A Review of Water Rights in Japan

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ABSTRACT: One of the water management systems based on the historical backgrounds in Japan is a system of water rights. The water of Japan's rivers has been dominated by a large number of river users with vested water rights. Water rights have generally developed as a customary right. It is very important for us to examine all possible measures not only water pricing but also water rights, and identify the best strategy that fits into local conditions or historical backgrounds in water policy. Water use in Japan is characterized as agricultural use in paddy fields, quite similar to the styles of most Asian countries. We should seek more effective policy in Asia based on the deep review of this system.

1 INTRODUCTION

It is important to manage water in a way that takes fully into account its economic, social, cultural and environmental values. The price of water is a key determinant of both the economic efficiency and the environmental effectiveness of water services (OECD 1999). However, it is important to check whether pricing can cover these values fully. As these values vary among countries and regions, depending on natural, social conditions or historical backgrounds, it is appropriate to examine by countries or regions what values should be considered in the context of cost recovery of water services provision. In Japan, irrigation systems have been providing wildlife habitats for water species or rural landscapes through the process of creating a semi-natural environment, where human beings and nature coexist for almost two thousand years. One of the systems based on the historical backgrounds in Japan is a system of water rights. In this paper, I would review and evaluate the system.

2 HISTORY OF WATER RIGHTS IN JAPAN

Water resources in Japan are very tight compare to the copious demand of a large population. In order to cope with the limited resources, the water of Japan's rivers has, throughout history, been dominated by a large number of river users with vested water rights. Water rights have generally developed as a customary right in Japan. As a right founded and consolidated on customary practices, regional agreements and voluntary conciliation played a main role in the settlement of disputes while making every effort to avoid the public authorities being drawn into the conflicts. Under these conditions, water rights have evolved in a long historical process as substantive social rights. The agricultural interests with their customary right of water use accounted for almost the entire amount of water used from the major rivers around 1870 (Sasaki et. al 1981).

The hallmark of this custom-based system of water use was that it tried to regulate disparate instances of water use. On the larger scale of the river basin as a whole, however, water used in the upper reaches is repeatedly used in the lower reaches of the river. Irrigation ponds had a function of extensive water use by collecting, storing and adjusting the water. In this way, whole system in river basins maximized possible repetition of water use. The system was developed over the years to provide secured water availability when

there was enough technology to increase the flow volume. It was organized on the principle that old water rights had priority and that owners of established water rights held on to their rights with tenacity (Tamai 1994)

The old River Law established in 1896 mainly focused on flood control and introduced an approval system for river water. However, those who had already possessed customary rights "should be deemed as having obtained such approval (Article 11 of the Enforcement Ordinance pertaining to the River Law). In the 1960s, Japan reached its economic takeoff with a rapid pace. The serious problem was that an expansion in water demand could not be coped with. Since the demand for urban water, including drinking (household supply) water and industrial water rose on a dramatic scale, water was considered as an important resource. Based on this consideration, the River Law was revised in 1964, and established integrated management of river systems. However, the customary rights of the past were subject to the permit system authorizing the use of water under the same conditions as before. Therefore, under the River Law, customary water rights are considered as being "approved de facto" (Article 87). Figure 1 shows that the volume of "de facto" water rights is more than 30% (Water Resources Department, National Land Agency 2000).

