A Study on Enhancing the Function of the Water Commission for Water Dispute Mediation

By

KIM, Jingon

CAPSTONE PROJECT

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Committee in charge:

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ABSTRACT

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In August 2018, Moon Jae-in's government enacted the Framework Act on Water Management in order to improve the quality of life of the people through sustainable water management. In June 2019, the Enforcement Decree of the Framework Act on Water Management was promulgated and the Presidential and Basin Water Commissions having a function to mediation water disputes consisted. Even though various organizations are managing to public conflicts including water disputes before the Water Commissions, many water disputes are still going on nationwide, and the social costs to be paid continue to increase.

In order for the Water Commissions to perform the function of water dispute mediation well, it is necessary to accurately grasp the problems of water dispute mediation in the past and come up with measures to overcome them. In this study, I examined the methodologies for water dispute mediation and derive the characteristics of water dispute through the survey and analysis of 17 water dispute cases. And then, I evaluated the role and limitations of existing water dispute mediation agencies.

Finally, I suggested 5 measures for the Water Commissions to successfully carry out the water dispute mediation function. The proposal of this study is expected to contribute to the normal performance of the water dispute mediation function of the Water Commission.

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1. Introduction

In August 2018, Moon Jae-in's government established the Framework Act on Water Management in order to improve the quality of life of the people through sustainable water management. The Framework Act on Water Management provides the fundamental concept and policy direction on water management, and also includes the establishment of the National and Basin Commissions to deliberate and resolve important matters of water management. (the Framework Act on water management, 2018)

In June 2019, the Enforcement Decree of the Framework Act on Water Management was promulgated and the National and Basin Water Commissions consisted. The two main functions of the Water Commissions are to deliberate and resolve the National Basic Plan for Water Management and to mediation water disputes. Currently, the Water Commissions are preparing for detailed matters for water dispute mediation, such as procedures and criteria.

Even before the Water Commissions were established by the Framework Act on Water Management, various efforts were made to mediate water disputes from the Office for Government Policy Coordination, the Anti-Corruption & Civil Rights Commission, the central governments. Despite these efforts, however, many water disputes are still going on nationwide, and the social costs to be paid continue to increase.

In order for the Water Commissions to perform the function of water dispute mediation well, it is necessary to accurately grasp the problems of water dispute mediation in the past and come up with measures to overcome them. In this study, I examined the methodology for water dispute mediation and derive the characteristics of water dispute through the survey and analysis of 17 water dispute cases. I evaluated the role and limitations of existing water dispute mediation agencies and presented measures for the Water Commissions to successfully carry out the water dispute mediation function.

2. Literature Review

Since the 1960s and 1970s, Korea has been building various infrastructure including multi-purpose dams for water resources development, in order to achieve rapid industrial growth. However, Various conflicts inherent in the military regimes of the 1970s and 1980s had begun to emerge throughout society in the 90s and 2000s since the Declaration of Democracy in 1987. In response, the government also implemented policies to resolve public conflicts in earnest by organizing a special committee on conflict adjustment under the Presidential Commission on Sustainable Development. As various types of conflicts related to dam construction, water rights, and water distribution, the Ministry of Construction and Transportation classified water disputes and proposed ways to adjust them for each type of water dispute. (The Ministry of Construction and Transportation, 2007)

In 2007, regulations on the prevention and resolution of conflicts in public institutions were enacted in response to calls for effective prevention and resolution of public conflicts occurring in various parts of society. The system for the management of public conflicts has been established through producing manuals for the management of public conflicts by the Office for Government Policy Coordination and central government ministries. Alternative Dispute Resolution (ADR) has been adopted as a key dispute settlement tool to resolve public conflicts and is widely being used in various public fields. (the Office for Government Policy Coordination, 2016)

In the environmental sector, the Environmental Dispute Mediation Act was enacted in 1991 to resolve environmental disputes on water quality, noise and atmosphere, and the Environmental Dispute Resolution Commission is operated as an administrative alternative dispute settlement tool. Recently, however, the need for a change in alternative dispute settlement has been raised as interest and opportunities for public participation in policies have been expanded. (Kim, 2019)

Internationally, there are serious water disputes in international transboundary rivers such as the Rhine, Mekong, and Nile rivers. In these rivers, international committees are established and operated to resolve water disputes. Sadoff and Grey (2002) presented the theory of benefit sharing as a water dispute resolution analysis tool and emphasized the need to extend beyond the economic benefit category to social, political, and environmental benefits.

3. Research method

3.1 Subject and scope of research

In this study, I investigated and analyzed domestic water dispute cases and water dispute settlement functions and procedures operated by the Office for Government Policy Coordination, the Anti-Corruption and Civil Rights Commission, and the Environmental Dispute Resolution Commission to present measures to strengthen the water dispute settlement function of the Water Management Committee. Through these steps, I tried to find out the characteristics of water disputes, and deduce implications from the problems of water dispute mediation and for improvement measures.

In addition, I proposed what kind of water dispute coordination tools the Water Commissions should have through tools for dispute resolution such as Alternative Dispute Resolution (ADR) and Benefit sharing, which are widely used in the public conflict field.

3.2 Research method

In order to carry out this study, the research on literature, such as relevant research papers, reports, and government data, is conducted first. And then the collected data were analyzed and organized by case, agency and cause of conflict.

Problems and characteristics were analyzed using logical analysis tools from the investigated and organized data, and optimal resolution criteria and methodology were presented considering the current water dispute characteristics.

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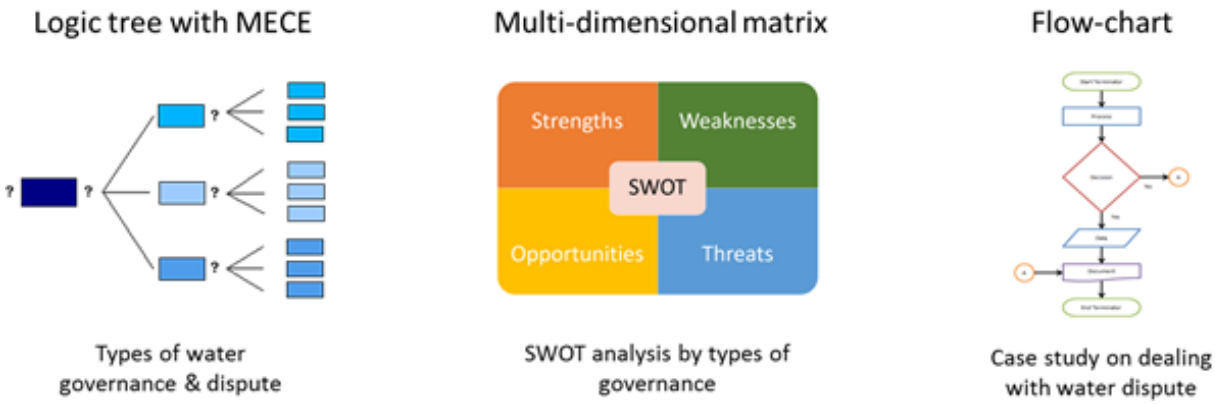
Figure 3-1. Typical logical analysis tools



4. Methodology of water dispute mediation and Analysis of water dispute case in Korea

4.1 Definition and types of water dispute

4.1.1 Definition of public conflict and water dispute

Water disputes are a type of public conflict, and understanding of public conflict which is the upper concept of water dispute is necessary to understand water disputes.

