LEGAL ISSUES ON THE AGRICULTURAL WATER CHARGES*

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Abstract

Water charge is a system that charges the utilization of water in financial terms, in order to support water allocation by recovering its costs and helping create an incentive to reduce the excessive use of water. In Thailand, the agricultural sectors are considered to be the largest water user. However, they have been exempt from water charge. Most of the laws related to the water use exclude the agricultural sectors from water charges, or are unenforceable. Moreover, the exemption of water charges provided by Thai laws tends to focus on the types of water use rather than the amount of water used. The foreign laws related to the agricultural water charges, such as England, the United States, China, and Brazil, provide that the collection of the agricultural water charges is based on the volumetric quantity of water utilization. Furthermore, they tend to separate the insignificant water use from other users by providing a volumetric limit for insignificant use which does not require the collection of water charges. The study of those foreign laws can be the models for effectively imposing the agricultural water charges in Thailand, especially in the case of exempting

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the insignificant and small amount of the agricultural water, and of applying the water charges based on the suitable level of water use.

Keywords: Agricultural Water Charges, Agricultural Water Law, Volumetric Charges, Volumetric Exemption

1. Introduction

Water charge is a system that charges the utilization of water in financial terms.[1] Charges which precisely reflect the true value of available water and affect the decision of water users to create incentives for more necessary water uses.[2] Water charge serves the objective of recovering financial costs of water allocation which helps the government provide sufficient services and maintain the effectiveness of the water supply systems. It aslso helps create an awareness that water is a limited resource and ensuring water availability requires costs. This can be an incentive for water users to utilise water only for essential purposes, or adopt an agricultural practice that uses less water as well.[3]

In Thailand, however, the agricultural sectors that use the largest amount of water are exempted from water charges. The existing laws related to the agricultural water charges exempt or, in other words, are unable to impose water charges on the agricultural sectors. Moreover, the categorization and the exemption of water charges, provided by the existing laws and regulations in Thailand, tend to focus on types of water use rather than the amount of water used. With such limitations and lack of law enforcement, it is impossible to collect charges on agricultural water use. Consequently, the agricultural sectors are prone to use more water than necessary.

2. Foreign Law Related to the Agricultural Water Charges

The laws and regulations on water allocation and water pricing of the agricultural sector vary in each country due to their distinctive

[1] European Commission, *The Role of Water Pricing and Water Allocation in Agriculture in Delivering Sustainable Water Use in Europe – FINAL REPORT* (Project number 11589, February 2012) 8 <https://publications.europa.eu/s/lDAG> accessed 4 January 2019

[2] Ariel Dinar, Mark W Rosegrant and Ruth Meinzen-Dick, 'Water Allocation Mechanisms: Principles and Examples' (Research working paper; no. WPS 1779. Washington, DC: World Bank, July 1997) 1

[3] European Commission (n 1) 16-17

conditions. To analyze Thai law related to water charges for amendment, studying foreign laws is necessary for the purpose of comparing and finding a suitable model. The author chooses to study the laws of the following countries as they have unique laws and similar policies of water pricing to Thai law.

2.1 England

In England, the Water Act 2003 provides a volumetric limit to the abstraction of water which does not require a license. Any type of water users may abstract up to 20 cubic meters (m^3) of water within a period of twenty-four hours.[4] Furthermore, the Agency may apply a lower or higher rate of the 20 m^3/day exemption in a different area related to a geographical condition, a class of surface waters or a class of underground waters.[5] Therefore, if a small quantity of water use causes significant damage upon watercourse, the authority may reduce the exemption rate to relieve the impact and regulate those abstractions.

