

## THE ORIGIN AND DEVELOPMENT OF CHINA'S WATER RESOURCES TAX ---BASED ON THE RESEARCH OF FOREIGN TAXATION EXPERIENCE

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### ABSTRACT

With global warming and the deterioration of the ecological environment, water resources are becoming increasingly scarce, and all countries are constantly paying attention to the protection of water resources. In the comprehensive reform of resource taxes in recent years, water resources should be included in the scope of taxation. However, due to the constraints of national conditions, the water resources tax has not been included in the "team" of resource tax collection. In 2016, China's Ministry of Finance and the State Administration of Taxation jointly issued the "Interim Measures for the Pilot Project of Water Resources Tax Reform." The state aims to collect water Resource tax to ease the excessive waste of water resources and promote the balance of supply and demand of water resources. Based on the experience of the collection of foreign water resources tax, this paper finds that China has obstacles in the collection of water resources tax, which can help to establish the basic framework of water resource tax collection in line with China's national conditions and implements recommendations.

**Keywords:** Water Resources; Water Resources Tax; Taxation Experience.

### INTRODUCTION

Water resources are an important resource on which human survival depends. According to the incomplete statistics from the United Nations and the World Meteorological Organization, China's freshwater resources account for 6% in total volume of the world, which followed by Brazil, Russia, and the United States. However, due to the China's large population base, uneven distribution of water resources, and waste of water resources, we are also one of the world's poorest countries in terms of water per capita in the world. As an indispensable natural resource, Water resources have an important impact on people's health and safety and environmental issues. The State Administration of Taxation and the Ministry of Finance issued the "Circular on Promoting the Reform of Resource Taxes", and the Ministry of Water Resources of the People's Republic of China has jointly proposed that China start construction of a pilot program for the reform of the water resources tax with two departments in May 2016. On July 1 of the same year, the trial of the reform of the water resources tax was first implemented in Hebei Province, which opened the curtain for China's exploration and construction of a water resource tax collection system. The policy implementation of reform pilots is also based on the developed countries that have experience in the collection of water resources taxes. This article is through the analysis of foreign cash collection experience, the introduction of China's unique national conditions and the establishment of China's unique water resources collection system, which is of great significance for the comprehensive reform of China's resource tax.

## LITERATURE REVIEW

### (A) Elements of tax

#### (a) Tax base

Tax base is the basis for taxation. It is the objective basis for clear taxation targets and the basis for tax calculation. The main purpose of the Dutch water tax levy is to save on the use of groundwater and increase state revenues. The scope of the collection of the Dutch water resources tax is mainly focused on the groundwater and surface water pollution, because the excessive exploitation of groundwater has led to the phenomenon of ground subsidence, seawater intrusion, and river flow-breaking. In order to protect the country's water resources to full use, the Netherlands has proposed a tax on water resources; France has imposed a water resource fee, which is mainly aimed at increasing fiscal revenue. The French water resource fee policy is based on different river basin management. By dividing the different watersheds, the water pollution within the jurisdiction is controlled and the corresponding water resource fees are collected. For example, water quality deteriorates or changes the water environment of the river basin; the data shows that Denmark is currently the country with the lowest per capita water consumption, and the water resources management system is also relatively complete. Denmark's water resources tax is mainly taxed on tap water and drinking water, which excluding industrial and agricultural water; Germany's water tax policy is mainly designed to compensate those groups whose economic interests have been damaged, which due to the environmental changes. For example, farmers in the basin which limits the use of chemical fertilizers and other losses. Like the Netherlands, Germany also collects part of the groundwater and surface water pollution, which is mainly polluted; the taxation base of the Russian water resource tax is mainly groundwater and discharged sewage. However, the division of groundwater is more detailed than other countries. For example, water is taken from a water conservancy system, water diversion is determined by water flow rate and water consumption, and hydropower generation is determined by power generation.

