

New Paradigm and its Policy Framework in Decision-making on Large Dams

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:: Abstract ::

This study discusses two canceled dam projects, Youngwol Dam in South Korea and Two Forks Dam in Colorado of the United States. Both of them illustrate how the new paradigm applies to regional water projects because they became victims of environmental opposition in the new paradigm. While the cases have no apparent close relationships and they occurred in different decades, they offer interesting comparisons. They were basically struggles between water development coalitions and environmental protection coalitions on regional water conflicts. The two proposed projects brought about fierce debates on large dam as they embraced a wide-range of environmental, social, and political issues rather than construction of dams themselves. Huge anti-dam oppositions scrapped them at the cost of nearly ten years for decision-makings and enormous financial resources for feasibility studies respectively. It identifies who the policy actors were, what the policy strategies were, and how the water policies evolved in both countries. The decision-makings on the two projects appeared at first glance to be made under formal institutional frameworks, but in actuality, they relied significantly on decisions of the two important political actors. The Korean society began to learn negotiation and cooperation approaches to solve the water conflict by establishing the Joint Task Force Team on Youngwol project in 1999. The team is recognized as a new conflict resolution method in South Korea because a diverse of stakeholder interests voluntarily participated in the decision-making process and discussed water issues directly. Even though the projects resulted in futile fruits in each country, they illustrate the images of the new paradigm that significantly affected in formulating regional water policies in South Korea and the United States.

Keywords: new paradigm, large dam, water policy, water conflict, policy change, policy process, Youngwol Dam, Two Forks Dam, South Korea, United States

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1. INTRODUCTION

Youngwol Dam of South Korea and Two Forks Dam in Colorado of the United States experienced very similar policy debate processes. The Ministry of Construction and Transportation (MOCT) of South Korea suggested the Youngwol project for dual purposes of water supply and flood control, and the then-president Kim Dae-Jung scrapped it. The Two Forks project was proposed by the Denver Water Board (DWB) to provide water supply in the Denver metropolitan area, and rejected by the United States Environmental Protection Agency (EPA) then-administrator William Reilly. Both cases were basically struggles

between a water development coalition and an environmental protection coalition in each country on regional water conflicts.

The two proposed projects brought about fierce debates on large dam because they embraced a wide-range of environmental, social, and political issues rather than construction of dams themselves. Huge anti-dam oppositions scrapped them at the cost of nearly ten years for decision-makings and enormous financial resources for feasibility studies respectively. Even though the projects resulted in futile fruits in South Korea and the United States, they illustrate the images of the new paradigm that significantly affected in formulating regional water policies in each country.

Table 1. Dam construction plans of Youngwol and Two Forks

	Youngwol Dam	Two Forks Dam
Location	South Han River (Kangwon, South Korea)	South Platte River (Colorado, USA)
Project agency	MOCT	Denver Water Board
Policy period	1990-2000	1979-1992
Major objective	Multi-purpose	Water supply
Proposed period	1998 - 2001	-
Proposed cost	\$753 million (as of 1997)	\$440 million (as of 1988)
Dam type	Concrete faced rockfill dam	Double curvature thin arch concrete dam
Dam height	98 m	187 m (615 feet)
Dam length	325 m	518 m (1,700 feet)
River bed altitude	291.5 m	1,835 m
Storage capacity	698 million m ³	1.4 km ³ (1.1 M acre-ft)
Surface area	21.9 km ²	29.5 km ²
Watershed area	2,267 km ²	² / ₃ of water comes from the East slope
Water supply	367.1 million m ³ /year	121 million m ³ /year
Generation	9,800 KW x 2 unit	-

The proposed site of Youngwol Dam is located at the Tong River, a tributary of the South Han River. The Tong River, flows about 51 km through rugged limestone terrain in a mountainous area of Kangwon Province (Hong 2000, 112), is known as an ecological treasure trove providing a home to 1,840 different animals and 956 plants¹⁾. It is also famous for breathtaking scenery with serpentine streams, pristine and serene atmosphere with virgin territory, many dolmens and historical remains with intangible cultural assets, and precious ecological resources with a wealth of rare flora and fauna including some endangered species and rare animals.

