

Irrigation Management Transfer in China

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INTRODUCTION

Irrigation has had a long tradition in China. Since the founding of the People's Republic of China, the Chinese Government has put great emphasis on irrigation. Farmers have dedicated themselves to making the maximum use of limited water and arable land. At present in China, the total irrigated farmland has reached 53 million ha of which, 50 million ha is effectively irrigated. The irrigated farmland, covering half of the total area under irrigation, produces 70 percent of the total grain output, 80 percent of the total cotton output and 90 percent of the total amount of vegetables.

Irrigation projects play an important part in the development of agriculture and rural economy. Besides the direct economic benefits from increasing agricultural products, irrigation projects have played a part in improving the environment, reforestation, water supply and navigation, thereby improving rural production and living conditions, and promoting regional socioeconomic development. Therefore, both direct economic benefits and indirect social environmental benefits from irrigation development are significant.

At present, there are 5,340 irrigation districts (667 ha and above) and over 20,000 small irrigation schemes. More than 80,000 reservoirs of various sizes with a total storage capacity of 468 billion cubic meters have been completed. Some 3.35 million tubewells and 0.49 million pumping stations have been installed for irrigation and drainage, amounting to 66 million KW. Small sluices, dams and ponds are widespread throughout the country.

These irrigation projects are owned and managed by the State, collectives and individuals, respectively. The responsibility and authority for irrigation are mainly determined according to investment. Projects invested in by the State are owned and managed by the State. Projects invested by collectives (subsidized by the State and with labor contribution of farmers) are owned and managed by the collectives while projects built by farmers (subsidized by the State) are owned and managed by themselves.

Large and medium irrigation projects are generally owned and managed by the State. An irrigation system within one administrative region is managed by a public organization under the jurisdiction of the water authority of the region. An irrigation system covers two or more administrative regions, and is managed by public organizations under the command of the higher water authority. A large irrigation district is usually managed by organizations at various levels, such as prefecture, county, township and village (see the following map).

Irrigation Management Development

The development process of China's irrigation management can be divided into two phases: highly centralized management and relatively independent management.

Highly Centralized Management

A majority of the key projects in large irrigation districts were completed in the 1950s and the 1960s. During that period the country was very poor. Based on the advantages of the socialist system, the spirit of self-reliance and hard work, and a highly centralized planning economic system, the State was able to concentrate its limited capital and material on carrying out socialized production. A great number of irrigation projects were completed. Agricultural production conditions were improved. For key projects, material and equipment were provided by the government; farmers contributed the labor. Conveyance systems were completed by communities and were subsidized by the government. Most irrigation districts were built jointly by the State, collectives and individuals.

Irrigation management organizations were generally appointed by the government through water authorities. Irrigation districts were managed according to the government's plan. Water was free. The operation and maintenance costs, as well as the salaries of the irrigation district staff were paid for through the Public Revenue. Part of the salaries of both contract and temporary workers was paid for through the Public Revenue and the other part was paid for by the collectives.

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Agriculture was organized on cooperative principles. Collective community was the popular form of agricultural settlements. In these communities, the means of production were communally owned and each member's work benefited all. After making a contribution to the State the rest of the production was allocated among members according to each member's contribution to the community.

Under the centralized economic system, irrigation districts were directly managed by the government. In spite of its shortcomings, this system played an important part in increasing productivity during that period.

[Relatively] Management

Since the 1980s, introduction of the production responsibility system in the countryside has motivated farmer's initiatives. Agriculture has developed dramatically. To be geared to the system, the irrigation management system has also changed from complete government control to contract management.

Irrigation management transfer is implemented on the principle of separating management rights from ownership. The Water Authority, which is the tender inviter, invites public bidding. The management organization, the bidder, makes a bid for irrigation management. The winner should sign a contract (for about 3 years) with the water authority. This is the first stage contract. The first stage contractor will invite public bidding and so on. The management station is the second stage contractor and the individual is the third.

Through contract management, the competition system was introduced. The management organization is optimized. The introduction of the contract management responsibility system brought about a dramatic change in the local responsibility and authority. The benefits are significant. It is necessary to improve and extend this kind of system.