#### (b) Taxpayer

The taxpayer refers to the tax legal obligation in which taxpayers perform their duties in accordance with the law, and which pays a party to the taxpayer. It is the entity and individual directly responsible for paying tax liabilities as prescribed by law. The Surface Water Pollution Act of the Netherlands divides surface water pollution into national and regional ones, and collects central and local taxes respectively. Taxpayers for surface water pollution taxes are individuals and units, which directly or indirectly discharge sewage and waste into surface water. The taxes on these contaminated waters are mainly determined based on the quantity and quality of individual and unit emissions. Groundwater tariffs are levied on individuals or enterprises that extract groundwater according to the amount of water extracted; French taxpayers are mainly those individuals and units that discharge sewage, and which are classified as family taxpayers and non-family taxpayers according to the different taxation methods. The criteria for division are mainly whether the amount of pollutants discharged per day exceeds 200 persons for one day. All taxpayers for water resources tax are individuals and units that take surface and groundwater and consume these water resources; since Denmark mainly taxes on tap water, Danish taxpayers generally use water resources to produce drinking water. The company is also a factory that produces tap water. However, this still does not include industrial water and agricultural water. It is only for those consumers who have to collect it, which has certain limitations. In Germany, different counties and counties have different collection policies. The taxpayers collecting water resources tax in Baden-Wurttemberg, which are organizations and individuals that use surface water and groundwater. In the state of Hamburg, water is only levied on groundwater, and they are

mainly levied on the amount of water that is allowed in the local water collection permit. Only if they exceed the permitted amount, they can levy a water resource tax; In Russia, the detailed division of tax purposes makes taxpayers under different tax bases. Regarding to the use of tax on groundwater resources, Russia mainly collects the individuals and enterprises that are exploring and exploiting groundwater in the territory. For industrial water companies, the portion of water that is extracted from the water conservancy system which must be taxed on the producer side, and the same applies of users, including residents. The tax on the discharge of pollutants to water resources facilities is mainly taxed on those companies that contain emissions and over-emissions.

### **(c) Expropriation link**

According to the tax law, expropriation link is the taxation object which should pay taxes in all aspects of the sports process. For water resources, foreign countries are mainly divided into extraction, life production, products, consumption and disposal. Extraction refers to the exploitation of water resources; living production is a taxation on the use of water resources during daily life and production; when the product stage is pumped, water filtered, water filtered and becomes water for consumers, and the consumption stage is provided by the water plant to consumers. When the water is used for consumption, it shall be collected; the disposal shall be levied at the stage of sewage treatment; the Netherlands shall mainly impose tax on the extraction. For taxpayers who use groundwater for extraction, they are taxed according to the amount of groundwater they extract. At the same time, for the treatment of sewage, a water pollution tax is levied on the amount of pollutants discharged, as well as pollutants and amounts; France and Germany, who like the Netherlands, collecting water pollution taxes at the extraction stage. This cost in France depends not only on the amount of water drawn, but also on the amount of water consumed, which refers to how much water will eventually return to the source of the water. Thus, the water intake and the source of the water are divided into the upper and lower reaches of the river and the surface water. Germany has different policies in different counties and counties. For example, annual water intake is less than 2000m<sup>3</sup> without taxation, and if it exceeds, taxes are paid in proportion; since Denmark mainly taxes enterprises that use water to produce tap water and drinking water, which mainly use in the production and consumption tax. The final burden of this water-supply tax actually falls on the heads of consumers; Russia's taxation links are relatively broad, with taxation on extraction, daily production, consumption, and disposal.

### **(d) Tax rate**

The tax rate is the proportion of the object of taxation or the amount of tax collection. It is also a measure of the amount of tax, and is an important indicator of whether the tax burden is heavy or not. The collection of surface water pollution tax in the Netherlands is based on different areas of water conservation and different tax rates, which mainly depends on some of the treatment and the costs of water purification. For groundwater, based on the amount of groundwater extracted, the Netherlands stipulates in the bill that a uniform tax rate which applied throughout the country. For individuals and units, a tax rate of 0.17 guilders/m<sup>3</sup> applies. For companies producing drinking water, who use 0.34 guilders/m<sup>3</sup> tax rate. The tax rates are relatively low, that making the savings effect of the water resources tax can not realized; France is mainly divided according to watersheds, so different river basin management agencies will implement the regional differential tax rates according to actual conditions. In general, the tax rates of the upper reaches of the rivers are higher than those of the downstream which because of the upstream water quality is better and there is no pollution; the water resources tax rate of groundwater is higher than that of surface water because of the content of minerals, good water quality and mining costs. However, the

