A Fundamental Theory for Water Law Aimed to Promote a Sound Hydrological Cycle

— Concerning “Public” and “Private” Characteristics of Water Resources —

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I. Introduction

In light of recent studies on how to conserve and use water resources, the promotion of a sound hydrological cycle is a significant idea. It is defined by a liaison conference among the relevant ministries and agencies as "a stable condition which a
balance between a human activity and an environmental conservation on using water has been maintained appropriately in the course of the flow of water at the river-basin.  

Despite this fact, there is no actual enforcement of a policy concerning the promotion of a sound hydrological cycle at the present time. It is difficult to find any research on legal theories about the conservation and use of water resources on the basis of the hydrological cycle.

This thesis is intended for consideration of a fundamental theory about the conservation and use of water resources. In concrete terms, this paper presents a legal theory concerning restrictions on the usage of groundwater based on the perspective of promoting a sound hydrological cycle after referring to the current legal characteristics of water as river flow and groundwater. This paper also makes clear that in order to put this theory into practice, a local water ordinance needs to be enacted to embody this principle.

Water resources have a public aspect that allows for anyone to access it. In contrast, the private aspect is exclusive. My research presents a legal theory for bonding the two aspects with the support of the legal system. It signifies a fundamental framework for water law to promote a sound hydrological cycle.

1) This approach is no different from the definition stated in the bill for conservation of the hydrological cycle which was abandoned at the 183rd ordinary session of the Japanese Diet in 2013.

2) The following abbreviations are used in the citations found throughout this article:
II. Legal characteristics of flowing water

A. Flowing water of a river

To date, there is no provision that directly establishes the legal characteristic of flowing water of a river. However the old Japanese Civil Code which was promulgated on 1890 expressly states as below in Article 25 under the property part, which states, "Public property is an object that can not belong to anyone and everyone can use such as air, light, flowing water and the ocean." Based on this, flowing water of a river is regarded as public property according to the old Civil Code.

This Article can be traced back to the original Roman law through French law. The concept of "res communes" in Roman law has influenced Japanese law. "Res communes" defines common goods for humankind based on natural laws and these goods can be used by all people. For example, "res communes" can be applied to air, flowing water, the sea and the seashore.

The old Japanese Civil Code expressly stipulated that flowing water was "a public property" which should belong to no one and should be available to everyone. However, there is no provision in

Law reports
Hanta Hanrei Times (issued twice per month)
Kaminshu Kakyusaibansho Minji-Hanreishu (Report on the civil cases of the lower courts)
Minroku Taishinin Minji-Hanketsuroku (Report on the civil cases of the Supreme Tribunal before 1945)
Minshu Saikosaibansho Minji-Hanreishu (Report on the civil cases of the Supreme Court after 1945)

the current Civil Code regarding this. Flowing water is interpreted as "a public property" legally based on this provision. It can be accessed by everyone in principle, but a person who wants to take it exclusively and continuously must receive permission from the river administrator according to this interpretation.

B. Groundwater

On the other hand, how is groundwater dealt with? Does the same interpretation as flowing water of a river apply to groundwater? There are two opinions. The first view is based on Article 207 of the current Japanese Civil Code which states the scope of landownership. It provides that said ownership shall extend to above and below the surface of the land. According to this article, groundwater can be extracted by the landowner as a private right. The Supreme Court precedent states, "It is reasonable that a landowner can take groundwater freely because the right to use it is originally attached with the landownership."

The second opinion deals with groundwater the same as flowing water of a river which is regarded as "public water", which should be controlled by a local public organization. This view has a natural affinity for the integration of groundwater into flowing water of a river and conforms to the reality of the local


5) Article 3, paragraph (2) in the bill for conservation of the hydrological cycle implies this interpretation. It defines water as a valuable common property for citizens.


Groundwater pollution is closely involved with contamination of the soil. A study on the Soil Contamination Countermeasures Act presents an informative viewpoint that invites people think about the legal characteristic of groundwater. This Act stipulates in Article 7, paragraph (1) that the polluter who is specified should bear the liability for soil contamination, otherwise, the landowner is held liable. This provision assures that responsibility is not avoided when the polluter is unknown.

The landowner must decontaminate and prevent the diffusion of pollution in the soil according to this Act. Soil contamination is often diffused into the ground through water in the soil including the groundwater. It would not be fair if the landowner could not extract groundwater despite obligations to decontaminate it. If the landowner bears the liability for cleaning soil pollution, he should also have the authority to use the groundwater for personal purposes. Therefore, it can be said that the landowner is both responsible for keeping the soil free of contamination and has the right to extract groundwater.

Groundwater is a constituent of the land for the above-stated reason. Under this interpretation the landowner can exercise a property-based claim, if someone attempts to interfere with that

10) A Miyazaki, supra note 4, p. 341.
landownership including the right to use groundwater.