In ‘the Regulations for the Prevention of Conflicts in Public Institutions and the Conflict Management Manual of Public Institutions’, public conflicts define as conflicts of interest among stakeholders affected by the policies (or projects), public organizations, and the government agencies in the process of establishing (or implementing) various policies and projects by central administrative agencies, local governments, or public organizations. That is, public conflicts involve 'government agencies' or 'public institutions', a number of 'residents' or stakeholders, and 'policy or project'. (Park, 2011)

In the framework of the definition of public conflict, water disputes can be defined as conflicts between interested parties in the process of establishing and implementing policies for the development, utilization, and management of water resources which is one of the public goods. (the Framework Act on water management, 2018) Conflicts over water, a limited resource, are occurring not only for quantitative water use, but also for various causes such as water quality, property rights infringement and environmental protection. The Framework Act on Water Management is based on the basic ideology of sustainable using and preserving water and continuing its value into the future while maintaining harmony between the natural environment and social and economic life. (the Framework Act on water management, 2018) Therefore, the nation should establish the principle of water dispute based on the basic ideology of the Framework Act on Water Management, and coordinate water disputes.

4.1.2 Type of water dispute

Water disputes happening in Korea can be divided into three types by the function, cause, and related group. (Ministry of Construction and Transportation, 2007)

Water disputes related to the functions of rivers are divided into water use, water control, and environmental functions as shown in Table 4-1. With regard to water use functions, it can be divided into water rights and operation methods of hydropower, and with respect to flooding control functions, it can be divided into flood damage and soil damage. In addition, environmental and water quality can be divided into development activities, designation of water source protection zones, share of water conservation costs, and compensation for water pollution damage.

Table 4-1. Types and cases of water disputes by river functions

Type of water dispute		Contents	Cases
Water use	Water right	Disputes concerning the right to continue and exclusively use public water, including rivers.	Conflict over water prices between local government and K-water
	Hydropower	Disputes depending on the method of operation of dams, such as maximizing power efficiency (such as peak power generation) and ensuring river maintenance flow.	Unification of hydropower dam management
Water control	Flood damage	Water dispute over the problem of identifying cause providers and compensating damages in the event of damage caused by floods	Civil petition for dam release in Nam river dam
	Soil damage	Conflict over the cause and damage of soil erosion in case of flooding	Disputes over soil erosion caused by the development of large-scale golf courses
Environments and etc.	development activity	Water disputes related to the development of water sources or dams, such as the reduction of downstream river maintenance flow, the possibility of destruction of river environment, and the change of water quality due to changes in downstream river quantity.	Salt damage caused by reduced flow rates downstream of the Seomjin river
	Designation and cancellation of water source protection zones	Conflict between the expansion of water supply protection zones for water quality management and the demand for cancellation of designation due to property rights infringement	Civil petitions for infringement of property rights due to restrictions on development upstream of Paldang dam
	Payment for water quality conservation	Conflict over the sharing of water conservation costs between local governments in the upper and lower rivers	Cost-sharing disputes between local governments in the upper and lower reaches of the Han river
	Water Pollution Damage Compensation	Disputes related to compensation for downstream damage caused by discharge of water pollutants, such as wastewater discharge.	Conflict over fish mass death in Imjin river

Water disputes based on the causes of conflict can be divided into the dual characteristics of water resources value in the water resources management system, the ambiguity of the regulations of water rights, and the uncertainty of nature phenomenon characteristics. In addition, water disputes can be divided by various dispute groups, such as the central government, public institutions, local governments, environmental organizations, and local residents

Examples of water disputes were Yeongdong dam (Dong river), Construction of Hantan river dam, and Sihwa lake water quality. Currently, various disputes are under way, including water distribution of Yongdam dam, removal of weirs of the Four Major Rivers Project, construction of Munjeong dam, Daegu-Gumi water problem, Busan-Gyeongsangbuk-do water problem, corbicula damage near the Seomjin river's ashore, and opening of estuary banks in large-scale rivers like the Nakdong river.

Most of the water disputes in Korea have been caused by the DAD (Decide-Announce-Defend) way in which the government unilaterally implements policies without sufficient consensus. (Yu, 2016) Conflicts caused by differences in positions between government and local governments and stakeholders have been an important factor in these water disputes.

Table 4-2. Types of water disputes by the cause of conflict

Type of dispute	Contents
Double feature of water resources value	Water is a special resource with economic characteristics, but it has the characteristics of moving without stagnation, making it difficult to define the concept of ownership.
Unclarity of Water Rights Regulations	Regulations, criteria and principles for water rights, which mean the right to use water, are not specified
Uncertainty of natural phenomena	Difficulty in predicting water quantity due to uncertainties in natural phenomena caused by meteorological and topographical effects

4.2. Methodology of water dispute resolution

4.2.1 Alternative Dispute Resolution

The clearest way to resolve a water dispute is a litigation. However, dispute resolution through litigation has limitations such as long time required, high-cost payments, and forced termination by third parties.

The use of Alternative Dispute Resolution (ADR) is being highlighted as an alternative to overcoming the limitations of judicial dispute resolution methods in managing public conflicts, including water disputes. (Yu, 2016) Alternative dispute settlement uses such methods as negotiation between parties, mediation by third parties, and mediation by third parties to seek solutions that meet internal interests. Public conflicts often involve a large number of stakeholders, or sometimes the stakeholders are not clearly identified, the issues vary, and the conflicts over values or ideologies are often mixed. In addition, alternative dispute resolution is commonly used in public conflicts because negotiations between government and private sector stakeholders with a severe power imbalance require balance of power, mutual trust and respect. However, if only limited information is shared to prepare for lawsuits caused by ADR failure, or if it is discussed only as an agenda related to litigation rather than a comprehensive agenda, it may be difficult to resolve the dispute. (Office for Government Policy Coordination, 2016)

Lee (2015) suggested that the advantages of alternative dispute resolution include saving time and money, agreeing between the parties, characteristics of non-disclosure, and the possibility of providing a win-win settlement between the two parties. In addition, six drawbacks were noted:

First, it is highly likely that the problem will not be resolved when compulsory decisions by third-party intervention, rather than voluntary participation by interested parties. Second,

coercion and effectiveness may be weak because they emphasize the mediating role. Third, the possibility of making a wrong judgment remains because of the weak process of finding effective evidence. Fourth, legalism may not be realized on the premise of agreement or concession by the parties. Fifth, the legal safety is smaller than the trial. Sixth, if misused, it could infringe upon the right of the disputing parties to stand trial because of the basis of the judicial economy based on the 'rapid trial principle'. Table 4-3 shows the characteristics and advantages and disadvantages of trials and alternative dispute resolution.

Alternative dispute resolution is being used by the Conflict Mediation Council under the Regulations for the Prevention of Conflict in Public Institutions and the Environmental Dispute Mediation Commission under the Environmental Dispute Mediation Act.

Table 4-3. Comparison of characteristics and advantages and disadvantages of trials and ADRs (Lee, 2015)

Characteristics	Trial	ADR
Basic principles	Parteienprinzip approach	Non-parteienprinzip approach
Subject	Legal situation	Conflict background situation
Main player	Judge	Party to damage
Terminology,	Legal language	Ordinary language
Education	Legal training	Phenomenon and Arbitration Training
Required knowledge	Understanding Legal Procedures	Understanding of social psychology
Advantage	Legal stability/Judgment by the judge	Low cost, private, fast, creative, flexible, expert use, simple, clear, and effective communication
Disadvantage	High cost, unilaterality, rigidity, required time for trial, need for attorney appointment, less consideration for special circumstances, communication by legal terms, distrust in the judiciary	Unstable, low binding, difficulty in mutual agreement, trial restart if it does not comply with the outcome of mediation or arbitration.