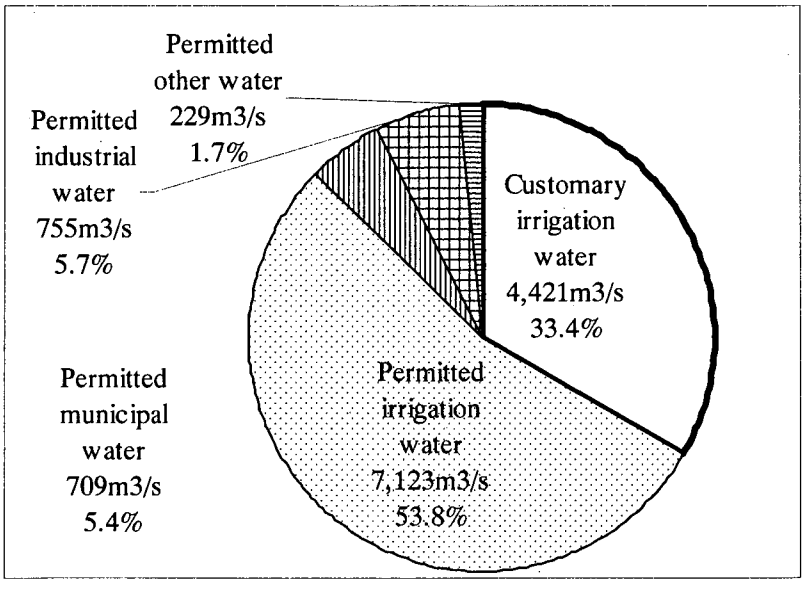

Figure 1. Specification of Water Rights

3 WATER POLICY AND WATER RIGHTS IN JAPAN

Based on the historical backgrounds, water rights have played an essential role in water policy in Japan. As Sasaki et. al (1981) wrote, regional communities have administrated independently, and water rights have been controlled by the communities. The River Law, first established in 1896, introduced a unified and consistent system of water management for all forms of water use under and official river administrators. This law authorizes water rights on basis of an assessment as to whether the public interest is served and as to whether the business activities related to the water use are relevant. While, 1964 revision of the River Law established a rule for conciliation during droughts. Drought conciliation is one of the management in water use in an emergency. The river administrators should be able to mediate and arbitrate in disputes when the water users were unable to reach an agreement in water conciliation. Hence, present water rights system is a combination of traditional and

comprehensive management. Here, water policy in Japan will be reviewed in regard to water rights.

3.1 Permission of water rights

River administrators, who are in charge of giving permission of water rights, consider following things for permission. (Figure 2: Water Use Coordination Sub-Division, Water Administration Division, River Bureau, Ministry of Construction 1995)

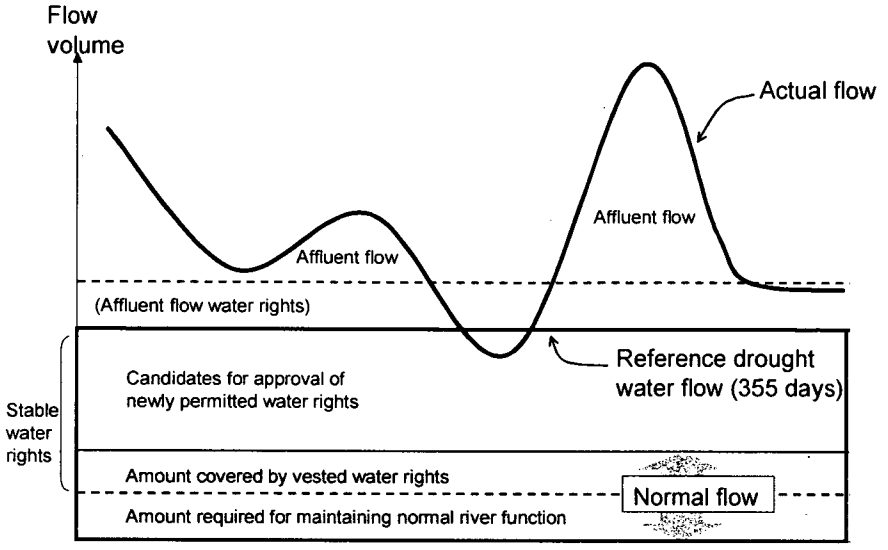

Figure 2. Water Rights System

1) Security of water intake

The requirement is that stable water intake must be possible in accordance with the flow conditions of the river without prejudice to the maintenance of the river's normal functions. In Japan, the practice is to grant permission on condition that the drought level of water flow (355 day flow volume) in a drought occurring at a probability of once in ten years is still greater than the normal flow volume of the river. The "normal flow" in this context is defined by allowing for the overall combination of all river functions, including the maintenance of the vested water rights, the shipping and fishing interests, and the quality (cleanness) of the water.

2) Purpose of water use and public benefit of activities

The activities for which water is used must be contributory to enhancing the living standard of the public and to increasing public welfare and well-being.

3) Practicability of water use

The operational plans for the water-using activities must be reasonable and the water use itself must stand up to the relevant laws and bylaws.