If groundwater is treated as "public water" managed by a local public organization, the local government would be liable for problems that occur in connection with the groundwater. In other words, groundwater problems result from a mismanagement of "public water" by the local government. The river administrator controls surface flowing water and is held accountable for its mismanagement. The concept of "public water" is based on the assumption that a public organization can manage water, but also that its mismanagement makes that public organization liable.

It is extremely difficult to control groundwater, because it flows under the ground. In order to manage invisible groundwater, local governments need to take measures to clarify how the groundwater flows. It can be said that a public organization has to be generally able to manage groundwater to treat it as "public water".

III. Legal principles restricting the extraction of groundwater and conservation of a sound hydrological cycle

A. The idea of the conservation of a sound hydrological cycle and common use of groundwater

If groundwater is interpreted as a constituent of the land, the landowner has the right to use that groundwater. Even so, the

11) A property-based claim is defined as a right which an owner of property can exercise to remove any obstructions that infringes on that right.

12) A Miyazaki, supra note 4, p. 343.
landowner is restricted from taking too much groundwater. What reasons limit the landowner from extracting groundwater?

The source of the water is actually held by other landowners commonly. Therefore, the people who own land underlain by the same groundwater vein shall share the right of extraction with other landowners of that locality. Judicial precedents show that landowners are confined to taking only a reasonable quantity of groundwater. One District Court stated that the landowners sharing the same groundwater vein had a reasonable restriction on the extraction of groundwater because it is a common resource of the landowners. The High Court also decided that the authority to extract groundwater was restricted reasonably based on the treatment of a groundwater vein as a finite resource.

The limitations on the extraction of groundwater are inherent in landownership. Each landowner must share the groundwater which is part of the same groundwater vein. The reasonable restriction on extraction of groundwater mentioned in the above cases is explained that the right to use groundwater is communized by the people who own land underlain by a particular groundwater vein.

The common use of groundwater cannot be maintained steadily if the over-extraction of groundwater by one landowner causes a problem for others and the soundness of the hydrological cycle is violated. The concept of sharing between landowners can, in fact,

be sustainable if water resources are shared based on a sound hydrological cycle. It then becomes an obvious rule that any landowner can extract groundwater unless damage is imposed to the sound hydrological cycle that has been clearly established.

B. Externalization of restricting the extraction of groundwater to conserve a sound hydrological cycle

An extremely important topic is the externalization of the common use of groundwater. A concrete expression of the limits on the extraction of groundwater in principle should be decided upon by mutual agreement of the landowners who share a common groundwater vein.

Currently, in most cases, there are no formal agreements between landowners and the optimal amount of groundwater they can take is unknown, because of invisibility. Groundwater is utilized for various purposes: drinking, agriculture, industry and general water supply. According to these facts, it is difficult for numerous landowners to specify who shares the groundwater and how much they take for their individual purposes.

A definite standard for limiting the extraction of groundwater can be fixed by enacting an ordinance which includes coordinating reasonable usage and conservation of groundwater. This ordinance should be enacted with due consideration of the local conditions of the water environment.

The standard should permit the extraction of a reasonable quantity

of groundwater as long as it conserves a sound hydrological cycle. This also prohibits the landowners from taking groundwater freely without permission from the local government. This reasonable standard of the hydrological cycle in the ordinance externalizes common use with each landowner to promote a sound hydrological cycle. The enactment of such an ordinance would make the idea of a sound hydrological cycle actual in a legal system for the conservation of water resources.

However, it should also be noted that it would not be proper to impose a nationwide standard without local variation to promote the extraction of groundwater based on a sound hydrological cycle. The quantity of groundwater that can be taken depends greatly on local economic and weather conditions. It is important to enact an ordinance that carefully takes into consideration specific local characteristics.

Local governments would be able to allow landowners the privilege of extracting groundwater from their own lands under such an ordinance. In order to support this, laws should delegate authority to decide on a policy about the usage and conservation of groundwater to local governments.

16) Id. p. 349.
17) Articles 5 and 15 in the bill for conservation of the hydrological cycle meet this requirement for local governments. They are able to enact a regulatory ordinance legally based on these provisions.
18) A Miyazaki, supra note 4, p. 350.
IV. "Public" and "private" characteristics concerning water resources

A. Distinction between "public water" and "private water"

The River Act stipulates in Article 2, paragraph (2) that flowing water of a river cannot be the object of a private right. This provision is not contradictory to the interpretation that flowing water is treated as "a public property" legally based on the old Civil Code. On the other hand, the effects of landownership extend into the groundwater which flows under the land. Flowing water of a river is identified as "public water", while groundwater is regarded as "private water". Basing the view of water on the hydrological cycle joins the two kinds of water together.

A person has a property right to use public water, if there is a long standing custom that that person exclusively and continually has used "public water" in a particular place or the river administrator permits its use. Why is it possible for a person to gain a property right to use "public water"? This question must be examined from the viewpoint of the hydrological cycle.