4.2.2 Benefit sharing

Benefit sharing method in international transboundary rivers is a way to provide a new perspective away from the dichotomous perspective such as dispute or cooperation. It was proposed as a tool to create and distribute mutual benefits as well as further improve the quality of life and promote growth through the joint use of limited resources. (Sadoff & Grey, 2002, Lee, 2015).

There are four types of benefit-sharing. The first is the type that brings direct benefits to the relevant international rivers, such as improving water quality or improving species diversity. The second is the type that brings about an increase in benefits that can be obtained from rivers, such as hydropower generation or irrigated agriculture. The third is the type that refers to the benefits of reducing costs due to rivers, such as flood or drought management and reduction of international disputes. The fourth is the type referring to the benefits that can be gained beyond the river basin, such as the formation of a large market due to economic integration of the river basin.(Sadoff & Grey, 2002) The stakeholders of the international transboundary river on the basis of benefit-sharing regarded the formation of the river management committee, the conclusion of legally binding agreements, and the establishment of a governance system for the resolution of cooperative problems as key factors leading to the water dispute to cooperation. (Kang & Lee, 2005)

4.3 Water dispute case study and analysis by basin

Since the 1970s, Korea has solved the water problem through large-scale dam construction in order to cope with the surging water demand in line with rapid economic development. In this era, the national interest was prioritized over the rights and interests of residents or citizens, and the logic was widely used that individuals can live well only when

the nation is well-off. Thus, the water dispute has been concluded by the unilateral decision of the nation. However, with democracy settling down and the importance of guaranteeing individual rights highlighted, it has become an new era in which it is difficult to solve water problems with the unilateral decisions of the nation. Various water disputes involving water use around major rivers show no signs of being resolved, and have been drifting for a long time. Therefore, I examined the cases of water disputes in progress in each large river basin and derived the characteristics of water disputes.

Table 4-4. Water disputes in progress in each large river basin.

Region	Cases of Water dispute
Nation	Renaturalization of the Four Major River Water use charge
Han river	Unification of hydropower dam management Water prices between Chuncheon city and K-water Securing water supply in Sokcho Removal of Singok submerged weir
Nakdong river	Water intake plant relocation between Daegu city and Gumi city Securing clean water in Ulsan Securing clean water between Busan city and Gyeongsangnam-do province Opening of estuary bank in Nakdong river Utilization of seawater desalination in Gijang, Busan
Geum river	Opening of estuary bank in Geum river Water distribution of Yongdam dam
Yeongsan, Seomjin river	Salt damage caused by reduced flow rates downstream of the Seomjin river Securing water for improving water quality in Yeongsan river Securing water for water demand in Yeosu

Some of the ongoing water disputes over the nation include the removal of four major rivers weirs and the conflict over water use charges. In the Han river basin, the conflict over the unification of the management of hydropower dams to utilize them for multi purposes, the conflict over water prices between Chuncheon city and K-water, and the conflict over the

securing of water sources in Sokcho City. In the Nakdong river basin, there are the conflict between Daegu and Gumi, the conflict over securing clear water in Ulsan, which are linked to the preservation of cultural assets, the conflict over securing clear water between Busan and Gyeongsangnam-do Province, the conflict over the pros and cons of opening the Nakdong river estuary, and the conflict between local residents on how to use the Busan Gijang seawater desalination facility.

In the Geum river basin, there are the conflict over pros and cons of opening the Geum river's estuary bank and the conflict over the water distribution of Yongdam Dam. Finally, in the Yeongsan river and Seomjin river basin, the salt damage conflict caused by the reduction of the downstream flow quantity of the Seomjin river, the Yeongsan river water quality improvement conflict, and the water security conflict in Yeosu and Gwangyang are drifting without finding a solution.

4.3.1 Water disputes in national level

1) Renaturalization of the Four Major River

The Four Major River Restoration project is a large river maintenance project as the Korean Green New Deal Project of the Lee Myung-bak government with a budget of 22 trillion won from 2008 to 2012. The project is aimed at dredging the four major rivers and constructing weirs to restore ecosystem in rivers by increasing flow and storage of the river. Although the project was carried out to lower flood levels and improve water supply and water intake conditions through this project, it has led to social conflicts since the beginning of the project due to the lack of social consensus in the process of the project, as well as the growing voice that it is feared to worsen water quality, aquatic ecosystem, and safety of weirs, contrary to the government's claim.

The Moon Jae-in administration, which was launched in 2017, announced that it would judge the Four Rivers as the main culprit of the destruction of the aquatic ecosystem, open the floodgates at all times, and decide whether to renaturalize the Four Rivers through reevaluation. Currently, those who oppose the re-naturalization due to restrictions on the use of agricultural water, and those who insist on restoring the river environment and that the weirs should be removed and re-naturalized as soon as possible are confronting each other. Conflict over the re-naturalization of the four major rivers is highly likely to be the first water dispute resolution task of the Presidential Water Commission, which was launched in 2019.

2) Conflict on water use charge

The water use charge is a cost that waterworks operators impose to end-users in proportion to the amount of water used in order to raise funds for residents support projects and improvement projects of water quality. Targets for charge are the final consumers who receive raw water or purified water directly from the public waters of the four major rivers. The special law for water use charge was enacted on the Han river in 1999 and expanded to Nakdong, Yeongsan, Seomjin, and Geum rivers in 2002. However, controversy over equity of imposition area, appropriateness and efficiency of the use of funds, etc. continues. As a result, the local government developed and used small and medium-sized streams that were not charged to avoid the charges, despite the fact that the four major rivers had extra quantities. This creates restrictions on the efficient use of water resources. Although efforts have been made to improve this, this conflict has still not been resolved as the operation of the fund has been decided by certain stakeholders like local governments who are directly benefiting from the charge.

4.3.2 Water disputes in Han river

1) Unification of hydropower dam management

In the 2000s, disasters caused by climate change such as abnormal drought and flooding have been intensifying. There was a demand to increase water management efficiency by integrating a divided dam management system to increase the responsiveness to disasters. In 2016, the government announced a plan to unify dam management by transferring hydropower dams from KHNP to K-water. However, KHNP denied the effect of unification of dam management and showed an uncooperative attitude toward negotiations. As a result, the plan to unify the dam management has been stalled, and only conflicts between the agencies are deepening. The unification of dam management may be a policy that is beneficial to the national interest in terms of efficient use of water resources, but as it is related to the survival problem of one company, a new approach that encompasses the survival problem of the company beyond the water management effect is needed. The dam management conflict between the two public organization is expected to intensify as the current government's de-nuclearization policy adds to the backlash from KHNP.

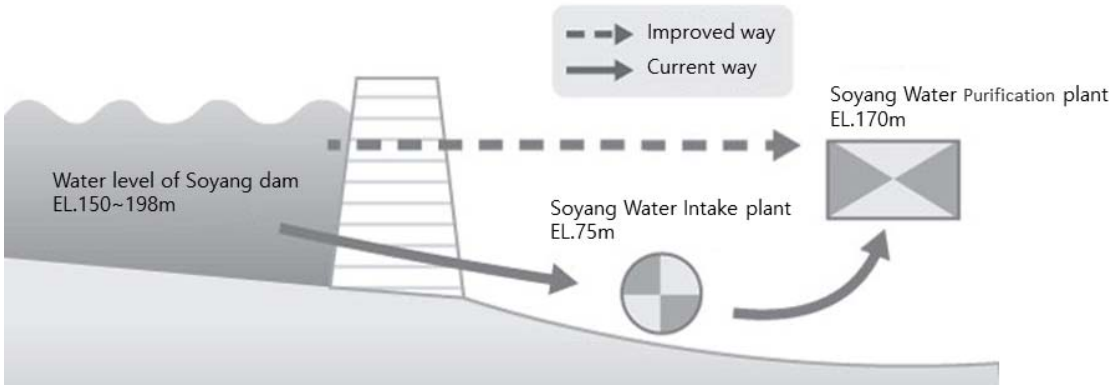
2) Conflict in water prices between Chuncheon city and K-water

Conflict in water price between Chuncheon city and K-water began in 1995 when Chuncheon city moved its existing Janghak water intake plant to Soyang water intake plant located downstream of the Soyang river Dam and increased intake quantity from 20,000 m^3/day to 75,000 m^3/day. K-water demanded that Chuncheon city pay for the water because it uses more than 50,000 m^3/day of water than before. On the other hand, Chuncheon city refused to pay for the water because Chuncheon city had been using the water without paying for it even

before the construction of the Soyang river dam, and the new water intake station was not affected by the dam.