The location of the proposed Two Forks Dam is two miles below the confluence of the South Platte River and the North Fork River, along the Jefferson–Douglas county line, which is situated approximately 24 miles southwest of Denver and nearly 40 miles northwest of Colorado Springs of Colorado. It has been an attractive dam site since the 19th century for its massive amount of water storage capacity with a narrow valley and steep walls. Additionally it is easily accessible from the city of Denver. Those geographical characteristics have already contributed in constructing several impoundments in the south side of Denver. Two Forks Dam would have been the sixth dam if it succeeded (Sweetser 1994, 9; Luecke 1990, 42; EPA 1990, 2; COE 1989, 13; FWS 1987, 4).

2. STRUCTURE OF CONFLICT

The issue of Youngwol was initially a matter of interministerial conflict between MOCT and the Ministry of Environment (MOE). It was not a hot issue until the early 1999 when the Korean Federation for Environmental Movement (KFEM) began to involve in the conflict. The issue finally became an emblematic event (Hajer 1995, 265) until March 1999. As a result, the Commission on Protection of the Quality and Supply of Freshwater Resources (CPQSFR) as the water policy coordination body and political circles turned to the issue. CPQSFR formed the Joint Task Force Team (the team) to deal with the issue by looking back from a zero-based stage. The conflict appeared to be resolved by active and strong involvement of the team externally; however, the then–President played a decisive role to make the final decision in the policy process.

In the Two Forks case, the development coalition consisted of the Denver Water Board (DWB) and the Metropolitan Water Providers (MWP) as the main beneficiaries, and the eastern slope water conservancy districts, agricultural economy interests, developers, labor and industry leaders, real estate officials, chambers of commerce, ranches, suburban leaders. They significantly favored building the dam to continue growth of Denver and to become independent of water from the federal water agency,

1) "Tong river basin to be designated as National Conservation Area," *The Korea Times* (Seoul, South Korea), 7 August 2002.

Table 2. Conflict structure on large dam

Conflict item	Viewpoints of developers	Viewpoints of environmentalists
World view	Anthropocentrism	Biocentrism / Ecocentrism
Human beings	Human is superior to nature	Human is only part of nature
Value priority	Economy, material living standard	Ecological & environmental value
Understanding on dams	Water supply and flood control as basic governmental duties	Destruction of nature & ecosystem
Policy decision	By professional expertise	By extensive public involvement
Primary policy	Supply-side management	Demand-side management
role of dams	Substantial benefits to human	No benefits, long-term loss

On the other hand, the anti-dam protection coalition was led by the Environmental Caucus, an umbrella organization of fifteen groups including the Sierra Club and the Environmental Defense Fund. The protection coalition also included some groups of citizens' movements, western slope water conservancy districts, outdoor activity groups, and local residents to be relocated.

The policy debate on large dam was not a simple problem to build just one large dam in each country. The development coalition and the protection coalition shared fundamentally different paradigms regarding water resources. The basic norm of the water development coalition was anthropocentrism as the then-minister of MOCT commented in a television program that "even though the construction of the dam will affect the ecosystem somewhat, it is not more important than the life and property of people" (MOCT 1999). On the contrary, the viewpoint of environmentalists was focused on the deep ecology (Park and Yi 2001). The fundamentally different perspectives between proponents and opponents on large dam could not be

converged into a unified negotiation.

3. COMPARATIVE ANALYSIS

3.1 POLICY ACTORS

Many policy actors were involved in the Youngwol and Two Fork conflicts. Both cases saw fierce oppositions from the non-government stakeholder interests when the developers announced their intentions to build large dams. The non-government stakeholders consisted of environmentalists, local residents, citizen's groups, and etc.

In the Youngwol case, the conflict began initially from an interministerial dispute as usual. The outside opposition against the dam construction came from the local residents in the first and later the environmentalists represented by KFEM. The environmentalists intervened into the policy process in close cooperation with the local residents. With increased conflict between development and environment, the CPQSFR and political circles tried to mediate the conflict, but in vain. The Joint Task Force Team was finally formed to re-study the project and suggested the

project scrapping in its final report.

However, the policy decision-making to reject the Youngwol project was much influenced by political considerations. The then-President Kim Dae-Jung and the ruling party of South Korea significantly worried about the adverse impact on the upcoming general election in April 2000. The opposite party also concurred with the residents' view, insisting that the dam project should be scrapped.

In the Two Forks case, DWB initially announced a plan to build Two Forks reservoir in conjunction with the Foothills project²⁾. The Colorado Governor and MWP helped DWB in building the project from the beginning stage. The west slope interests and environmentalists actively participated later to oppose the project and protect adverse damages to the environment. Political circles tried to mediate as they did in the Foothills controversy, too.

