

Cultivating pathways to ecological agriculture:

Rural-urban interfaces and regional dynamics in the agri-food sector in Nanjing, China

China's food and agriculture policies and market dynamics have a huge impact at home and abroad, affecting social and economic stability and international relations. Understanding these dynamics is key to understanding global food futures. There is a growing consensus across China of the urgency of developing an agri-food system to jointly advance the goals of crop productivity, resource stewardship, health, social well-being, farm income, and rural development. As China is becoming predominantly urban and incomes rise, and amid consumer food safety concerns, agri-food markets are increasingly geared to consumer demands for higher value products such as certified organic and 'green' food. Chinese agriculture since 1980 has rapidly become more professionalized and commercialized, with the rise of Chinese agri-business. Moreover, a growing number of Chinese investors are putting their capital in the agricultural sector for the first time. As a result, large-scale production is growing fast in China, with land being transferred and consolidated from farmers to large enterprises. Many of these operations are growing organic and 'green' food, and there is considerable state support for such enterprises in an effort to stimulate agricultural modernization. Yet, ecological agriculture can be interpreted rather loosely, and a weak version of sustainability has been the result in most of these cases. Such examples of utilizing environmental science to pursue economic advantage are what some have called the 'bio-economy', in contrast to a more regionally-embedded 'eco-economy' in the agri-food sector. Examples of the latter include some forms of institutional food procurement and selling through 'alternative food networks' such as direct marketing through farms box schemes (CSAs) and farmers' markets. There are thus conflicting goals and visions—from the state, the private sector, and 'civil society' and social enterprises—for developing a more ecologically sound food system. Bringing these contrasting initiatives into clearer perspective can be valuable for informing academic and public debates about how to achieve these goals.

The goal of this research is to provide an analysis and assessment of new directions in the agri-food sector around the city of Nanjing, with the aim to support state- and civil society-led initiatives for stronger sustainability outcomes. This work builds on past research of the PI and other team members, taking it to a regional scale for a more in-depth localized analysis to understand in situ dynamics and strategies to overcome challenges. We recognize that the characteristics of the bio- and eco-economy derived from case studies in Europe will be rather different from China, given the unique political economic environment of state-regulated market-economy with strong state support for large enterprises and vertical integration in the ecological agriculture sector, and where alternative and radical approaches are more muted. Nevertheless, China seems a particularly valuable setting to carry out this study for three reasons: (1) the extent of environmental degradation facing China's agri-food sector; (2) the fast pace of bio-economy developments in the private sector, many of which receive strong state support; (3) the recent but rapid emergence of eco-economy alternatives, inspired by initiatives internationally but with distinct endogenous characteristics.

This project has strong potential for significant research contributions and policy relevance. This analysis will reveal the dominant sustainability framings that are informing rural and agri-food developments in a given context. Through a combination of surveys and semi-structured

interviews, this study highlights contestations between these two 'economies' and will offer insights into the future of rural spaces and rural-urban relations, and strategies for scaling up the eco-economy. The application of the bio-/eco-economy concepts to studying China's ecological agriculture sector is novel and will yield new insights for the proposed research and subsequent work that builds off the application of our framework in a Chinese context.