Considering the results of K-water's win cases in legal disputes over similar water prices with six cities and counties, including Namyangju and Gapyeong in Gyeonggi Province, Chuncheon city is at a disadvantage. However, K-water tried to avoid legal disputes and find a win-win solution because citizens lost their hometowns by the construction of the Soyang river Dam in 1973 and have stood various kinds of inconvenience by it. As a result, in 2019, K-water devised and proposed a win-win cooperation plan that would benefit both agencies, and as the two agencies reached a mutual agreement, the conflict that lasted for 24 years is expected to be resolved. The win-win measures agreed upon by the two agencies are as follows:

Figure 4-1 Win-win plan for water price conflict in Chuncheon city



Instead of Chuncheon city taking water from the Soyang water intake plant, it is changing the way water is supplied directly from the Soyang river dam. This reduces the cost of pumping water (up to 2 billion won/year) to send water from the Soyang water intake station (75 meters above sea level) to the Soyang water purification plant (170 meters above sea level). On the

other hand, K-water will be able to receive unpaid water prices over the past five years considering the application of extinctive prescription, and stable payment of future water prices will be guaranteed. This requires about 14 billion won in project expenses. The project costs will be paid by 50 percent with central government finance and Chuncheon's local finance, which will be subject to K-water's up-front investment in Chuncheon city and Chuncheon city will pay back the expenses over 20 years to reduce the financial burden of Chuncheon city.

3) Conflict over securing water supply in Sokcho

Sokcho city has been suffering from repeated water shortages due to the drought that has continued in recent years. As the main water source, the Ssangcheon underground water dam, was very vulnerable to drought, making it difficult to supply water, additional water supply was needed. However, it was difficult to secure additional water sources in Sokcho. As a result, Sokcho city proposed to the government to use the surplus water resources of Goseong and Yangyang, which are nearby local governments, but the nearby local governments refused to do so, calling it an unagreed unilateral proposal, which deepened the conflict between Sokcho city and nearby areas. Goseong-gun temporarily agreed to use the water resources in Goseong-gun to resolve the limited supply of Sokcho city, which continues in 2018, but failed to agree on permanent measures, so Sokcho city should find the way to secure stable water supply permanently.

Sokcho city needs to replace old water pipes to reduce leakage water, build a block systems of water supply network, and develop underground water. In addition, to resolve the water conflict, Sokcho city should suggest new ways to share water with nearby local governments by preparing a win-win plan.

4) Removal of Singok submerged weir

Singok submerged weir, located downstream of the Han river, was constructed in 1988 as part of the Han River Comprehensive Development Project. Until now, Singok submerged weir was built downstream of Gimpo bridge and operated to provide stable supply of agricultural and industrial water and to launch cruise ships on the Han river. It also has contributed to the convenience of using the Han river, including water leisure, ship operation, and fishing activities. However, some argue that it should be removed because this structure is cutting off the ecosystem, worsening the water quality. The Seoul Metropolitan Government formed a "Seoul Metropolitan Government Policy Committee for Shingok submerged weir".

Figure 4-2. Location map of Singok submerged weir downstream of Han river

It will analyze the impact of opening the floodgates of Shingok submerged weir, and decide on the direction of the removal after collecting opinions from stakeholders. However, it is not easy to conclude because the argument that the removal is necessary as soon as possible to restore nature, and the other argument that it is difficult to remove without preparing measures for the use of water, such as agricultural water, and other measures for the facilities of the Han river that meet the existing water level are facing each other. The removal of Singok submerged weir is an issue that needs to be discussed along with the opening of the estuary bank in other major rivers, which have similar conditions.

4.3.3 Water disputes in Nakdong river

1) Conflict on water intake plant relocation between Daegu city and Gumi city

The conflict between Daegu city and Gumi city began in February 2009 when the government suggested the relocation of the Daegu-based water intake plant to the Haepyeong intake plant in Gumi city, saying that harmful chemicals emitted from the Gumi National Industrial Complex pollutes the water at Maegok and Munsan intake plants in Dalseong-gun, Daegu citizens' drinking water sources. With the relocation of the water intake plant, the Daegu Metropolitan Government has called for the joint use of safe and unpolluted water to Gumi and Daegu citizens. However, Gumi city is thoroughly managing harmful substances after the Gumi city water accident, and opposes the relocation of the water intake plant, saying that there is no difference in the water quality of the Nakdong river near Gumi and Daegu, and that the additional water source protection zone may be established due to the relocation of the water source and green algae would be activated as increasing in the amount of water intake and reducing quantity of water flow in the rivers near Gumi City.

In 2019, the Prime Minister signed a mutual cooperation agreement with four local governments, including Daegu and Gumi, the environment minister, the head of the Office for Government Policy Coordination, and the head of the Cultural Heritage Administration to resolve the water dispute in the Nakdong river basin, including the Daegu-Gumi water intake plant, and proposed to solve the water problem based on a research project by the Ministry of Environment, which is currently underway. However, water disputes that have been going on for more than a decade could drift again if they are not satisfied with the results.

2) Conflict over securing clean water in Ulsan

Ulsan receives water from Daegok dam, Sayeon dam, and Hoeya dam in the administrative district of Ulsan, while the most of water is drawn from the lower reaches of the Nakdong river. However, there was a high demand for clear water due to resistance to water from the Nakdong river, which had a poor water quality compared to dam water. Furthermore, the UNESCO listing of the Bangudae Petroglyphs located in the upper reaches of Daegok stream in the upper reaches of the Sayeon dam led to the need for preservation, saying that weathering continues due to continuous flooding and repeated exposure. In order to minimize weathering, Daegok dam and Sayeon dam had to be operated by lowering the water level, so the amount of clear water available in Ulsan was reduced further.

The Ulsan Metropolitan Government proposed to supply the city with extra water in other areas, including Unmun dam, in order to secure clear water, but it has not been able to secure clear water due to opposition from relevant local governments. As the Ulsan water issue involves not only water use stakeholders, environmental and civic groups, but also the Cultural Heritage Administration and nearby local governments, it is very difficult to reach an agreement that all interested parties are satisfied with.

3) Conflict over securing clean water between Busan city and Gyeongsangnam-do province

The city of Busan, located near the Nakdong river's estuary, wanted to get rid of anxiety over the supply of drinking water from the polluted Nakdong river as a source of water. The Busan Metropolitan Government pushed for a plan to draw water from the Nam river in Jinju and supply it, but the conflict between the Busan city and Gyeongnam-do province began due to opposition from Gyeongsangnam-do province. Gyeongsangnam-do province opposes the Busan Metropolitan Government's plan because raising the water level of the Nam river dam for additional water supply increases the risk of flooding in areas near the Nam river dam, such as Sacheon. Due to strong opposition from the areas near the Nam river dam, the Busan Metropolitan Government promised to give up its plan to secure clean water through the development of the Nam river dam. Instead, Office of the Prime Minister signed an agreement to resolve the water problem in 2019 with the Minister of Environment, the Mayor of Busan Metropolitan City, and the Governor of Gyeongsangnam-do province, saying, "We will diversify the water intake sources with the cooperation of Gyeongsangnam-do province to secure alternative water sources." However, if the Daegu, Gumi, Ulsan, Busan, Gyeongsangnam-do, and interested parties fail to present acceptable solutions, the long water dispute is likely to continue.