purpose of France's collection of water resource fees is to increase finances. Therefore, the tax rate has not been set too high. It actually only accounts for about 3% of the cost of watershed projects; Denmark's water resources tax is mainly directed at tap water and drinking water companies, so the final payer is the uniform national tax rate of DKK5/m<sup>3</sup>. The tax burden is only 15% to 20% of the average water price. Germany, like France, has different tax rates for different watersheds. The rate of public water supply is generally lower than that of other water withdrawals; the Russian government often determines a minimum tax rate and a maximum tax rate for these water resources, but the authority to formulate specific tax rates is delegated to the regional executive agencies according to their actual conditions. The situation is determined. For example, the maximum tax rate which applicable to the use tax of groundwater resources is about 2% to 8% of the value of the water resources to be extracted, which is determined by the local governments themselves; the tax rate for the exploitation of underground mineral water is 5%; the applicable quota for the water pollution tax is a fixed amount of tax rate.

### **(B) Tax incentives**

Tax incentives refer to the government's use of taxation systems and corresponding incentives and care measures for tax purposes according to the country's overall political, economic, and social development goals in order to reduce certain taxpayer's tax obligations. To subsidize some of the taxpayer's activities or the corresponding taxpayer is one of the important means by which the state intervenes in the economy; In the Netherlands, building water such as ground drainage, test drainage, and other irrigation for the purpose of irrigation can enjoy tax-free treatment. Similarly, there is no tax payable for some cases of emergency or special circumstances or the use of small amounts of water. For example, fires, irrigation, water withdrawal, etc. Secondarily, the use of groundwater for the cleaning of recyclable packaging also does not have to be taxed; In France, the state has set up special bonuses to motivate taxpayers who use special equipment to reduce water pollution. The amount of the bonus is linked to the reduction in the discharge of waste-water from the company's wastewater. The more efforts the companies have made in reducing water pollution, the higher the bonus for obtaining state subsidies and financial support, which in turn motivates companies to achieve sustainable development; Denmark pays taxes which only use on tap water and drinking water companies, but they basically all have tax rates. Exerted to the consumers, so in terms of tax benefits, Danes do not set appropriate tax incentives for companies, but only a few simple water withdrawals, and they have little effect on companies; Germany only pays for small amounts of water. People set tax preferences. For example, in the state of Baden-Wurttemberg, the Germans set a standard of 2000m<sup>3</sup> to 3,000m<sup>3</sup> as a quota, and companies and individuals within this range may be subject to a reduction of the water resource tax by half. However, enterprises and individuals with an annual water intake of less than 2000m<sup>3</sup> are exempt from paying the water resource tax. In the state of Hamburg, a quota of 10,000 m<sup>3</sup> is set on companies and individuals which below this standard are exempt from paying the water resource tax; Russia mainly sets special preferential policies based on the user's use. As for the usefulness of some national economy and people's livelihoods, such as national defense water use, fishery production, soil reform, and playground water use, which is the implementation of the Water Resources Tax Relief Policy. If groundwater is extracted in its own or leased place and used only for its own required water withdrawal, it can be exempted from the water resource tax according to the certificate of land ownership or the lease contract.

**(C) Taxation administration**

The management of tax collection is a collective term for the taxpayer's work on the collection, management, and inspection of taxation. The water resources in the Netherlands are mainly divided into different watersheds. Therefore, the collection is also divided into different watershed individuals. The units are all water resources management committees. The Netherlands currently has a total of 24 regional water area management committees that have jurisdiction over their respective water resources regions. It is mainly composed of regional and user representatives in the basin, national and local appointed representatives, which representing different interest groups. The income of the water resources tax is earmarked for special use and is mainly used to purify surface water pollution. The second is as a compensation for groundwater management research. The rest is owned by the Central Government and the Ministry of Finance and transferred to the state treasury; the French government, like the Netherlands, who also divides the basin committees into river basins, but the difference is that they are established in different basins. There is a water conservancy authority. The role of these two departments is complementary. The river basin committees are mainly responsible for formulating the tax bases and tax rates for the water resource taxes in their respective regions, and the composition of the members is also about the same as that of the Netherlands. For the Water Conservancy Administration, it is only the department that administers the management of the water resource tax; Denmark only pays taxes on tap water and drinking water companies. Therefore, it is only through the water conservancy regulatory department that it performs unified payment in all regions. In the end, the water resource tax was handed over to the country along with the local tax to support the country's fiscal treasury; Germany's division was determined by states and regions, so the German federal government delegated authority to the state government, which allowing the states to determine Management method. It must be clear that this part of the tax revenue is used to compensate the groups whose interests have been impaired in the use of water resources; The Russian Federation's Water Code clarifies that Russia's water resources tax is levied by the local tax authorities and Taxes are divided into 40% and 60% of the federal budget and the federal main budget. A part of the budget use for geological exploration, and another part use to establish a federal special hydrological ecological fund ,that aimed to protect and restore water resources facilities.

