trading in December 2013 – February 2014.

Please list citations for reports, papers, publications and presentations that built on your fellowship research:

"Modernization, Authoritarianism, and the Environment: the Politics of China's South-North Water Transfer Project," *Environmental Politics* 23 (6), November 2014 *[Forthcoming]*

> China represents something of a paradox for scholars of environmental politics. Environmental politics and policymaking in China now includes elements critical to environmental protection in the west, including non-governmental participation and stringent environmental legislation. Yet the country's authoritarian system constrains popular participation, and environmental outcomes are generally poor. China's South-North Water Transfer Project (SNWTP) embodies this puzzle: despite the pluralization and development of environmental politics and policymaking, the SNWTP is a technocratic mega-project that imposes high social, economic, and environmental costs. What explains this puzzle, and what are the implications for understanding environmental politics in other authoritarian-developing countries? I evaluate two current theories, Ecological Modernization and Authoritarian Environmentalism against the SNWTP case, and argue that it illustrates the ability of governments to co-opt environmental politics to pursue other strategic objectives, in turn necessitating greater attention to the mix of persuasive and coercive strategies in environmental politics.

"Hydropolitics in China: the Pursuit of Localized Preferences in a Centralized System," *The China Quarterly* 218, September 2014, 1-21.

> Inter-jurisdictional water resource issues constitute a growing political and economic challenge in China. This article examines three such cases of hydropolitics, namely large dam construction, water resource allocation, and downstream water pollution, through the lens of central-local relations. It

argues that hydropolitics in China are characterized by the pursuit of localized preferences within the constraints imposed by a centralized political system. In each case, the primary actors are sub-national administrative units, who adopt various competitive strategies to pursue their own localized interests at the expense of neighboring jurisdictions. This article argues that although vertical control mechanisms in the Chinese system effectively limit central-local preference divergence, they do little to contain horizontal conflicts between sub-national administrative units. The paucity of formal inter-jurisdictional dispute resolution mechanisms is a major barrier to meeting water resource challenges, and inter-jurisdictional collective action problems are likely to pose growing difficulties for the Chinese political system.

"Pollution Without Revolution: Why China's environmental crisis won't bring down the regime," *Foreign Affairs*, June 11, 2014.

"The United States of China," *The International New York Times*, March 11, 2014.

"Why China Needs New Institutions to Cope With Looming Water Scarcity," *Scholars Strategy Network Key Findings*, Scholars Strategy Network, March 2014.

"China Must Strengthen its Institutions Before Unleashing Market Forces," *South China Morning Post*, November 19, 2013.

"California's Sub-National Diplomacy: the Right Approach," *The Diplomat*, October 11, 2013.

"Cooperation, Not Litigation, Best for Managing Water Resources," *Orlando Sentinel*, September 30, 2013.

Please describe any collaborative activities with other SSP Fellows that you are involved with.
Report from workshop organized with other SSP fellows in 2013 published:

"The Role of Information and Communications Technology (ICT) in Helping Decision-Makers Meet Food, Energy and Water (FEW) Needs," *Sustainability Science Program Working Paper 2013-02*, Harvard Kennedy School, November 2013. (co-authored with Sharmila Murthy, Laura Pereira, Alicia Harley, Daniel Shemie, Eunjee Lee, Patricia Guardabassi, and Chao Zhang)

Principal collaborators outside Harvard:
NA

List any awards or grants that you have received this year for the current or coming year:
International Affairs Fellowship, Council on Foreign Relations, 2014
If you are moving to a new position, please list your contact information there:
Office of China and Mongolia, Bureau of East Asian and Pacific Affairs, US Department of State