4) Detriment to public benefit

The use of water must not compromise flood control or be injurious to the public benefit in any other respect.

At present, a situation has already been reached in which the drought level of flow for many of Japan's rivers is equal to, or even less than, the normal river flow volume. The acquisition of new water rights is therefore dependent on the construction of water resource facilities such as dams to increase the drought level of

flow of rivers. When to create new potentials for water use through the construction of water resource development facilities, it has therefore been necessary to seek conciliation with these vested interests and file applications for development projects as constituting a new water right.

However, as is the case in some areas, the development of water resources cannot keep up with demand. In such cases, the practice is to authorize temporary water rights (affluent flow water rights in Figure 2) permitting the intake of water as an emergency measure only when the river flow is capable of covering the existing water use and there is a certain extra amount available. In 1994, the total volume of these affluent water rights amounted to 123.918 cubic meter per second (Ministry of Construction 1995).

3.2 Drought Conciliation

Since it is not easy to develop water resources for increased water demand, demand management is necessary. Because of the clash of interests among water users during drought, it became clear that the drought conciliation procedures presented insurmountable difficulties. The drought conciliation is one of the management even though it works only in severe drought. In Japan, Article 53 in the 1964 revised River Law ruled that drought conciliation should take place when the water users were unable to reach an agreement in water conciliation.

In 1958, the water users on the Tone River, the most important water resource for the Metropolitan Tokyo area, were unable to come to an agreement. The river administrator mediated the dispute and helped to resolve the issue by discharging the water stored in the hydropower dam reservoir upstream. This experience resulted in a deliberate effort to establish rules for water use coordination as a measure to come to terms with extreme droughts.

The principle underlying in this drought conciliation was that the water users should seek conciliation in the spirit of a fair give-and-take among themselves in the first instance and refer to the River Administrator for intervention in the conciliation process only when their attempts at mutual conciliation failed. The principle of giving priority to mutual conciliation was adopted for two main reasons: (1) The practice of conciliation among the water users was anchored in tradition as water users had historically resorted to mutual conciliation in the various river basins; (2) Drought differs from flood disasters in that it gives the water users sufficient time to reach a conciliation on water use (River Bureau, Ministry of Construction 1997).

Drought conciliation took place in 58 of the total of 109 major rivers, with drought conciliation councils consisting of the River Administrator and the water users concerned having been convened in 51 of them (approximately 90%). The remaining seven drought conciliation councils consisted only of the water users.

4 DISCUSSION ABOUT WATER RIGHTS

In Japan, water used in the upper reaches is repeatedly used in the lower reaches of the river, especially for paddy fields. This system can be called as sustainable water use system. Water rights in Japan have support water use system a long time. However, it cannot fully adapt various changes in demands and uses of water. The system needs more efficiency and accountability. We should make the best efforts to collect necessary data and research water rights in a primary step for better water use.

The flow volume of Japanese rivers varies significantly because of natural conditions such as climatic and topographic factors. Water resource development was promoted from the middle of the 1960s by focusing on the stabilization of river flow conditions and on dam construction to meet the new water demand that had arisen as a result of massive population concentration in the major cities and industrial development. The success in achieving a stable supply of water had the effect of accelerating the pace of economic growth and the population drift to the large cities. This, in turn, created a new demand for water and led to a substantial increase in water

use from the major rivers. The availability of drinking water supply resulted in a major population drift into the major urban regions and encouraged the construction of large-scale public facilities. Demographic changes also came into play as families became smaller with a resulting increase in the number of households. In view of this increase in water demands, efforts were made to promote the development of water resources and to use agricultural water more efficiently, such as readjustment of cultivated fields and modification of irrigation water channels. The latter efforts make this saved water available for alternative use for city water supply.

However, it has become more difficult to implement these efforts. On the one hand, the construction of new water development facilities is becoming difficult because of the decrease in suitable grounds. On the other hand, there is a controversy about agricultural water. While people insist that customary water rights, most of which are for agriculture, should be changed for alternative uses, farmers insist that such a change would lose flexibility in their use and give a harmful effect to agriculture (River Council 1999). More than 90% of water use for agriculture is rice paddies. As shown in Figure 3, land use for flooding paddies has decreased in the decades, but the need to maintain water levels of the past for the diversion from a channel means that demand for water does not immediately decline (Water Department, MLIT 2002). It is also important that demand controls of water use in paddy fields are extremely difficult because of their characteristic cycle in using water (Tanji 2002).