4) Conflict over opening of estuary bank in Nakdong river

The controversy over the river cutoff caused by the 4 Major River Restoration project expanded to the removal of the river bank in large scale rivers. The Nakdong Estuary Environment and Citizens' Association has called for the restoration of the brackish ecosystem through the opening of floodgates since 2012. The Nakdong river estuary bank is an important

source of water supplied to nearby local governments such as Busan, Yangsan, Gimhae and Ulsan for living, industrial and agricultural water. Local governments and farmers who use the Nakdong river as a source of water are strongly opposed to the opening of the river bank because it will be difficult to use it as a source for water supply when salt water intrusion happens due to the opening of the river bank. However, discussion about the opening of the estuary, which Moon Jae-in suggested as presidential campaign promises has been accelerating since his government began. Currently, the research project is being promoted to temporarily open floodgates to check their impact. However, due to opposition from farmers who are concerned about the irreversible damage caused by the opening of the estuary bank, the government has pushed ahead with the plan slowly.

Even now, the pros and cons of the opening of the estuary bank to the temporary opening of the floodgate are confronting each other, so the dispute over the opening of the estuary bank is unlikely to end easily. As the opening of the Nakdong river's estuary is a critical issue affecting the opening of the estuary of other rivers such as the Geum river and the Han River, it is a water issue that needs a wider approach, not limited to specific areas.

5) Utilization of Seawater Desalination in Gijang, Busan

The Busan Metropolitan Government promoted the seawater desalination plant in Gijang as a national project to replace the Nakdong river water source with poor water quality. After being selected as the national project in 2008, the plant was completed in 2014 and local government was supposed to supply water to residents. However, after the Fukushima nuclear accident, residents who felt anxious about using seawater near the Gori nuclear power plant refused to use the plant. Eventually, the Gijang seawater desalination plant stopped. The

stakeholders of seawater desalination is local residents, operators, the Environment Ministry, and the Busan Metropolitan Government, and if seawater desalination treatment water is supplied as industrial water, K-water, the Ministry of Commerce, Industry and Energy can be an indirect stakeholder in preparing a win-win plan. Residents' anxiety over the impact of nuclear power plants is so aesthetic that understanding and persuading residents about the safety of seawater desalination cannot be a realistic measure. Therefore, an alternative could be to replace industrial water, etc. and to develop a plan to cooperate among stakeholders on additional cost-bearing issues.

4.3.4 Water disputes in Geum river

1) Conflict over opening of estuary bank in Geum river

The Geum Estuary Bank was constructed in 1990 by the Korea Rural Community Corporation with a project cost of 100 billion won over eight years for the purpose of supplying agricultural water to Jeollanam-do and Chungcheongnam-do provinces. It is responsible for preventing salt damage to agricultural land due to backflow of seawater and for the role of a source of agricultural and industrial water. However, some civic groups and local stakeholders are calling for the opening of the estuary bank, raising the problem of not only the accumulation of pollutants due to the falling flow velocity, the depletion of dissolved oxygen, but also the collapse of the ecosystem. With the improvement of Sihwa Lake's water quality through the passage of seawater and the move to open the estuary bank of the Nakdong river, which is currently under active discussion, voices for the opening of the Geum river's estuary bank are expected to grow even louder. Although the regions are different, it is deemed necessary to deal with the problems of the Nakdong, Geum, and Yeongsan rivers together, which have the same issue of opening the estuary bank.

2) Conflict over water distribution of Yongdam dam

Yongdam Dam is Korea's fifth-largest multipurpose dam installed in Jinan county, upstream of Daecheong dam in the Geum river basin, and was built for water supply in the west coast of Jeollanam-do province. At the time of construction, Chungcheongnam-do province raised the issue of water distribution of Yongdam dam, raising problems such as worsening water quality caused by the decrease in the flow quantity of Daecheong Lake, and is demanding that water be distributed to Chungcheongnam-do province, which is currently less water-used in Jeollanam-do province, as the construction of Jicheon dam in Cheongyang county, Chungcheongnam-do province, was canceled. Jeollanam-do province, however, opposes the redistribution of water to Chungcheongnam-do province, as water use will surge once the Saemangeum project begins in earnest. In 2003, the Yongdam Dam Joint Investigation Committee decided to supply 3.7 m^3/s for a limited period of time until 2021. The water dispute between the two provinces is expected to intensify again from 2021, a year away.

4.3.5 Water disputes in Yeongsan and Seomjin rivers

1) Salt damage caused by reduced flow rates downstream of the Seomjin river

Fishermen in the Seomjin river estuary have filed complaints that the supply of water from the Seomjin river upstream dam to the Yeongsan river basin has reduced the flow rate of the Seomjin river downstream, resulting in a decrease in the production of corbicula. This is causing changes in the river's ecological environment and reducing residents' income, according to downstream residents. For these reasons, residents are demanding that the dam water supplied from the Seomjin river basin to the other basin should be redistributed to increase the supply of river water. However, the K-water argues that it is desirable to conduct

an accurate cause analysis and come up with measures based on the results, as the reason for the decrease of corbicula was not only because of the decrease in flow but also because of the lowering of the riverbed due to the development of Gwangyang Bay. In particular, the Seomjin river and Yeongsan river basin are difficult to supply enough water as a whole, and given the additional water demand in the future, the increase in the downstream flow rate of the Seomjin river should be determined after careful consideration of the conditions of the entire basin and the impact of the decision on the supply plan.

2) Securing water for improving water quality in Yeongsan river

Yeongsan river has the worst water quality among the five major rivers due to its lack of river maintenance water and large discharge of sewage treatment water. Unlike other rivers, there are no multi-purpose dams and it is difficult to secure river maintenance water because it relies absolutely on agricultural reservoirs. The problem of water conflict exists between the basin areas because it relies on the Seomjin River basin, which is a different basin, rather than on the supply of living and industrial water through its own water sources. In addition, the water quality deteriorated rapidly after the discharge of sewage treatment water from Gwangju city, where a large population resides. As a result, there are calls for securing water for river maintenance by utilizing agricultural reservoirs for multiple purposes, and using them to improve water quality, but it is difficult to reach an agreement due to opposition from Korea Rural Community Corporation and farmers.

3) Conflict over securing water for water demand in Yeosu

Five local governments (Yeosu, Suncheon, Gwangyang, Goheung and Boseong) in the eastern part of Jeollanam-do province receive water through the Gwangyang Industrial Waterworks Project. However, as of 2017, the operation rate is close to 96 percent, and there is a risk of a massive water shortage in the event of worsening water supply conditions such as drought. In addition, water demand continues to increase, with the Yeosu National Industrial Complex demanding an additional 9.8 million m^3/day industrial water. However, it is not easy to come up with countermeasures due to restrictions on the amount of water intake at the Dahap water intake plant and the failure of the Naeseo dam plan due to opposition from environmental groups.

4.3.6 Analysis of water dispute cases by basins

I examined the characteristics of ongoing water disputes by classifying them by key stakeholders of dispute, dispute issues, and cause of dispute, focusing on the cases of major domestic water disputes investigated.

The key stakeholders of the dispute in the major water disputes in Korea are summarized in Table 4-5. The key stakeholders of the dispute can be divided into environmental groups, residents like farmers, fishermen, local residents, etc. local governments, and public institutions like K-water, KHNP and KRC.