In the case where a license is required, water users need to pay a fixed amount of charges on application and administration on an annual basis, based on the quantity of water used (volumetric charge). The license is usually issued for a period of 12 years with a condition that prohibition or reduction of the abstraction may be made when a river level reduces to the prescribed limit.[6]

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[4] The Water Act 2003 (UK) s 27

[5] ibid, s 27A

[6] European Commission, *The Role of Water Pricing and Water Allocation in Agriculture in Delivering Sustainable Water Use in Europe – FINAL REPORT – ANNEXES* (Project number 11589, February 2012) 13-21 <http://ec.europa.eu/environment/water/quantity/pdf/agriculture_report_ANNEXES.pdf > accessed 4 January 2019

2.2 The United States of America

In the U.S. federal system, each state has the authority to allocate water resources within their territory. In the western states, there is a legal system called a prior appropriation to govern water allocation, in which the person who first makes a valid appropriation of water has a prior water right to all other subsequent appropriations. In the eastern states, which is much more humid compared to the western, they adopt a legal system called riparian rights, in which the person who owns and occupies land adjacent to the watercourse receives water use rights through the occupation of that land.[7] As the water allocation varies between each state, the author chooses to cover two distinctive states, namely California (a western state) and Georgia (an eastern state).

2.2.1 California

The irrigation water project in California applies the water pricing with a full-cost rate, which includes the recovery of operation and maintenance costs with interest and the capital costs for the irrigation. This water charge is to be collected in every year, even if the amount of water provided by the project is less than the promised volumes. In each year, water users are obliged to pay all of the full supply-costs, even though they receive less or no water from the project. Only the water service costs are lowered in the year with less water supplied.[8]

Many agricultural water users are charged with a fixed rate, based on the amount of area cultivated and type of crop instead of the volume of

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[7] Institute for Water Resources, 'Aspects of Governing Water Allocation in the U.S.' (Report Prepared for Agencia Nacional de Aguas in accordance with a 2013 ANA-USACE Agreement Component, Regulatory Aspects, Task 4, Document 4.1, December 2014) 23-28 <https://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/2014-R-4_Aspects_of_Governing_Water_Allocations_in_the_US.pdf> accessed 4 January 2019

[8] Dennis Wichelns, 'Agricultural Water Pricing: United States' (OECD, 2010) 15-18 <https://www.oecd.org/unitedstates/45016437.pdf> accessed 4 January 2019

water used. However, a recent law in California requires all large irrigation districts (with more than 25,000 irrigated acres) to adopt the volumetric method of water charges (e.g., Water Conservation Act of 2009, Senate Bill x7-7). Before imposing the volumetric charges, the authority must assure that necessary conditions are met, such as the ability to measure the volume of allocated water, the capability of data management, and the implementation of a suitable collection mechanism of water charges. In addition, any changes related to the water charges must be approved by a majority of water users.[9]

2.2.2 Georgia

The agricultural sector in Georgia is not charged for water use. However, the permit is required for the agricultural sector to irrigate.[10] Under the Official Code of Georgia Annotated (O.C.G.A.), the surface water or groundwater users who abstract or store more than 100,000 gallons per day requires a permit.[11] The duration of permits is generally 10 to 50 years.[12] Holders of water use permits must occasionally report the amounts of water used, and identify their source of water and the nature of the use.[13] For the violation of groundwater use permit, the authority may enforce civil penalties up to 1,000 dollars, with further penalties of 500 dollars per day for continuous violations.[14] For the violation of surface water use permit, the authority may enforce civil penalties up to 50,000 dollars per day, and to

[9] Juliet Christian-Smith and Chris Kaphiem, 'Volumetric Water Pricing and Conjunctive Use: Alta Irrigation District' (*Pacific Institute*) <https://www.pacinst.org/reports/success_stories/volumetric_water_pricing_and_conjunctive_use.pdf> accessed 4 January 2019

[10] Dennis Wichelns (n 8) 22

[11] The Official Code of Georgia Annotated (O.C.G.A.), s 12-5-31(a)(1), 12-5-96(a)(1)

[12] O.C.G.A., s 2-5-31(h), 12-5-97(a)

[13] O.C.G.A., s 12-5-31(m), 12-5-97(d),(e)

[14] O.C.G.A., s 12-5-106

100,000 dollars per day if a separate violation occurs within one year of the original violation.[15]

