

Study on Agricultural Water Right in Well Irrigation District in Henan Plain

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Abstract: China is a big agricultural province; agricultural production has been occupying a large proportion of China's industrial structure. Irrigation, as a vital link in agricultural production, is of great importance to agricultural production. With the rapid development of China's industrialization and urbanization, water use in industry and cities continues to increase. Due to the relatively high industrial benefits, many areas continue to transfer water resources to non-agricultural water such as industrial water. Therefore, China urgently needs to establish a modernized agricultural water right system to improve the sustainable development ability of agricultural water. The research on the agricultural water right in the well irrigation area of Henan plain not only saves groundwater resources but also promotes the establishment of an agricultural water right system.

1. Introduction

The Henan Plain is located in the eastern part of Henan Province, with mountains on the northwest, west, and south, and a vast plain in the east, with an area of about 8.53×10^4 km². Shallow groundwater is an essential source of water for industrial and agricultural production and domestic use in the Henan Plain. In the past 20 years, under the influence of arid climate, excessive groundwater extraction, large-scale water conservancy project construction, and other factors, the cyclic evolution conditions of the groundwater system in the Henan Plain have changed significantly. The unreasonable development and utilization of shallow groundwater in Anyang, Hebi, Liyang, Xinxiang, Zhengzhou, and other places in the Henan Plain caused geological disasters such as the decline of regional groundwater levels, ground subsidence, and ground fissures. To solve these problems fundamentally, it is necessary to study the regional groundwater circulation alternation law profoundly and then take water-saving measures to reduce groundwater extraction.

2. Problems existing in the establishment of agricultural water and water rights system

2.1 Lack of unified legal support for water rights transactions

China is an equitable society. The Ministry of Water Resources of China issued the "Interim Methods for the Management of Water Rights Transactions" on April 19, 2016, but only stipulated The basic content such as the type, subject, and scope of water rights transactions, and there is no detailed formulation of operable technical guidelines, the construction of water rights trading platforms, the definition of water rights, and the trading methods of water rights. There is a lack of uniform standards in all regions. At the same time, the "Temporary Method of Water Rights Transaction Management" does not make detailed regulations on the construction of the supervision system of the water rights trading market. In the event of violations such as disputes between the parties to the transaction and illegal transfer and use of water rights, there is no accurate basis for a definition, which is not beneficial Maintain the normal operation of the water rights market.

2.2 Farmers' lack of understanding of the water right system

The idea of a "small-scale farmer economy" for Chinese farmers is deeply entrenched, coupled with the fact that most of the agricultural water used in well irrigation districts in the plains use

underground water, and it is a “multiple households in one well” model. A sense of crisis in resources. Farmers believe that as long as they ensure adequate irrigation water and appropriate fertilizer use, food crops can be harvested. Therefore, the implementation of the water right system does not have a significant promotion effect on the production of farmers. On the contrary, if the initial water right amount is lower than the previous irrigation amount of the farmers themselves, the farmers will mistakenly believe that the implementation of the agricultural water right system will affect themselves.

The farmers will also have a cynical, negative willingness to the right water system, which may cause social conflicts.

As a result, farmers lack enthusiasm for the implementation of the water right system and even have a willingness to oppose it.

2.3 Difficulty in confirming rights

It is a necessary condition to determine the first water right for farmers to implement the water right system.

At present, there are two problems: First, there is ambiguity in the initial water right allocation by farmers.

The second is that after the operation test, the first water right that can meet the growing needs of the crop is far from the irrigation amount used by the farmers before. This indicates that there is a massive waste of water resources when the farmers are irrigating the crops.

It will also lead to a decrease in farmers’ sense of security in the agricultural production process. Based on this, farmers will make a judgment “there is a clear gap between the initial water right and their previous irrigation water consumption, and their grain output will be affected.”

Therefore, farmers will have resistance, which is not conducive to the regular operation of the agricultural water right system.

2.4 Difficulties in matching funds

Water rights trading for agricultural water requires the construction of metering facilities and water rights trading platforms. The installation and construction of this essential equipment require a large number of funds. However, the source of this part of the funds has not been clearly identified. After market surveys, including the installation of metering facilities and the construction of water rights trading platforms, at least 100 million yuan of capital investment is required, which is putting great pressure on local finances. If the construction of a water rights trading market is solely based on state subsidies, this will undoubtedly be a massive test for state finance. Local governments, therefore, have no initiative to implement the pilot implementation of the water right system for agricultural water use in their jurisdictions, and the corresponding supporting funds for the agricultural water right system need to have a clear source.

