

# **Payment for Watershed Services in China: Role of Government and Market, a Diagnostic Study**

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In the past 20 years, the Chinese economy has sustained an average annual growth rate of 9.5%. Two consequences of the fast growing Chinese economy are: 1) a decreasing supply of watershed services as more and more watersheds are claimed or polluted by economic development; 2) increasing demand for watershed services: public demand for watershed services grows fast alongside increasing income. To address this demand, the central government has launched several large scale payment for environmental services (PES) programs, such as the Sloping Land Conversion Program (SLCP). Local initiatives have also emerged. This research identifies PES schemes in China and explores the institutional context governing whether these schemes can work or not.

The paper address the following research questions:

- How do agricultural policies and environmental policies conflict with each other with regards to land use in watersheds, most of which are sloping uplands?
- What is the potential for economic instruments such as payment for watershed services (PWS) to address the problem of insufficient supply of watershed services?
- What is the nature of large national public payment schemes such as the SLCP and are they financially sustainable?
- What is the role of government in establishing the market infrastructure for PWS?
- What is the niche for PWS among a variety of policy instruments in watershed management?

The authors reviewed the impacts of three major policies on PWS in China: agricultural policy, forest policy, and WTO accession. Five case studies were made across four provinces of China (Jiangxi, Zhejiang, Hunan, and Yunnan), dealing with PWS in different scales of watershed, four of which are host to upland livelihoods.

The major findings and conclusions of the study are:

- There are two major drivers that move PWS or eco-compensation in China. One is the supply-side upstream government and communities. The other is the higher level of government. This contrasts sharply with PWS schemes in the rest of the world, where demand-side is the main driver.
- Most eco-compensation programs in China have no livelihood impacts at the household

level but might have welfare impact at the regional level. A few large public programs do have livelihood impacts.

- It is widely accepted in Chinese academia and the policy-making arena that government should dominate PWS schemes because of the public nature of watershed services. However, government dominance of PWS schemes in China results from two other major reasons besides this: firstly, the ambiguity of property rights for the land or forest which provides environmental services. Secondly, the Chinese government is powerful with plenty of resources (financial/institutional/political) that can lower transaction costs.
- The market has a role to play where the watershed is relatively small, the number of involved parties is limited, services are well defined, and the demand-side downstream party shows clear willingness to pay.
- Large public schemes face financial constraints and other limitations. Local PWS initiatives usually have a single objective, i.e. payment for watershed services, and are more robust in a volatile macro-economic and political environment.
- China's accession to the WTO and over 50 international environmental treaties has had positive impacts on the development of local market-led PWS initiatives. Ambiguity in property rights for land, forest, water and other natural resources is the biggest obstacle to market development in China.
- The market has little room to play its role if the ambiguity of property rights remains unchanged. The role of government in eco-compensation schemes should be changed from that of buyer to facilitator. Facilitation work includes i) defining property rights and making these workable and legally practical; ii) monitoring and measuring environmental services in a timely and transparent manner; and iii) dealing with litigation and enforcing the PWS contracts.