2.3 China

In China, under the Water Law 2002, the state applies the license system and the charges collection for the use of water, with the exception for the use of the water in the ponds and reservoirs by rural collective economic organizations and their members.[16] In order to acquire the right to use water, anyone who collects water directly from a river or lake or from the underground requires the license from the authority and pays the water charges. The license is not required for the use of a small amount of water for domestic use or livestock.[17]

The regulation of water charges was enacted in 2006 by State Council Decree No. 460 - Regulation for Water Drawing Permit and Collection and Management of Water Resources Fee (SCD 460). The main feature of the SCD 460 indicates that in order to use water, the water user shall apply for a permit and pay water charges.[18] The water charges shall be determined by the actual quantity of water used,[19] and shall be paid with an increasing rate if the quantity of water used exceeds the quota.[20] For agricultural water use, water charges are not required for agricultural water use which does not exceed the established quota.[21]

Water charges are calculated by the volumetric quantity of water used with the increasing block rate. However, water charges in many irrigation districts in China still do not recover full water supply costs, and

[15] O.C.G.A., s 12-5-52

[16] Water Law of The People's Republic of China of 2002, art 7

[17] ibid, art 48

[18] State Council Decree No. 460 (SCD 460), art 2

[19] SCD 460, art 32

[20] SCD 460, art 28

[21] SCD 460, art 33

many irrigation districts lack the volumetric measurement facilities and cannot measures the true volume of water used in the district.[22]

2.4 Brazil

In Brazil, the National Water Act of 1997 treats water as an economic commodity; therefore, the government may charge for the actual quantity of the water used.[23] However, charges only apply to water use that requires a permit.[24] Hence, insignificant uses, diversions, captures, or discharges of water are free from charges.[25] The determination of what is an insignificant use requires the consideration of each specific criteria. For agricultural use, the criteria for insignificant use is the withdrawals of water that do not exceed 1 liter per second and their corresponding effluents.[26]

Water charges calculation is based on the volumes specified through both the permits and the volumes measured by the water users themselves. The measured volumes are to be declared to the National Water Association by means of the Annual Declaration of Water Resources Use. However, meters are not always installed, especially in the agricultural sector. Setting a water charge is the outcome of both a political and technical process within the river basin committees. In practice, a technical group within the river basin committee carries out this function, then the

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[22] Yongsong Liao, Zhanyi Gao, Ziyun Bao, Qingwen Huang, Guangzhi Feng, Di Xu, Jiabin Cai, Huijing Han and Weifeng Wu, 'China's Water Pricing Reforms for Irrigation: Effectiveness and Impact' (Comprehensive Assessment of Water Management in Agriculture Discussion Paper 6 2008) 10-18 <http://www.environmentportal.in/files/CADiscussionPaper6.pdf> accessed 28 March 2019

[23] The National Water Act 1997, art 19

[24] ibid, art 20

[25] ibid, art 12 para 1

[26] Monica Scatasta and Rosa Maria Formiga-Johnson, 'Bulk Water Pricing in Brazil : Advancements, Resistance, Controversies and Ambiguities' (2003) 8 <https://iwra.org/member/congress/resource/MADRID2003_MONICA_SCATASTA_EN.pdf> accessed 16 April 2019

proposal is discussed with the stakeholders within the river basin committee and finally submitted to the national or state water councils. Eventually, the decision on the level of charges is predominantly political, as it is the result of negotiation amongst stakeholders.[27]

3. Thai Laws Related to the Agricultural Water Charges

3.1 State Irrigation Act B.E. 2485 (1942)

The State Irrigation Act is a law that regulates the water use and water allocation within the irrigation area, operated by the Royal Irrigation Department under the Ministry of Agriculture and Cooperatives. The Ministry of Agriculture and Cooperatives is authorized to collect the irrigation fees from the owner or possessor of the land within the irrigation area, or from any users who use water from irrigation waterway within or outside the irrigation area; including the use for agriculture, factory, waterworks or other purposes.[28] The rate of the irrigation fees to be collected from the agricultural users within or outside the irrigation area shall not exceed 5 baht per rai per year,[29] which is a fixed charge based on the amount of land owned or possessed, not by the exact unit of water used. However, these rates under this Act is not the exact rates that will apply. To collect irrigation fee, the Ministry regulations need to be prescribed to formulate the terms and conditions including the exact rate of the irrigation fees. Nevertheless, until now, the Ministry of Agriculture and Cooperatives have not prescribed any regulations for the collection of the irrigation fees from the agricultural users, which results in no irrigation fees for the agricultural users.[30]