The Army Corps of Engineers (COE) was involved in the Two Forks conflict as the leading agency of the System-wide

Environmental Impact Statement (SEIS) required by the Foothills Consent Decree³⁾, but it was not an easy task for COE because of quite different opinions between the regional government (DWB) and the federal government (EPA)⁴⁾. COE tried to postpone releasing the SEIS draft report beyond the expected deadline of August 1984. In response to COE's delay, DWB threatened COE to preempt SEIS by filing a Clean Water Act (CWA) 404 permit on Two Forks. COE finally agreed to combine the site-specific EIS into SEIS on the condition of not filing the permit at the time. However, DWB became impatient with the delay of the report and filed the permit two years before COE completed the final EIS (Luecke 1990, 44). DWB urged COE to include the project in the site-specific EIS as a better alternative to supply necessary water to the Denver metropolitan area.

During the CWA 404 permit, many staffs in the EPA Denver regional office opposed giving a permit for the project. However, the EPA's Denver regional administrator

2) The DWB proposed the Foothill project in 1970s which consisted of Strontia Springs Dam, Foothills Treatment Plant, and associated tunnels and distribution system to deliver water to the Denver metropolitan area. The proposal brought an intensive controversial debate and huge oppositions from environmental groups, western slope communities, and the hostile federal agencies EPA, BLM, FWS, and USFS (Sweetser 1994, 13; Ellison 1993, 104-7).

3) The Foothills conflict was settled down with an agreement, known as the Foothills Consent Decree, in February 1979. The Decree led DWB to conduct a water conservation plan and a system-wide water supply analysis before construction of the next major project. Later, the system-wide water analysis became the basis to carry out SEIS in determining site-specific and cumulative effects of the Two Fork project (Sweetser 1994, 13; COE 1989, 16, 64; Luecke 1990, 43).

4) EPA was the countervailing agency against DWB in the policy process because one of the EPA's roles is to protect the national environment against water development agencies. In the first, DWB managed to tide over the intergovernmental conflict by successfully persuading the regional EPA not to oppose the Two Forks project. However, the conflict became greater with involvement of the federal EPA.

James Scherer approved it by a tacit consent and recommended the federal EPA to issue the 404 permit. The dramatic reversion came from the federal EPA administrator William Reilly⁵⁾ because he ordered to veto it (Luecke 1990, 43). Thus, with COE's intensive EIS study and EPA's critical review on the project, the administrative decisions had been reversed twice in the same EPA system - the regional and the federal levels - according to personal sentiments.

3.2 POLICY STRATEGIES

The policy strategies to implement the water projects were quite different between DWB and MOCT. The DWB of Colorado first rallied friendly proponents to reserve rationales and resources. Then, DWB persuaded the west slope interests with carrots for western slope interests. Third, DWB started to contend against the hostile environmentalists and federal environmental agencies when DWB considered proper preparation was ready. During the conflict with them, DWB always justified the necessities to build the dam and sometimes made it a fait accompli under a tacit consent of the regional EPA administrator. The final step was trying to get approval from the federal EPA by pressing the then-President and the federal government.

The MOCT of South Korea implemented

completely different steps from DWB to build the dam. MOCT first tried to enforce the project without considering the outside opponents. When MOCT was challenged with strong opposition from the local residents and the environmentalists, MOCT hastened to persuade the local residents with some carrots and rallied friendly proponents to reserve rationale and resources; these were the first and second steps in the DWB case. With strong oppositions from the hostile environmental ministry MOE and environmentalists, MOCT tried to justify the necessities of building the dam and sometimes made it a fait accompli under a tacit consent of the Presidential Office.

As explained above, DWB and MOCT adopted completely different strategies in building the dams. The strategy of DWB was to rally friendly proponents → persuade West Slope → confront with opponents → justify and make a fait accompli → try to enforce the project. On the other hand, the strategy of MOCT was to try to enforce the project → confront with opponents → persuade the local residents → rally friendly proponents → justify and make a fait accompli.