**Collection obstacles to water resources tax in china**

With the accelerating development of China's economic development, people have increasingly neglected the protection of public resources. Water shortage has become a major obstacle to China's economic development. China is still implementing the "Regulations on the Administration of Collection and Use of Water Resources Fees," but there are still many obstacles to the implementation of China's water resources tax.

**(A) Unbalance regional development and obvious institutional differences**

Among the regions with better development in China, only Hebei and Beijing started to impose the restriction on water resources taxation in 2016, and Shenzhen, Qingdao, Xi'an, and Tianjin have no specific provisions on the actual taxation of water resources. In terms of the system, some methods for the collection and management of water resource fees in the region are simple and easy. In some areas, the regulations are very complicated, and even the phenomenon of multi-sector collection has emerged. For example, the urban construction department, water supply company, and water conservancy department also participate in the long-term collection. Policy differences in different regions are relatively large, and the overall levy system is also not standardized. There are significant differences in the selection of the scope of the water resources tax. For example, Beijing requires the collection of water

resource taxes for residents, industrial, urban water conservancy and water supply companies. However, the region of Hebei only levies taxes on industrial and urban water supply companies.

### **(B) Large investment in water resources deployment and low collection standards**

Due to the influence of different regions on the climate and geography, the water resources in various places are also unevenly distributed. The rapid development of North China and the dramatic increase in water consumption have become the most scarce water resources in China now. As a result, the country have began North-to-North Water Diversion project in North China. In that time, the project allocated a total of more than 73 billion yuan from the Central Government of the Central Government, and the investment scale was huge. However, on the other hand, in view of the current situation of China's current water resource tax collection, the low tax and fee standards have become the biggest limiting factor. Taking Beijing as an example, Beijing has a large population base. However, according to survey data, the local average water resource tax is far lower than most of the country. This system is obviously unreasonable. The purpose of the collection of water resources tax is to ease the financial pressure ,that brought by the South-to-North Water Diversion Project to various regions, which protect water resources and achieve sustainable development of resources.

### **(C) Slow process of water resources taxation and scare management mechanism**

China has revised the Water Law since 2002. For a long time, due to the imperfect system, many companies and individuals have not implemented it, that making it difficult to carry out. In May 2016,The "Notification on Comprehensively Promoting the Reform of Resource Taxes" only allowed the water resources tax to enter our field of vision. However, the result was that the public's attention still insufficient. Although pilots for the collection of water resources taxes have started to be established from Hebei and Beijing, the importance which attached to the governments of various regions is insufficient, and the imperfections of some policies and measures have made it difficult to advance the reform of the water resources tax. In China, most of the water companies are actually controlled by foreign companies. According to the regulations, foreign companies investing in China have a series of preferential policies, such as two exemptions, three half-tax reductions and lower income tax concessions. Due to the impact of many tax incentives, the collection of water resources tax in waterworks in China will have severe obstacles. To a certain extent,It will inhibit the overall process of taxation of water resources.

## **China's Collection Framework of Water Resources Tax and Suggestions**

### **(A) Elements of tax**

A reasonable tax system plays an important role in optimizing the allocation of water resources, the effective use and protection of water resources. In terms of tax base, we can learn from the practices of the Netherlands and Russia, and according to the different conditions of the water resources in different regions of our country and the nature of the use. We can further subdivide the surface water, groundwater according to different industrial structures and policy objectives to achieve taxation. For example, surface water, groundwater, geothermal water, and mineral water can be designed into four secondary tax items. In respect of the taxation subject, we can levy taxes on units and individuals directly from rivers, lakes and groundwater in China. In the taxation aspect, we can integrate the policies of various countries and set up a complete taxation process from extraction, production, consumption, and disposal which according to different industries and regions or targets. In the case of taxation applicable to extracts other than waterworks, the waterworks may pay fees at the production or consumption stage which depending on the actual situation.