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[27] OECD, *Water Charges in Brazil : The ways forward* (OECD Studies on Water, OECD Publishing, Paris 2017) 41-42

[28] State Irrigation Act B.E. 2485 (1942), s 8

[29] ibid, s 8 para 2

[30] Natsuda Rattamanee, 'Regulation on the Riparian Rights Outside the Irrigated Area' (Master of Laws Thesis, Thammasat University 2014) 100

3.2 Agricultural Land Consolidation Act B.E. 2558 (2015)

The Agricultural Land Consolidation Act is a law that authorizes the state agencies to develop the agricultural land by method of land consolidation, including agricultural water management for the agricultural sector. Under the provision of this Act, after the announcement of the agricultural water management area, a landowner within the agricultural water management area shall pay for charges from agricultural water management, repair, maintenance, and the use of water for the benefit of agricultural business operation, or unnecessary use of excessive water, in accordance with the regulations prescribed by the Central Land Consolidation Committee.[31]

The Central Land Consolidation Committee had issued two regulations regarding the collection of the charges under this Act : the regulations in accordance with the rules, procedure and conditions of the payment for charges from agricultural water management[32], and the regulations in accordance with the rules, procedure and conditions of the payment for the repair and maintenance of the public constructions for the common use.[33] The collection of the charges under these regulations focuses on recovering construction and maintenance costs, which are a

[31] Agricultural Land Consolidation Act B.E. 2558 (2015), s 26

[32] ระเบียบคณะกรรมการจัดรูปที่ดินกลาง ว่าด้วยหลักเกณฑ์ วิธีการ และเงื่อนไขการชำระค่าใช้จ่ายในการจัดระบบน้ำเพื่อเกษตรกรรม พ.ศ. 2559 (Ra Bieb Kana Gammagarn Jud Roob Teedin Glang Wa Duay Lakgain Witeegarn Lae Nguenkai Garn Chamra Kaa Chaijai Nai Garn Jud Rabob Nam Pue Kasetrakam Por Sor 2559 [Rule of the Central Land Consolidation Committee on the Rules, Procedure and Conditions of the Payment for Charges From Agricultural Water Management B.E. 2559 (2016)])

[33] ระเบียบคณะกรรมการจัดรูปที่ดินกลาง ว่าด้วยหลักเกณฑ์ วิธีการ และเงื่อนไขการชำระค่าใช้จ่ายในการซ่อมแซมและบำรุงรักษาซึ่งใช้ประโยชน์ร่วมกัน พ.ศ. 2559 (Ra Bieb Kana Gammagarn Jud Roob Teedin Glang Wa Duay Lakgain Witeegarn Lae Nguenkai Garn Chamra Kaa Chaijai Nai Garn Som Sam Lae Bumrung Raksa Sueng Chai Prayot Ruam Gun Por Sor 2559 [Rule of the Central Land Consolidation Committee on the Rules, Procedure and Conditions of the Payment for the Repair and Maintenance of the Public Constructions for the Common Use B.E. 2559 (2016)])

fixed charge based on the actual construction or maintenance costs, not by the quantity of water used.

