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Irrigation in the Tarim Basin (China): Farmers’ Response to Changes in Water Pricing Practices

YUSUYUNJIANG MAMITIMIN¹, TIL FEIKE¹, ISABEL SEIFERT², REINER DOLUSCHITZ¹

¹*University of Hohenheim, Institute of Farm Management, Germany*

²*Norwegian Institute of Water Research, Section of Climate and Environmental Modeling, Norway*

Abstract

The Tarim River is the longest inland river in China, located in the extremely arid southern part of Xinjiang Uyghur Autonomous Region. The Tarim River basin is an important cotton and fruit production base. However, extensive land reclamation combined with unreasonable water use over the last 50 years required a large amount of water to be diverted to irrigation. This resulted in a continuous reduction of water flowing to the mainstream of Tarim River with a negative ecological impact in the lower reaches of the river. Additionally water scarcity became the major factor to restrict the social and economic development of the region.

With water availability declining in many regions, it is becoming increasingly important to allocate and use this essential resource efficiently. Water pricing is an important instrument to improve water allocation and encourage users to conserve scarce water resources. Prices which accurately reflect water’s economic, or scarcity value give information to users, which they use to make choices regarding water consumption and use.

To identify whether water pricing policies can lead to an increase in farmers’ water use efficiency, 128 farmers were interviewed using structured questionnaires in different parts of the Tarim River. The results show that most of the farmers are willing to pay a higher price for better service. However, water pricing policies could not lead to a significant increase in farmers’ water use efficiency without additional agricultural policies and regulations. Another major finding is that according to farmers’ response water right tradings can be one option to reduce the severity of water shortages, but it could do little to raise farmers’ income.

Keywords: China, Tarim river, water pricing, water right trading, water scarcity