In the water use sector, such as securing water sources, water disputes are occurring mainly among local governments. The environmental group acts as a key dispute stakeholder with farmers in disputes related to the removal of existing river facilities like weirs, and estuary banks. Public institutions are experiencing water disputes with various disputing stakeholders,

including environmental groups, local governments, other public institutions, and residents by the dispute. The central government, including the Ministry of Environment, is acting as a mediator in water disputes rather than being directly involved in disputes, so it has not emerged as a key player in water disputes.

Table 4-5. Key stakeholders by water dispute

Region	Dispute case	Key stakeholders	
National	Renaturalization of the Four Major River	Environmental organization	Residents(farmers) Local governments(Related to Water intake facilities)
	Water use charge	Local governments (Except for areas adjacent to 4 major rivers)	Local governments (Including areas adjacent to 4 major rivers)
Han river	Unification of hydropower dam management	Public organization(KHNP)	Public organization(K-water)
	Water prices between Chuncheon city and K-water	Local government (Chuncheon)	Public organization(K-water)
	Securing water supply in Sokcho	Local government (Sokcho)	Local government (Yangyang, Goseong)
	Removal of Singok submerged weir	Environmental organization	Residents(Farmers) Public organization(KRC)
Nakdong river	Water intake plant relocation between Daegu city and Gumi city	Local government(Daegu)	Local government(Gumi, etc.)
	Securing clean water in Ulsan	Local government(Ulsan)	Local government (Daegu, Gumi, etc.)
	Securing clean water between Busan city and Gyeongsangnam-do province	Local government(Busan)	Local government (Gyeongsangnam-do)
	Opening of estuary bank in Nakdong river	Environmental organization	Residents(Farmers)
	Utilization of seawater desalination in Gijang, Busan	Local government(Busan)	Residents
Geum river	Opening of estuary bank in Geum river	Environmental organization	Residents(Farmers) Public organization(KRC)
	Water distribution of Yongdam dam	Local government (Chungcheongnam-do)	Local government (Jeollanam-do)

Yeongsan and Seomjin rivers	Salt damage caused by reduced flow rates downstream of the Seomjin river	Residents(Fishermen)	Public organization(K-water) Local governments using water of Seumjin river)
	Securing water for improving water quality in Yeongsan river	Public organization(KRC)	Residents in Yeongsan river basin
	Securing water for water demand in Yeosu	Environmental organization	Public organization(K-water) Local governments using water of Seumjin river)

The main issues of the water dispute are arranged as shown in Table 4-6. The largest number of issues is the use of water sources, or disputes related to water security. These disputes occurred during the process of securing water sources between local governments for the safe and stable supply of water to local residents, including those between local governments that have priority over water sources in the region and other local governments that want to use them.

The second largest issue is the dispute over the installation and removal of river facilities. Facilities made by the four-river restoration project and installed in estuary of large rivers are related to water disputes between environmental groups and farmers which have made it possible to secure stable water supply.

Disputes related to water use costs such as water use charges and water rights, continue to arise. As efficient water management becomes important due to climate change, disputes over the trial to operate single-purpose dams for multi-purpose between dam operators are also taking place.

Table 4-6. Major issues in water disputes.

Field	Water dispute	Major issue
Water use	Securing water supply in Sokcho	Exclusion to the use of water sources, Damage in the area of water sources
	Water intake plant relocation between Daegu city and Gumi city	Exclusion to the use of water sources, Damage in the area of water sources
	Securing clean water in Ulsan	Exclusion to the use of water sources, Damage in the area of water sources
	Securing clean water between Busan city and Gyeongsangnam-do province	Exclusion to the use of water sources, Damage in the area of water sources
	Water distribution of Yongdam dam	Priority and Exclusion to the use of water sources, Damage in the area of water sources
	Salt damage caused by reduced flow rates downstream of the Seomjin river	Priority and Exclusion to the use of water sources, Water right
	Securing water for improving water quality in Yeongsan river	Priority and Exclusion to the use of water sources, Water right
	Securing water for water demand in Yeosu	Exclusion to the use of water sources, damage in the area of water sources Aversion to the construction of water sources
River facility	Renaturalization of the Four Major River	Removal of weirs for natural restoration Water intake disorder, such as agricultural water
	Removal of Singok submerged weir	Removal of weirs for natural restoration Water intake disorder, such as agricultural water
	Utilization of seawater desalination in Gijang, Busan	Anxiety about drinking water
	Opening of estuary bank in Nakdong river	Removal of river banks for natural restoration Water intake disorder, such as agricultural water
	Opening of estuary bank in Geum river	Removal of river banks for natural restoration Water intake disorder, such as agricultural water
Cost of Water use	Water use charge	Appropriateness and equity of levying water use charges
	Water prices between Chuncheon city and K-water	Contradictory interpretations of the water right
Dam operation management	Unification of hydropower dams management	Contradictory interpretations of the uniform effect of dam management

By the cause of water disputes, the most water disputes with eight cases involve attempts by local governments to secure new water sources instead of polluted water sources or to secure stable water sources due to increased water demand.

The second was caused by conflicting positions due to differences in values for river development and river conservation, which led to a long period of water disputes between the two groups.

There are other causes of water disputes such as reduction of income sources of residents in downstream areas due to water resources development, different interpretation of the water right, differential application of policy by region, and changes in the keynote of government policies.

Table 4-7. Causes of water disputes.

Category	Water Dispute	Main cause
Polluted water resource	Water intake plant relocation between Daegu city and Gumi city	Demand for safe water supply due to water pollution
	securing clean water in Ulsan	
	Securing clean water between Busan city and Gyeongsangnam-do Province	
	Utilization of seawater desalination in Gijang, Busan	
Water use	Water distribution of Yongdam dam	Increasing water demand
	Securing water for improving water quality in Yeongsan river	
	Securing water for water demand in Yeosu	
Imbalance of water resources	Securing water supply in Sokcho	Imbalance of water sources available between regions
Confrontation between	Renaturalization of the Four Major River	Contradictive positions on river development and natural conservation
	Removal of Singok submerged weir	

development and conservation	Opening of estuary bank in Nakdong river	The Contradictive position on development and natural conservation for water supply
	Opening of estuary bank in Geum river	
Damage of property	Salt damage caused by reduced flow rates downstream of the Seomjin river	Damage to property and income due to water resources development, etc.
Water right	Water prices between Chuncheon city and K-water	Different interpretation of the water right
Policy inconsistency	Water use charge	Differential application of policy by region
Policy change	Unification of hydropower dam management	Repulsion of the organization due to policy changes

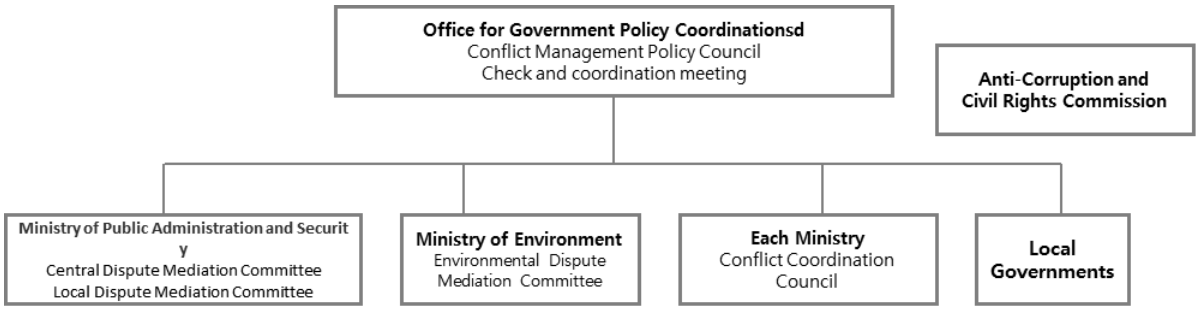
5. Measures to strengthen the dispute mediation role of the Water Commission

As various public conflicts, including water disputes, have occurred by region and institution, the government has made efforts to resolve public conflicts by creating various forms of dispute settlement organizations. In this chapter, I first examined the characteristics of existing dispute settlement organizations to resolve public conflicts, and under the enactment of the Framework Act on Water Management, I examined the role of the Water Commission newly assigned with the task of water dispute mediation and diagnosed the limitations of the dispute settlement role of the current Water Commission at the initial stage, and finally suggested ways to strengthen them.