APPROACHES TO INNOVATION ON PROPERTY RIGHT OF IRRIGATION DISTRICT AND IRRIGATION MANAGEMENT TRANSFER

With further reforms in the countryside, the contract management responsibility system began to show its limitations. The key factor of contract management is how to determine properly the base of the contract. The contract is based on the original property rights. The readjustment in benefits distribution is a constraint of property rights. So the contract base is often determined subjectively, not tallying with the economic law. Some contract targets such as revenue and expenditure, [intact] degree of the project, the irrigated area, production investment, water use efficiency, etc., have no clear relations with the improvement of management levels. So it is not easy to carry out these contract targets. Sometimes, a contractor competes for profit with the government but the government cannot limit the short-term action of the contractor. Some governments improperly interrupt the management of irrigation districts. Irrigation water fees cannot compensate for the cost. Irrigation management organizations are facing great difficulties in collecting irrigation water fees and raising funds to rehabilitate existing projects. They are not able to solve such problems by themselves. It is not easy to find a balance between the tender inviter and the bidder. Nobody will be responsible for the outcome of investment and management. This causes a great deal of losses of State-owned fixed assets.

With the establishment of the socialist market economic system, new irrigation management systems should be considered. It is important to determine the property right of irrigation districts and realize the separation of ownership, use and control. This could be done in the following manner:

1. Assess assets and determine property rights. The first thing to do is to assess the assets of irrigation districts and estimate the value of fixed assets. Then convert the total value into shares based on the capital and labor investment in the project. Shares consist of State shares, organization shares, collective shares and individual shares. Each entity has the nominal ownership of its shares and the right to share profits.
2. Set up a new management system according to the requirements of shareholders. To get their share of profits, shareholders have to retain the original assets and make profits. This can form a multi-property-right benefit continuum, consisting of the State, collectives and individuals. The desire for profits makes shareholders select modern management systems, e.g., shareholders' congress responsible for making important decisions, board of directors acting as legal representative and managers accountable for daily management. The manager can formulate internal regulations for irrigation management such as the target management responsibility system and the contract responsibility system.
3. Formulate an economic system for [good circle.] To retain simple reproduction and to expand production, irrigation districts must have stable incomes. These are water fees and shares in cash from beneficiaries. Shares of the State and collectives should reflect the favored policies for agriculture and water sectors.

Beneficiaries pay water fees and bear "shares" on the basis of irrigated area and water supplied. The benefits of these "shares" will not be reflected [though sharing of profits in cash but grain and side agricultural product increments.] Shareholders other than direct beneficiaries will share profits in cash.

EXPERIENCES WITH IRRIGATION MANAGEMENT TRANSFER

Numerous irrigation management transfer programs have been implemented in China. Laiyang in Shandong Province and Jiaozuo in Henan Province have been implementing irrigation management transfer programs for two years. The program is called a cooperative share system, i.e., the combination of a cooperative system and a share system. The cooperative share system has been implemented in 410 projects in 144 village in Laiyang. The total fixed assets amount to RMB 12.4 million yuan (US\$1.5 million). The fund raised by 28,000 shareholders totals RMB 20 million yuan (US\$2.5 million). The irrigated area has been increased by over 10,000 ha. Benefits have increased by RMB 6.5 million yuan (US\$0.8 million). The basic ideas of the program are: cooperation, enterprise management, democratic management and supervision.

Approaches of the cooperative share system for medium and small schemes are:

1. Assess assets. A group consisting of experts, management staff, village leaders and farmers, and farmers should be organized. This group will assess existing irrigation projects and keep accounts based on the existing fixed assets;
2. Convert the fixed assets into shares and make property rights clear. Based on the original labor and capital investments, divide shares among organizations and farmers. Each shareholder has equal rights to own the assets and share profits; and
3. Build up the project through the share system and manage it cooperatively. Shares can be cash, materials, labor, land and techniques, etc. Shareholders can be collectives, individuals, the community and enterprises.

Cooperative styles:

- * For a new project, after an economic evaluation, shares will be determined based on the principle of investor as owner. The project will be managed through the share system.
- * For an existing project, after converting the existing assets into shares and dividing them among all owners, the cost of rehabilitation and production expansion will be shared by all shareholders. The profit-sharing principle of the cooperative share system is: first, accumulation and discount and then, profit-sharing based on contribution and shares.
- * Formulate cooperative regulations. It is the basis of cooperative management. The regulation will reflect the right and duties of shareholders, the principle for profit-sharing, measures such setting criteria for project management and financial management systems, etc.

After the implementation of the cooperative share system, the principle of "people who invest in and manage the project will benefit by it" will be realized. The cooperative share system is the main style for irrigation management transfer.