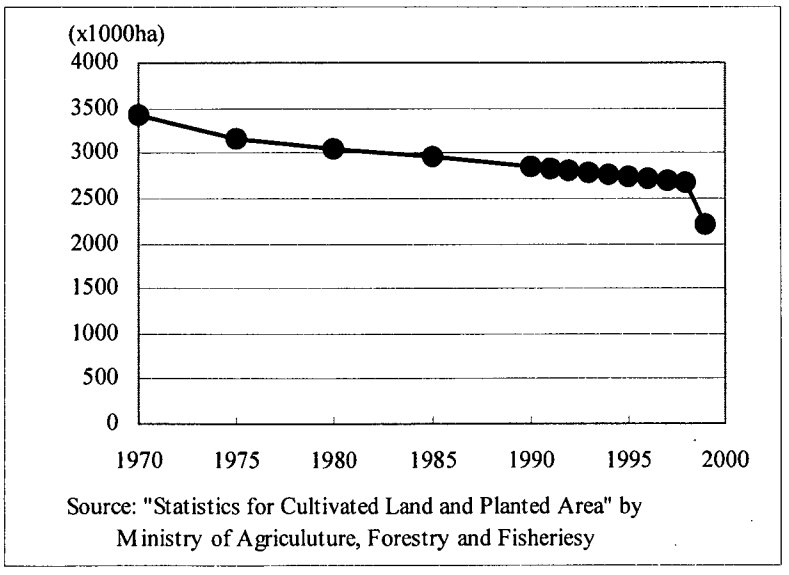

Figure 3. Trend in Cultivated Land of Paddies

Therefore, we should seek efficient water management including water rights system. There are still large parts of customary rights, and most of which are not monitored and do not have enough data either. Collecting data, such as how much water under the customary rights is taken or discharged, is the first step for efficient water use. Also, as people's concerns toward water and the environment rise, public involvement and consensus building with proper information have become indispensable. In view of these changes, the 1997 revised River Law introduced public involvement in river planning processes. Accountability in water rights is also necessary. This indicates the necessity of collecting data.

While efficiency and accountability in water resources management has become essential, the pricing system based on demand controls are not always the best solutions. There are still large numbers of provisional water rights which grant provisional rights only in respect of water resources classed as affluent. These provisional water rights have not decreased remarkably, and made it difficult to conciliate among water users. Tanji (2002) wrote that there might be a risk of bubbling prices in water rights markets because of limited water

resources. Also, if we only emphasize efficiency in water use through water pricing, another problem may happen. Market mechanism may increase efficiency through pricing water. However, market mechanism has not always worked when we consider poverty reduction. Based on the market mechanism, the price will be controlled by the balance between supply and demand. Rich supplies compared to demands decrease price, and poor supplies increase price. There is no room to consider poverty reduction in principle. Efficiency and equity issues are very important topics in economics. Here, policy implementations are necessary for poverty reduction. Water rights system is one of these policy implementations. For better water use, we should make the best efforts to collect necessary data and research water rights more at first.

5 CONCLUSION

In terms of efficient and wise use of water, valuing water has been required for water policy recently. On the other hand, there are some issues to be discussed, such as efficiency and equity, for valuing water. It is very important for us to examine all possible measures including water pricing, and identify the best strategy that fits into local conditions or historical backgrounds in water policy. Based on the water rights, the river administrator has tried to manage water use equitably and efficiently with respect to the historical background in Japan. For better water use, it is indispensable for us to collect information and research water rights in detail. Water use in Japan is characterized as agricultural use in paddy fields, quite similar to the styles of most Asian countries. Based on the deep review of our water rights system, we should seek more effective policy which can be applied not only in Japan but also in Asian regions.

6 REMARKS

This review does not reflect the official views or policies of the Ministry of Land, Infrastructure and Transport, Japan. This work has been supported partly by Core Research for Evolution Science and Technology (CREST) of Japan Science and Technology Corporation (JST).

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