3.3 Groundwater Act B.E. 2520 (1977)

The Groundwater Act is a law that regulates the groundwater operations to protect the groundwater from damages, pollution or uncontrolled drill. Any abstraction of groundwater within the groundwater area requires a license from the Department of Groundwater Resources.[34] The licensee for a groundwater usage license shall pay the groundwater usage fee at the rates as prescribed in the Ministerial Regulation.[35] The groundwater conservation fee is additionally collected from groundwater license holders in Groundwater Critical Areas.[36]

The regulation of the collection of groundwater usage fee[37] and the regulation of the collection of groundwater conservation fee[38] provide that the rate of the groundwater usage fee and groundwater conservation fee are based on a volumetric charge which is based on the per-unit use of groundwater (baht/m^3). In an area with no access to tap water supply, these fees shall be exempted for individuals with a license to use groundwater for the purpose of the domestic consumption, agriculture, and livestock (exemption for livestock use shall not exceed 50m^3/day).

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[34] Groundwater Act B.E. 2520 (1977), s 16

[35] ibid, s 25/1

[36] ibid, s 7

[37] กฎกระทรวง ฉบับที่ 7 (พ.ศ. 2540) ออกตามความในพระราชบัญญัติน้ำบาดาล พ.ศ. 2520 (Kod Krasuang Chabub Tee 7 (Por Sor 2540) Ork Tarm Kwam Nai Pra Ratchabunyat Nam Badan Por Sor 2520 [Ministerial Regulation No. 7 (B.E. 2540) Issued under the Provisions of the Groundwater Act B.E. 2520 (1977)])

[38] กฎกระทรวง กำหนดอัตราค่าอนุรักษ์น้ำบาดาล และหลักเกณฑ์ วิธีการ และเงื่อนไขการเรียกเก็บค่าอนุรักษ์น้ำบาดาล พ.ศ. 2547 (Kod Krasuang Gumnod Attra Ka Anurak Nam Badan Lae Lak Gain Witeegarn Lae Nguen Kai Garn Riek Geb Ka Anurak Nam Badan Por Sor 2547 [Ministerial Regulation Prescribing of the Rate of Groundwater Conservation Fee and the Rules, Procedure and Conditions of the Collection of Groundwater Conservation Fee B.E. 2547 (2004)])

3.4 Water Resources Act B.E. 2561 (2018)

The Water Resources Act is a law which regulates water allocation, water development, water conservation, water restoration, and water rights. Under this Act, the use of water resources was categorized into three types. The first category is the use in a small amount (including the use for household consumption, agriculture or livestock for subsistence). The second one is the use for industry, tourism, electric power production, water supply, and other business. The third one is the use for large-scale business that uses a large amount of water, or may cause the effect across the basins or covers the large scale of land.[39] The details of each type of water uses shall be later provided by the Ministerial Regulations issued by the Prime Minister with the approval of the National Water Resources Committee.[40]

For the charges of water use, the first category of water use does not require the permit and there is no water charges imposed.[41] In this regard, the other existing laws related to water allocation shall follow and shall not contradict the provisions under this Act.[42] Therefore, those categorizations and the exception to the permit and water charges for the first category of water use under this Act shall apply to those under the other related laws as well. And, accordingly, any of the other related law that charges the water fee on the first category of water use under this Act (such as the State Irrigation Act) has likewise become unenforceable. Conversely, the provision and the exception for the first category of water use shall not apply to the use of groundwater under the Groundwater Act,[43] which results in no changes for the enforcement of the Groundwater Act. In other words, the first category of water use still requires a permit as well as payment for the groundwater usage fee.

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[39] Water Resources Act B.E. 2561 (2018), s 41

[40] ibid, s 41 para 2

[41] ibid, s 42

[42] ibid, s 3

[43] ibid, s 55

4. Analysis and Proposal for the Issues Related to the Agricultural Water Charges in Thailand

After conducting the studies on Thai Laws that relate to agricultural water charges, the author realizes that without any amendment of these laws, imposing water charges on the agricultural sector is impossible. In this regard, the amendment to the Water Resources Act is an adequate solution as it supersedes other laws related to water charges and will apply to those other laws.

Furthermore, the author suggests that the details under the Water Resources Act regarding the categorization of each type of water use under the Ministerial Regulations should not only be based on how the water is used, but also on the amount of water used. Imposing the volumetric limit for the first category of water use is also essential. It helps separate the water use that requires only a small amount of water and is eco-friendly, which should be exempted from water charges, from other uses that consume large amount of water or is not eco-friendly, which should be regulated and imposed on charges.