A precedent interprets this question as the characteristics of a right to use water exclusively. The High Court explains:

There are two kinds of opinions about the characteristics of a water right: the public right doctrine and private right doctrine...The former focuses on the formal requirements of

19) This topic has not been in active discussion for a long time, although it is remarkably important for a study about the conservation and use of water resources.
a right, while the latter observes the specific contents of a right. Each viewpoint understands that it emphasizes only one-side of a right. It should be noted that in the case of water rights, a private property right can be controlled by a public organization.

A river administrator treats a water right as a real property which has exclusive features and as a public right which can be granted to users who uphold the obligations under the River Act. A water right includes two characteristics of a real property and a public resource.

"Public water" such as river flow cannot be taken without the permission of the river administrator, and "private water" as groundwater can be freely extracted by the landowner in the absence of a local ordinance. From the viewpoint of the right holder, a water right holder is empowered to use "public water," while a landowner has the authority to take "private water" freely.

As it stands, there is no rational reason for a clear distinction between "public water" and "private water" if water is viewed based on the hydrological cycle. Groundwater can spring out of a stream as river flow, while river flow can percolate down through the soil and become groundwater. As a result, simply depending on where it flows, "private water" can become "public water" and "public water" can become "private water" in the hydrological

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cycle. Such a distinction is not practical. A different theory of using "public water" for private purposes should be worked out based on the hydrological cycle.

B. A theory of integrating the "public" and "private" views of water
It must be recognized essentially that water resources have a public nature at its core based on the assumption that it moves in a cycle. Having a public nature means that access should be open to anyone. In other words, by definition, it is not exclusive. Flowing water in a river is a "public property". Does the groundwater which a landowner can extract have a fundamentally public nature?

Each landowner must share groundwater provided that they have the same groundwater vein. This view implies that the rule states any landowner can extract groundwater unless damage is imposed on the sound hydrological cycle. The restriction which can be expressed as "unless damage is imposed on the sound hydrological cycle" is inherent in the landownership which includes taking groundwater.

What analysis makes public flowing water available for exclusive usage? Keeping the public nature of water at the core of water resource usage, the hydrological cycle provides a basis for

22) A Miyazaki, supra note 4, p. 360.
24) This opinion is congruous with Article 3, paragraph (3) in the bill for the conservation of the hydrological cycle. It stipulates that it should be considered that water is used to maintain a sound hydrological cycle.
everyone to have reasonable access to water. Using this new framework, water resources can be fundamentally viewed as a public resource, as in the case of river flow. At the same time, its public nature can be shrouded by the private right to take water when it reaches private territory, as in the case of groundwater that flows through private property, because putting water into private territory makes public flowing water available for exclusive usage. Then, when water flows back to a river, that private right is shed, and the public nature of water becomes the only visible legal characteristic. In short, the shroud of private power brings exclusive usage to "public water". The exfoliation of the private aspect from "private water" makes water "public".

Such an interpretation can lead the long dispute about Article 2, paragraph (2) of The River Act to a settlement. River flow is removed from the condition which the public can access it, if it is located outside of the territory of a river, and it enters private territory. This is the basis of interpretation for allowing the exclusive use of public flowing water.

V. Conclusion

"Public water" such as river flow can be taken with the permission of the river administrator, and "private water" as groundwater can be freely extracted by the landowner in the absence of a local

25) "Public water" can be used exclusively, when it enters private territory which is under the control of a particular person with a legal title to use water.
26) A Miyazaki, supra note 4, p. 362.
27) Id. p. 361.
ordinance.

There is no rational reason for a clear distinction between "public water" and "private water" if the interpretation is based on the hydrological cycle. Groundwater can actually spring out of a stream as river flow, while river flow can percolate down through the soil and become groundwater. As a consequence, depending on where it flows, "private water" can become "public water" and vice versa in the hydrological cycle. Such a distinction is not practical. A different theory of using public water for private purposes should be worked out based on the hydrological cycle.

This thesis presents the feasibility for any person to use public water exclusively. It is one method to keep the public nature of water at the core of water resource usage as the hydrological cycle provides a basis for everyone to have reasonable access to water. Using this new framework, water resources can be fundamentally viewed as a public resource, as in the case of river flow, while its public nature can be shrouded by the private right to take it, when it enters private territory where it is under the control of a particular person with a legal title to use water, as in the case of groundwater.

The shroud of private power brings exclusive usage rights to "public water" and the exfoliation of that private aspect occurs as water re-enters public territory. From a legal standpoint, it can be viewed that throughout the hydrological cycle water continuously takes on the shroud of private rights and then discards it to reveal its fundamentally public nature based on where it flows.
Water resources have two legal characteristics: one as a public resource and the other as private property. The hydrological cycle can aid in defining and integrating these characteristics from a legal point of view. This theory of defining "public water resource" and "private water property" based on the hydrological cycle provides a sound fundamental theory for legal systems regarding the conservation and use of water resources.

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28) Id. p. 364.