Generally speaking, a water agency selects one or more strategies to adopt its favorable policies. The agency will select the most effective strategy based on its

5) No one expected this dramatic turning before William Reilly decided to order his Denver office to begin a veto process. Hinchman (2000, 203) said that both sides of environmentalists and water developers were astonished at the news from Washington. Leaders of Denver communities were also shocked at the unexpected event. Zaslowsky (2000, 208) also described William Reilly's decision as unthinkable.

policy-oriented learning⁶⁾. MOCT and DWB adopted quite different policy strategies because they had different past experiences despite of their similar belief systems⁷⁾. DWB adopted a soft strategy to build the dam because DWB had already experienced hostile and strong oppositions from the environmentalists during the Foothills controversy in the late 1970s⁸⁾. As DWB acquired a policy-oriented learning during the confrontation with outside opponents, it gave up implementing a hard strategy after the Foothills controversy.

On the other hand, the Korean MOCT adopted a hard strategy against local residents and the environmentalists as usual because they had not experienced such enormous outside opposition until the Youngwol conflict. Thus, MOCT initially prepared for the interministerial policy coordination with MOE without recognizing the fierce battle against outside opponents.

3.3 POLICY PROCESSES

According to newspaper articles of *Chosun Ilbo* and *Hankyoreh Sinmun*⁹⁾ for the Youngwol case and the *Denver Post*¹⁰⁾ for the Two Forks case, the characteristics of policy processes on the Two Forks and the Youngwol projects were nearly identical as they were composed of three stages from beginning to end of the conflicts.

The public interests had significantly fluctuated from time to time, but culminated in spring of 1999 on Youngwol and in summer of 1988 on Two Forks. Figure 1 illustrates how much the mass media had the least interest in the local conflict on Youngwol during the policy agenda setting period before 1997, how much they were indifferent to it even during EIS process and the period of increased local opposition. On the other hand, the Figure shows the least interest on the Two Forks project during the policy agenda setting period

6) Policy-oriented learning is "an ongoing process of search and adaptation motivated by the desire to realize core policy beliefs" (Sabatier and Jenkins-Smith 1993, 44).

7) Belief system is "a set of basic values, causal assumptions, and problem perceptions" (ibid. 25). It consists of three structural categories: deep (normative) core, near (policy) core, and secondary aspects (ibid. 30-1).

8) The Foothills controversy led DWB to recognize a paradigm shift from easy development period into a new era of public participation. Thereafter DWB would no longer construct water facilities without intervening or approval of a variety of antagonistic stakeholders.

9) *Chosun Ilbo* (The Chosun Daily News) and *Hankyoreh Sinmun* (The Hankyoreh News) are the representative news media in the contemporary South Korean society. The data set is selected from the news articles having the word "Youngwoldam" or "Tonggangdam" during the policy period (1990 - 2001) in the Korean Integrated News Database System (KINDS) at <http://www.kinds.or.kr>.

10) The *Denver Post* is one of the two major newspapers in the Denver metropolitan area. The data set is selected during the policy period from 1979 to 1990. The news articles having the word "Two Forks Dam" or "Two Forks Reservoir" are collected from The Denver Post Index (Bell & Howell Co. Indexing Center. 1979-1986; University Microfilms International 1987-1991). The Denver Post began to provide the news archive since 1993 in its homepage.

before 1985. The project began to attract public attention since the end of 1985 when DWB suggested two alternatives and filed a 404 permit on the project.

Both cases show that the official announcement of dam construction was followed by the period of indifference, the period of hot social issue, and the period of policy change. Those lines of policy making were combinations of a long period of stability and a short period of drastic change as argued by Baumgartner and Jones (1993). As seen in Figure 1, the policy eruptions, or explosion of conflict, of the Youngwol and the Two Forks conflicts occurred at least eight years later since the beginning of the agenda setting initiated by MOCT of South Korea and DWB of the United States. The apparent policy stability was considered to sustain over long periods of time by "the existing structure of political institutions and the definition of issues processed by

those institutions" (Baumgartner and Jones 1993, 15).

However, there was a noticeable difference between the two cases. The water policy actors on the Two Forks project had continuously discussed the effectiveness of the project throughout the whole conflict period. The policy process made an incremental progress from the time of Foothills compromise until that of the final policy decision-making. The Colorado Governor convened a roundtable to discuss Colorado water issues even before the DWB's announcement of building the project, The COE conducted the National Environmental Policy Act process to review the System-wide EIS, COE and EPA conducted the CWA process regarding the 404 permit, and finally EPA performed the veto process. Thus the policy process leading to the scrapping of Two Forks had advanced through a series of step by step procedures.