In terms of tax rates, we learn from Gao Ping and Yin Changfan's exploration of water resource fees in various regions of China and found that they can set a unified minimum taxation standard for each province's water resources tax in 2016, which is shown in Table 1. The determination of the water resource tax rate is to adapt to the local conditions of water resources and economic development, and to achieve reasonable development and conservation of water resources.

**Table 1****Minimum Standard of tax rate for water resources tax by region**

Province	Minimum collection standard of surface water resources tax (yuan/m <sup>3</sup> )	Minimum collection standard of groundwater resources tax (yuan/m <sup>3</sup> )
Beijing, Tianjin	2.0	4.5
Shanxi, Inner Mongolia, Hebei	1.0	3.5
Shandong, Henan	0.8	2.5
Liaoning, Jilin, Heilongjiang, Ningxia, Shanxi, Anhui	0.6	1.5
Shanghai, Jiangsu, Zhejiang, Guangdong, Yunnan, Gansu, Xinjiang	0.6	2.0
Tibet, Qinghai, Fujian, Jiangxi, Hubei, Hunan, Guangxi, Hainan, Chongqing, Sichuan, Guizhou	0.4	1.0

### (B) Tax incentives

We can use different tax incentives for different groups, regions, uses, and industries. First of all, for some specific groups of people who have implemented preferential water policies, such as basic water for living in rural areas and some individuals living in particularly difficult tax exemption policy; for environmental protection, there must also be a policy tilt. Secondly, for residents' water, they can learn from France and set a reasonable scope for the use of water resources. Taxes can be exempted within a reasonable range. Exceeding a reasonable scope of use which requires progressive tax rates to be taxed. In the end, we can also follow Russia's example and provide preferential policies for low taxes or reductions on water for the national economy, people's livelihood and new environmental protection companies. Companies with advanced energy-saving and emission-reduction technologies can add deductions to fixed assets and R&D expenses to encourage the use of such production methods.

### (C) Taxation administration

In the process of the management of the collection and management of water resources, our country must handle the relationship between the local government and the central government, which must form a unity between the two sides. With reference to the practices of Germany and France, the Central Government can devolve power to localities and give local governments sufficient autonomy to formulate collection management methods that are consistent with different regions. The regions can learn from each other directly and realize the interests of the region and the country. The benefits coexist. In terms of government

management, it is possible to imitate the Netherlands and establish watershed management committees that belong to each region. They are also composed of representatives from various regions and representatives from the central government, implement policies in the region, and implement comprehensive supervision. Finally, we must also implement special funds for this part of the tax revenue and implement a two-tier supervision system. A special account is setting up for water resources tax revenues for custody, and funds are used for water resources exploration, maintenance, and pollution control. The two levels are the functions of the central and local governments which can perform supervision together, and achieve the development through mutual supervision and control.

#### **(D) Suggestions**

First, with the implementation of the Water Resources Tax Pilot Measures in Hebei Province and Beijing Municipality, China has continuously explored and found that China is currently implementing the issue of water resource tax, which continuously solving and perfecting it, and further expanding China's water resource tax levy and Tax pilot scope. Second, strengthen the legislation on water resources tax and formulate reasonable water resources protection policies. China should give full play to the functions of the government to strengthen the legislation on taxation, and formulate a green taxation adjustment system suitable to China based on actual conditions. Third, the implementation of the parallel model of water resources taxes and fees, which should set up the formation of a scientific tax system. According to the dual adjustment mechanism of taxes and fees, it can effectively distinguish the differences of water resources tax in different regions, and has extremely high reference value for the formulation and improvement of tax rates.

#### **CONCLUSIONS**

Water resources is an indispensable and important resource for us to survive. Only when we recognize the scarcity of water resources that we can protect our resources and achieve sustainable social economy development. This article summarizes the advanced experience of foreign countries on water resource taxation, which extracts a water resource tax collection system that suits China's national conditions, and proposes sound suggestions. It is a great significance to China's advancement of the resource tax reform process.

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