5.1. Current status of water dispute settlement organizations

Before the Water Commission, water dispute settlement organization under the enactment of the Framework Act on Water Management, water disputes have been managed and coordinated by the Office for Government Policy Coordination, the Anti-Corruption and Civil Rights Commission, and the central government (Environmental Dispute Mediation Committee, etc.) within the scope of public conflicts.

Figure 5-1. Status of public conflict management organization



Source: (National Committee for Grand Integration, 2015)

5.1.1 Office for Government Policy Coordination

The Office for Government Policy Coordination manages matters concerning the overall management of public conflicts in the Planning and General Policy Bureau under the Office for Government Administration. The role of the Office for Government Policy Coordination focuses on the establishment and support of institutional foundations and the production and distribution of conflict management manuals in terms of policy coordination rather than direct intervention in conflict issues. Measures for conflict management and check include "conflict management policy council" and "Check and coordination meeting for pending issues." Through monitoring of public conflicts, coordination of inter-agency consultations on public conflicts, and year-end evaluation functions, the government is checking the status of conflict management by ministries and managing the implementation.

5.1.2 Anti-Corruption and Civil Rights Commission

The Anti-Corruption and Civil Rights Commission performs a function of conflict mediation based on 'civil compliant' related to the people's property rights and public goods. The Anti-Corruption and Civil Rights Commission begins to coordinate passively conflicts in

response to requests for the resolution of civil complaints rather than active intervention to resolve the conflict. As a result, it is difficult to intervene in conflicts between central government ministries and local governments. It is handled through 'recommendation of agreement' and 'coordination' in a conflict-coordinating manner, and much of the complaints are resolved through on-site coordination meetings.

5.1.3 Environmental Dispute Mediation Committee

The Environmental Dispute Mediation Committee established in the Ministry of Environment plays a role in coordinating disputes over environmental damage, such as air pollution, water pollution, soil pollution, etc. caused by development projects, business activities, etc. and disputes related to the installation and management of environmental facilities. Consensus recommendations, coordination, mediation, etc. can be made on the received mediation application, and disputes that are feared to cause serious damage to life and body due to environmental pollution or have a significant social ripple effect can be adjusted by authority.

The Environmental Dispute Mediation Committee, a type of administrative agency, can be a tool of ADR(Alternative Dispute Resolution) in that it can seek to resolve environmental disputes in a mutually desired way with low costs and simple procedures, and has the function of replacing court lawsuits. (Choi, 2017)

Depending on the scale of environmental disputes, the parties concerned, the dispute areas, etc., the central environmental dispute mediation committee and the local environmental dispute mediation committee are divided and carried out their respective duties.

5.1.4 Conflict Coordination Council

Under the Regulations for the Management of Public Conflict (Article 16), the heads of each central administrative ministry are required to organize and operate a conflict Coordination council for each conflict issue. It has the nature of an Alternative Dispute Resolution in that it plays a role in supporting and promoting resolution of conflicts between the parties. The Conflict Coordination Council can be comprised of the chairperson of the Council, relevant central administrative agencies and interested persons, and may, if necessary, have relevant organizations and experts attend the Council.

5.2. Status and role of the Water Commission

5.2.1 Legal basis and roles of the Water Commission

In June 18, the government enacted the Framework Act on Water Management to realize integrated water management based on the basin, and made the basis for the formation and operation of the Water Commission as an organization for the establishment of water management plans and the resolution of water disputes.

The Water Commissions are consisted of the Presidential Water Commission and Basin Water Commissions in 4 major rivers belonging to the Presidential Water Commission. Water disputes in the basin shall be basically handled by the Basin Water Commissions, and water disputes over two or more basin areas, water disputes under water management agreements, and water disputes that are deemed to have a significant impact on the public interest will be resolved by the Presidential Water Commission.

The Presidential Water Commission is composed of 30 to 50 members, including two chairmen, and private participation is strengthened by allowing non-public officials to become a majority of all members.

Water dispute resolution will be under the jurisdiction of the Water Dispute Resolution Subcommittee. In addition, the secretariat will be organized separately to support the operation and work of the Water Commission. Table 5-1 summarizes the composition and role of the Presidential and Basin Water Commission.

5.2.2 Procedure of water dispute mediation by the Water Commission

The water dispute mediation procedure shall begin when the water dispute interested party applies for resolution or the chairman of the Water Commission presents the dispute that causes serious damage to the public interest under chairman′s authority. Depending on the type of water dispute, interested parties, etc., the competent committee (the Presidential Water Commission or the Basin Water Commission) shall receive the water dispute and notify the other party or interested party of the purpose of water dispute mediation. The Commission may recommend an agreement prior to the mediation of water disputes.

The water dispute mediation shall be reviewed in advance by the Dispute Mediation Subcommission and presented to the water dispute parties after deliberation by the Water Commission. If the parties to the water dispute accept the results of the mediation, the mediation is terminated when the mediation protocol is signed. If either party files a lawsuit or fails to accept the mediation, the mediation shall be suspended or terminated.

Table 5-1. Composition and role of the Presidential and Basin Water management Commissions

Committee		National	Basin
constitution	Members	• Chairman (2 people) * Prime minister, * Presidential appointee (non-government) • Members - 30 ~ 50 people (more than one-half from non-government) * Government ministers * Chairmen of basin committee * Head executives of public organization * Academic / associations / etc.	• Chairman (2 people) * Minister of Environment * Presidential appointee (non-government) • Members - 30 ~ 50 people (more than one-half from non-government) * Governors of each province * Government officers * Executives of public organization * Academic / associations / citizen / etc.
	Structure	• Main Committee • Subdivision committee • Secretariat	• Main Committee • Subdivision committee • Support agency (directed by the Secretariat)
Functions	Water Plan	• Establishment and modification of national water plans (draft : Ministry of Environment) • Coincidence between national plan and sub plans • Decision of each basin boundary • Water movement between basins (appropriate distribution of water)	• Establishment and modification of basin water plans (draft : Chairman of basin committee) • Coincidence between related-plans • Water movement within basins (appropriate distribution of water)
	Dispute adjustment	• Disputes between central government and local governments • Disputes across more than two basins • Disputes requested by the chairman of basin committee • Disputes concerning the interpretation of the water management agreement	• Disputes within the basin

5.2.3 Restrictions and expected problems of Water Commission's water dispute mediation

Under the Framework Act on Water Management, Water Commissions were set up and functions were given to resolve water disputes, but since the system is still in its early settlement stage, it has limitations and restrictions on its role in water dispute mediation.

The first restriction is a matter of legal validity as a result of water dispute mediation. This is a problem that occurs not only in the mediation of water disputes under the Framework Act on Water Management but also in the mediation of disputes in a number of public conflict systems. If the interested party is not satisfied with the outcome of dispute mediation, the water dispute may remain unresolved or may move into a legal dispute. The core of the water dispute mediation function of the Water Commission will be how to get interested parties to acknowledge and accept the mediation results.