3. Research on countermeasures

3.1 Improving laws and regulations

At present, China's water rights trading system is only stipulated in the "Interim Measures for the Management of Water Rights Transaction" issued by the Ministry of Water Resources on April 19, 2016.

The transaction subject and time limit, the transaction price formation mechanism, and the operating rules of the trading platform made specific provisions, but did not indicate the role of the Water Rights Exchange in water rights transactions, and did not specify the method of resolving disputes in the transaction, and Information protection, etc.

Subsequently, the Ministry of Water Resources issued some documents to solve the above problems, but it is obvious that the temporary rights of the water rights trading system are low, without the support of laws and regulations, and the content is incomplete, and there is no coordination with other departmental laws, which will affect In the practical application of the

water right system, we should sum up experience, conduct research and theoretical analysis as soon as possible to formulate and improve scientific laws and regulations.

According to the regulations, water rights transactions are divided into three types, namely regional water rights transactions, water withdrawal rights transactions, and irrigation water user water rights transactions. The three types of transactions have significant differences in the transaction subject, transaction method, and transaction scope, so I think In the subsequent regulations, different regulations should be made according to different transaction methods, especially in dispute settlement, and the regional water rights transactions and water rights transactions should be focused on.

3.2 Avoiding Production Risks

According to Maslow's hierarchy of needs theory, human needs include five levels. From the perspective of psychological cognition, farmers 'inactivity in implementing the agricultural water and water rights system is based on farmers' security level needs.

Factors such as farmer's attitude to agricultural risk and fair perception of irrigation water affect farmers' judgment of safety conditions in the agricultural production process. The more positive the farmer's attitude to agricultural risk, the greater the perceived impact of irrigation water on the agricultural production process.

Measures to ensure the safe production process of agriculture to avoid damage to agricultural production caused by various natural and human factors. Local governments can use "water associations" to help farmers reduce various risks and ensure the smooth completion of agricultural production.

At the same time, it is also possible to rely on policy preferences to encourage insurance companies to establish corresponding water rights insurance types and transfer this part of the risk to third-party institutions, so that there is a creative construction in the insurance field.

3.3 Scientific calculation of agricultural water use rights and dynamic adjustment of total indicators

Because water rights are multi-year averages, the actual needs of water use vary from year to year. The actual annual water use rights enjoyed by water users should take into account the incoming water situation of each year.

The adjustment method is: according to the possible natural water conditions, crop planting plans, etc., predict the possible water supply and water demand for one year, micro-call the agricultural water right of the water user, and inform the water user of the annual water right.

When calling Mito's agricultural water right, it is necessary to handle the relationship between the increase and decrease of incoming water and the increase and decrease of water demand, grasp the extent of fine-tuning, and ensure the promotion of water right allocation to water resources management.

On the other hand, adherence to the principles of "fairness, openness, and justice" in the distribution of water rights will enable the rational distribution of water resources to those who really need them, thereby achieving the most efficient use of water resources.

Deal with the current and long-term, local and overall relations, and ensure the sustainable development of society and economy.

The state and local governments work together to support local governments to actively implement the water right system for agriculture. Corresponding funding sources can be provided by both the national and local finances in the initial stage. Local governments should actively attract enterprises to purchase excess water rights in the later stages.

To obtain certain benefits to maintain metering facilities and water rights trading platforms.

The local government can also form an interesting relationship between the agricultural water right within the jurisdiction and the relevant enterprises, and the enterprises should bear the input of supporting funds.

4. Conclusion

Most of the agricultural water used in well irrigation districts in the plains is groundwater. The implementation of the agricultural water right system can significantly improve the irrigation water consumption, and the water use in well irrigation areas is a "multiple households in one well" model.

It provides great convenience.

The implementation of the agricultural water right system in well irrigation districts has two meanings. On the one hand, the implementation of the agricultural water right system can save groundwater resources.

On the other hand, it can provide a useful reference for the formulation and implementation of other types of water and water rights systems.

Agricultural water rights trading is not as transactional as industrial water rights trading. Industrial water rights trading is more under the control of a certain amount of water. In order to solve production problems, enterprises trade water rights to solve the urgent needs, The industrial water and water rights transaction volume is very large, and it has obvious transactionality.

The overall trading volume of an agricultural water right is minimal, it is more reflected in the significance of saving groundwater.

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