Besides, the author views that water use for the agricultural purpose should be charged by the volumetric method with the exemption for insignificant use set by the volumetric limit. The volumetric method of water charges reflects the true price of water used, which creates an incentive for the agricultural sector to decrease unnecessary water use, and develop the cultivation method or technology that waste less water or shift to growing more economically benefitial crops. To avoid the water charges, the volumetric exemption encourages the agricultural sector to control its water use to stay under the exemption limit. The proposal of the volumetric charges and the volumetric limit is based on the practices under the UK, China, and Brazil's water laws.

However, adopting the method of agricultural water charges from those countries might not be successful in Thailand. This is because imposing water charges based on volumetric basis may significantly burden the majority of the agricultural sectors in Thailand, and might cause the

poverty situation in the Thai agricultural sector to be worse. Additionally, other factors such as the unavailability and inaccessibility of water, water quality, the misconceptions that water is abundant, and the system transparency give rise to the agricultural sector's unwillingness to pay water charges. Without any improvements in relation to these factors, such unwillingness to pay the charge will remain.

Apart from above, the author is of the opinion that imposing volumetric charges for the agricultural sector in Thailand requires a long-term plan with crucial support from the related government sectors as well as largely-funded project. To increase the water users' ability and willingness-to-pay water charges, irrigation and water allocation systems need improvement in order to increase the water availability, accessibility and quality. Introduction of the effective system to create transparency of water charges and its management is also necessary. Likewise, public hearing from the related water users and the increasing of public awareness by educating agricultural sector of the water situation and the importance of water charges are important. There should also be the provisions of the volumetric measurement facilities, and meters installment, to determine the volumetric limit that exempts the water charges based on the insignificant amount of water use or the necessary amount of water use. With a view to make water users familiar with the volumetric method of water charges, it is inevitable to employ subsidization by primarily collecting charges at a low rate and gradually increasing it over a number of years until reaching the charging rate. Moreover, the government needs to improve the poverty situation within the agricultural sectors to increase their ability to pay and relieve the burden of the increasing costs.

5. Conclusion

After studying Thai laws and regulations related to the agricultural water charges, it is clear that most of the laws prescribe the agricultural water charges to be based on a fixed rate rather than volumetric method (except the groundwater charges). The Water Resources Act even excludes

from water charges the use for agriculture or livestock for subsistence, and also applies those exemptions to the other laws related to the agricultural water charges (except the Groundwater Act). However, when compared to the foreign laws, the exemption from the water charges under Thai laws tends to be based on the types of water use, not by the volumetric limit.

The lack of enforcement for the provision of agricultural water charges is a factor indicating that the collection of agricultural water charges in Thailand is practically unsuccessful. Even if the laws impose water charges on the agricultural sector, the government are unable to, or choose not to, enforce those laws. Such negligence to impose the charges arise partly from the agricultural sector's inability and unwillingness to pay.

In this regard, the author suggests that agricultural water use should be charged on the volumetric quantity of the water use. Furthermore, the exemption to the water charges for the household use or agricultural use for subsistence that requires only a small amount of water should not be based only on the types of the use, but also on the volumetric limit of the water used for each type. For the Water Resources Act, the author is of the view that the details for the categorization of each type of water use under the Ministerial Regulations should likewise not only be based on the categories of water use, but also on the amount of water used.

The author further opines that to impose water charges on the agricultural sector, the amendment to the laws related to the agricultural water charges does not suffiice. Imposing volumetric charges for the agricultural sector in Thailand requires a long-term plan with crucial support from the related government sectors and largely-funded project, in order to increase the ability and willingness to pay water charges by the agricultural sector. As the ablilty and willingness to pay water charges increases, imposing water charges on the agricultural sector is prone to be more practicable. Even though this proposal requires largely-funded projects from the government which will be costly in the short-term period, it will help increase the availability of water resources for the future generations,

enhance the economic value of water allocation as well as reform the system of such allocation in Thailand.

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