The second one is the limited role of the support organization and the way of activities of the Water Commission members. In-depth discussions and coordination are needed to resolve water management disputes. However, the members of the Water Commission are likely to perform their duties in parallel with their main duties before becoming members, rather than exclusively responsible for the Water Commission. In addition, it is difficult to focus on the Water Commission's own work because it is operating in the form of non-regular work rather than full-time work. The Framework Act on Water Management requires the establishment and operation of a secretariat under the commission to support the activities of its members, but in the case of the Basin Water Commission, it has limitations that it cannot actively support the activities of the Basin Water Commission because there is no legal basis for the establishment of the secretariat. The restriction of these operating conditions of the Water Commission makes it difficult for the Water Commission to discuss water disputes in depth, and it is highly likely that it will have difficulty in proposing alternatives to resolve water

disputes.

The last one is the expertise of the Water Commission. Since the Water Commission values the function of collecting opinions and consensus from various stakeholders on water management policies, people from all levels of society are participating other than the water sector. While this will have an advantage in reflecting diverse opinions in policies, it will inevitably have limitations in securing expertise. As seeing in the case of water disputes in 4.3, the resolution of water disputes requires a broad understanding of various policies, systems and technologies related to water, as well as preparing and negotiating alternatives that consider stakeholders' concerns. This is not easy even for highly trained coordinators, and considering the carrier of Water Commission members, it may not be easy to secure expertise in water management and ability to mediate disputes.

5.3 Measures to strengthen the dispute mediation role of the Water Commission

5.3.1 Arranging criteria for water dispute settlement

To coordinate water disputes, it is necessary to arrange criteria for mediation. The mediation criteria should ensure stability, publicity, effectiveness and justification.

First, in order to secure stability, the water dispute decision must conform to the overall policy of the nation and conform to the Constitution, relevant laws, criteria, etc. Also, it should not go against the policy direction of the water-related legal plan.

Second, in order to secure publicity, the infringement of interested parties in the dispute settlement process should be minimized, and the mediation should be determined to the extent acceptable to the parties. In addition, the benefits of dispute mediation should not be concentrated on a specific person, but should be given equal benefits to as many people as

possible. And the result should guarantee basic water service benefits for the people, basin and region.

Third, in order to secure efficiency, the decision of dispute settlement must be technically and financially feasible. The feasibility of implementing administrative procedures based on the outcome of the mediation shall be verified, and this decision shall ensure continuity and not cause subsequent disputes. In addition, sustainability should be ensured to secure consistency in water use and water management of other regions and future generations.

Finally, dispute mediation should be decided on the basis of scientific methods and objective data, and opportunities for participation should be provided to stakeholders. Thus, the legitimacy of water dispute mediation can be secured by verifying that there is no violation of the procedures under the statutes in the decision-making process.

5.3.2 Securing the operational efficiency of the Commission

The Water Commission is composed of 30 to 50 civilian members, making it difficult to proceed with efficient decision making. Therefore, it is necessary to establish subcommissions, subdivide the functions of the committees, and give certain subcommission dispute-coordination functions for securing expertise. In addition, the secretariat, the commission's supporting organization, should be expanded to the Basin Water Commissions to reinforce the correct understanding of the water problem and the ability to quickly handle the work.

On the other hand, in order to identify the root cause of the dispute and find solutions, the Commission should identify and understand the problem directly through on-site surveys, interviews with stakeholders, etc., and present a mediation plan that can solve the problem with reasonable judgment by listening to various opinions. This will greatly contribute to ensuring

fairness in the dispute settlement process of the Commission and the justification for the results of the mediation.

5.3.3 Establishing the status of the Water Commission

The government has established and operated various forms of commissions for the determination and implementation of desirable policies as society becomes more complex and specialized. Such commissions may be divided into the administrative commissions as central administrative agencies and the administrative commissions under central administrative agencies (deciding organization, advisory organization), etc. according to their legal nature and characteristics.

The Water Commission is not a commission operated under the jurisdiction of a particular central administrative agency. It shall cover the policies of various ministries related to water, establish water plans, and coordinate work or water disputes. Therefore, it is necessary to have a status worthy of the role of the Water Commission in consideration of the legal nature, characteristics, etc. of the current government commissions, and to prepare legal and institutional systems well. In addition, it is necessary to minimize overlap with other functions of resolving public conflicts, and to secure independence for the selection of members as the independence of the Water Commission is undermined by the change of government.

5.3.4 Improvement of water dispute mediation method

Along with the institutional system of the Water Commission, improvement of the methodology that can effectively mediate water disputes is needed. The existing post-conflict settlement methods should be expanded, and new forms of mediation should be introduced, if

necessary, to enhance mediation capabilities. This will increase the effectiveness of water dispute mediation and reduce the cost and time required for the mediation process. Also, in line with the rapidly changing society, we should be able to prepare for a new type of water dispute.

5.3.5 Establishment of social compromise ways for deliberation discussion

Most policy decisions and conflicts have different positions depending on interests and values. There have been attempts to achieve social compromise through the deliberation process, such as the Shin-Kori Nuclear Power Plant, but the deliberation process needs to be diversified depending on the characteristics of the case. The Water Commission needs to prepare various forms of deliberative discussion methodologies to prevent pre-conflict as well as post-conflict management.

6. Conclusion

As mankind has developed civilization around rivers, there has been constant conflict over water use. Water use conditions have improved due to the development of water resources, but there are still water disputes in many areas, and climate change is expected to further accelerate these water disputes. In Korea, there are numerous conflicts over securing clear water and using water not only for humans but also for nature and ecology. The Water Management Commissions set off on a crucial mission to resolve these water disputes.

However, the basic direction for water management is set, and the principles and criteria for water dispute resolution still need to be prepared and supplemented continuously. This study was initiated with the aim of contributing to the resolution of the national task on water as

public goods. Although the Enforcement Decree of the Framework Act on Water Management was started and the Water Commissions were formed and launched, it has yet to take its first step.

For the quick settlement of the water dispute mediation function of the Water Commission, this study investigated 17 cases of water disputes under way in Korea, and examined features such as dispute subjects, dispute issues and causes of disputes. The characteristics of the water dispute mediation organizations before the Water Commission and the limitation of the dispute mediation function of the Water Commission were analyzed, and measures to strengthen the dispute mediation function were presented.

The Water Committee should promptly come up with criteria for water dispute mediation that can ensure stability, publicity, efficiency and legitimacy. The committee, which is operated mainly by civilian members, should secure expertise by establishing subcommissions and strengthening the functions of the secretariat, and ensure fairness and justification of dispute mediation through the expansion of direct participation of members. In order to play the role of the Water Committee, it is necessary to have the status suitable for the role and legal and institutional systems, and to secure independence for the selection of commission members so that independence from regime change is not undermined. Efforts are needed to make the dispute mediation methodology more sophisticated and to reduce the cost and time of the mediation process in order for water dispute mediation to work effectively. Currently, the Water Commission's water dispute mediation function focuses on post-conflict management, so it is necessary to strengthen the function for prevention of conflicts by introducing various deliberative discussion systems.

The development of the Internet and social networking services has completely broken

down the barriers of public participation in public policies in the past. The transparency of public policy has increased, and the methods of people's participation have become very diverse. There are also various forms of conflict in this process. The government should manage disputes more efficiently to reduce social costs caused by disputes. In the water sector, the Water Commission was newly assigned a coordinating role in accordance with the Framework Act on Water Management. The proposal of this study is expected to contribute to the normal performance of the water dispute settlement function of the Water Commission.

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