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“Development on the margin”

## Understanding the Farmer's Behaviour towards Water Saving Irrigation Technologies

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### Abstract

The North China Plain (NCP) is one of the most important areas of agricultural production in China but most of its agricultural production depend on irrigation. An intensive double cropping system i.e., winter wheat and summer maize has made this region as the major grain provider of China. Therefore, it is also been called as the bowl of China, providing about one fifth of China's total food production. With the dwindling western mountain runoff and drying up of many perennial rivers, groundwater has become the only reliable water resource and agricultural development is now totally dependent on groundwater. This lead to the decline in the groundwater water at an average rate of about 1–1.5 m year<sup>-1</sup>.

Previous studies suggested that there are several possibilities to optimise the cropping system so as to achieve high yields while still focusing on sustainable water use. For example, changes in irrigation schedules, cropping systems and irrigation technology will help to reduce the water consumption which is generated by agriculture. This raises many questions, concerning the farmer's irrigation strategies, perspective and their behaviour towards irrigation management practices. The objective of this study is to find out those factors which affect the farmer's decision on irrigation management. A qualitative survey was conducted in the Hebei province, to assess the irrigation method, socio-economic factors and the awareness of the water problem. Later, a regression model is used and price of water pumping and lack of awareness about water shortage were found out to be the major factors influencing the present irrigation practices in this region. Additionally, benefits of applying water saving irrigation technology should be clearly introduced to the farmers not only in terms of economical benefits but also in terms of the necessity for sustainable development of agriculture specialised in irrigation water. It is also suggested that technical extension services and training will help to improve the farmer's awareness of the present irrigation situation and their knowledge of water saving irrigation methods. Finally, without technical and adequate financial support, farmers are less likely to change.

**Keywords:** Irrigation, North China Plain, sustainable agricultural production, water saving technologies