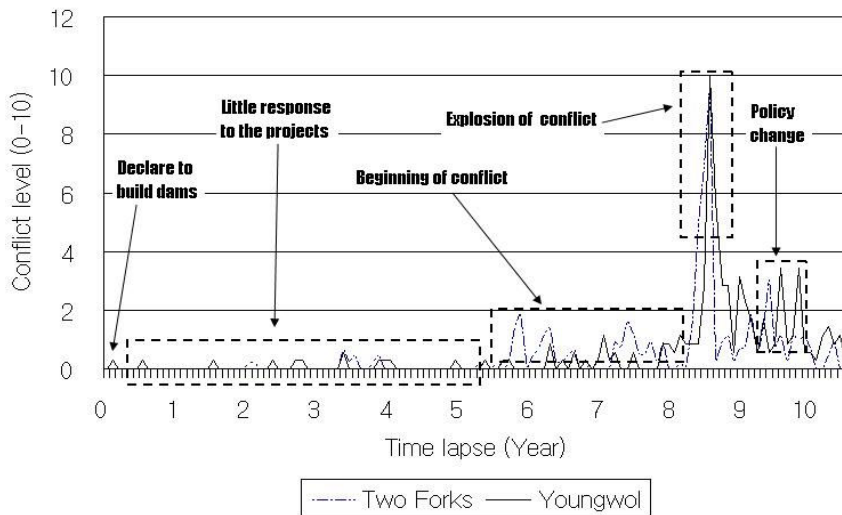


Figure 1. Conflict levels on the Youngwol and the Two Forks projects¹¹⁾

11) The two data sets are collected by monthly basis. The two maximum numbers of the newspaper articles are set at the highest conflict level 10.

On the other hand, the Youngwol case represented a non-procedural decision-making during the policy process. Each policy coalition stuck to its own position with one-sided allegations all the time. It was nearly impossible to discuss seriously about the issue because each coalition turned a deaf ear to the opposite coalition even during meetings of the Joint Task Force Team. Thus the policy process made non-incremental progress until the final policy decision-making.

It was the environmental groups, not MOE, who really pushed the President and MOCT to scrap the project. In the beginning of the conflict, MOE could not raise its own voice against MOCT because of MOCT's dominant political power over MOE¹²⁾. Thus MOE was careful of setting forth a sharply different opinion against the EIS study conducted by the Korea Water Resources Corporation (KOWACO). The environmental groups were different from MOE in dealing with MOCT. They always strongly blamed MOCT for its water development mind and led the policy process by mobilizing extensive human resources.

4. CONCLUSIONS

The Two Forks and the Youngwol projects had a number of similarities and differences. Each needed nearly ten years to reach final decision-making after announcement of dam construction and

enormous of financial resources for feasibility studies. Despite the intention of the water developer, that is DWB, to meet utilitarian needs, they were faced with widespread environmental opposition. The decision-making processes on the two projects appear at first glance to be made under formal institutional frameworks, but in actuality, they relied significantly on decisions of the two important political actors: the Korean President Kim Dae-Jung and the federal EPA administrator William Reilly of the United States.

The Youngwol case was actually a battle between the government (MOCT) and the civil society (mainly environmental groups) while the Two Forks case was between the regional water agency (DWB) and the federal government agency (EPA). The environmentalists were important but not leading policy actors in the Two Forks policy process. The two cases consisted of a long period of policy stability and a short period of drastic policy change respectively. But the Youngwol case saw dominant powerful rushes of environmental groups against the government, thus the actual decision was a non-procedural decision made by the presidential opinion regarding the upcoming general election. On the other hand, the Two Forks case was an incremental procedural decision made by step-by-step institutional process since the early 1980s.

This study discusses the outcomes of the new paradigm at work at the project level

12) MOE became confident of speaking its voice after the environmental groups actively involved in the conflict and MOCT once winced from the strong opposition from them. Therefore, MOE played an important, but not a decisive role in the conflict just like COE did in the Two Forks conflict.

in South Korea and the United States where two regional water projects, in different decades and different places, without apparent close relationships, were not completed. It also identifies who the policy actors were, what the policy strategies were, and how the water policies evolved in both countries. The two water conflicts also indicate similarities and differences between the Korean case and the American case.

The Korean society began to learn negotiation and cooperation approaches to solve the water conflict by establishing the Joint Task Force Team on Youngwol project in 1999. The team is recognized as a new conflict resolution method in South Korea because stakeholder interests voluntarily participated in decision-making process and discussed water issues directly.

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