

Critical Comments on the 4-River Project
By Professors' Organization for Movement against Grand Korean Canal

The Organization will hold a press conference on 10 June (Wed) at Seoul National University where it will give a critical review of the government's Master Plan on Saving the Four Big Rivers, which has been confirmed and declared recently without paying due consideration to the problems that have been raised.

The Organization has constantly urged via various experts' (both national and overseas) forums and field surveys that the government's project on "saving the four rivers" will most likely to fail because of the government's false judgment and rough-and-ready plans. If the government is to truly save the four rivers, the Organization has argued, that the government needs to first implement a joint-research program on the impact of the project together with experts and citizens' Organizations as co-partners.

However, in the Master Plan that the Ministry of Land and Maritime Affairs and relevant ministries have released on 8 June, the number of weirs for irrigation has increased from 4 to 16, the amount of dredging to be done has increased from 220 million cubic metres to 570 million cubic metres, the total estimated cost has increased from 14 trillion won to 22 trillion won. The project is becoming less like the one that will truly save the rivers.

A Review of the Master Plan for the Project Saving the Four Rivers

The government's task force executing the project has made an interim announcement on 27 April and made the final announcement for the confirmed Master Plan on 8 June. Upon reviewing the Plan, the following problems have been noted, and the government will need to provide clear answers to them.

1. In one month, the state-led project with a budget of 13.9 trillion won has changed into one that costs 22.2 trillion won

According to the interim report made on 27 April, the budget was estimated at 13.9 trillion won. However the budget has increased to 22.2 trillion won in the final report, which made a distinction between 'main projects' and 'directly related projects', to which 16.9 trillion won and 5.3 trillion won were allocated respectively. An increase of 8.3 trillion won (60%) has occurred in a month. Before we make any assessment on the feasibility of the project, therefore, we are inclined to doubt about the preparedness of the project. It is self-evident that such an unprepared state-led project has a high probability of failing. When that happens, an astronomical amount of money spent on the project, irreversible environmental damages, and the cost associated with social conflicts will go straight back to the tax payers. It is imperative to reach social consensus on how best to save the rivers by, firstly, releasing relevant

information to the public and, secondly, carry out a joint research program where stakeholders are able to participate in a meaningful way.

2. If sluice gates get installed at the eight weirs that are planned to be constructed in the Nakdong River, the whole project becomes a Nakdong Canal

We can consider the plan to install 16 weirs with an aim of maintaining certain depths in the river system as a 'sectional canal'. After this project is completed, because it can then be judged relatively economically viable to install sluice gates to the reservoirs, the project will likely to become a canal. Therefore, this project aimed at "saving the four rivers" is really the first phase of constructing a canal. In case of the Nakdong River, if 8 reservoirs are installed and sluice gates are constructed at the Nakdong estuary, 9 'sectional canals' are completed with an average depth of 6 metres. The total length of the sectional canals is predicted to be around 30 km (Gyeong-in canal, for example, is about 18 km long). The Gyeong-in canal project gives us an example where the government has achieved the ultimate objective step by step with a completely different project in the beginning. A drain was constructed to prevent floods and this led to a logic that a little more work would turn it into a Gyeong-in canal. When the "saving the Nakdong River" project gets completed, we will end up with a similar product, 9 sectional canals with only sluice gates away from a canal.

3. There is no rationale to secure 1 billion cubic meters of water from the Nakdong River.

According to the Long-term Master Plan for Water Resources established under the Rivers Act in 2006, Korea will have a surplus of 11 million cubic meters of water in the Nakdong Basin in 2011. Despite this, the government plans to develop 1 billion cubic meters of water in the Nakdong region by claiming that the region suffers from a "permanent deficit of water" and "the lack of environmental improvement water". The environmental improvement water refers to the water that is put into rivers to maintain the functions of riverine ecosystems. In case of the Nakdong River, the demand for utility water in 2011 is estimated at 9.7 billion cubic meters, the environmental improvement water is calculated to be 2.2 billion tonnes which is around 23% of the utility water. In other words, we get a surplus 11 million cubic meters of water. Therefore, the government's argument that we will have a big potable water crisis in 2011 is unfounded, and if we lack any water it will be the environmental improvement water. In the worst case scenario, we have 2.2 billion cubic meters of potable water already secured. Furthermore, the Long-term Master Plan for Water Resources states that we will only experience water shortage of 140 million cubic meters in 2016. The government's plan is to secure water by installing weirs along the mainstream and it is based on a false claim that the Nakdong River lacks water. Unless further mitigation actions are taken up, the water quality of water secured by constructing weirs will be very poor. Unfortunately, there is not a single case in the world where weirs are installed along the mainstream of a river to slow water flow in an

attempt to secure more water. It is therefore imperative to review such a plan that is yet to be proven effective.

4. There is no rational to dredge 440 million cubic meters from the Nakdong River

In case of the Nakdong River, the amount of dredging to be done amounts to 440 million cubic metres. This equates to dredging the riverbed along 323 km with a width of 135 m and a depth of 10 m. In such a case, the riverine ecosystems will be destroyed to an extent that is irreversible, and a serious lack of potable water will cause a crisis due to the pollution caused by dredging during the two years of construction work. Taking into account of the fact that the rate of sediment yield at the Andong Dam is 109 m³/km²/yr as reported in the 2007 survey, its sediment yield is 23,817 km² x 15 years = 39 million m³. Therefore, 440 million cubic meters of sediment is equal to the amount of sand discharged from the Nakdong basin during 150 years. It is practically impossible to dredge 440 million cubic meters of sand within two years even if all the dredging equipments in Korea are mobilised. Furthermore, it is difficult to secure a yard to stock up the dredged sand. Also it will be necessary to review safety issues related to bridges from such mass-scale dredging operations. The government will also give a clear explanation on why the cost of dredging amounts to 4 trillion won while the government has argued previously, during the Korean peninsula canal controversy, that it can generate an income of 8 trillion won from dredging 800 million tonnes of sand. Moreover, the government has stated that in the case of the Nakdong River, further 440 millions cubic meters need to be dredged for the purposes of flood prevention and water resources security as “the effectiveness of preventing floods across the Nakdong River has been limited because of riverbeds have been lowered sectionally because of the dredging of 200 million cubic meters of sand that has so far been done.” However, the Board of Audit and Inspection has assessed and reported in 2007 that most of the Nakdong river beds have been lowered due to dredging activities hence increasing the effectiveness of flood control. It has therefore been suggested to rewrite the Master Plan for the Nakdong River Basin, which is indeed in progress. It is in violation of the Rivers Act to draft a plan for flood control in the Nakdong basin without the plan of a higher hierarchy, namely the Master Plan for the Nakdong River Basin, not being established yet. Furthermore, the claim that more water resources can be secured at the same time as preventing floods by installing weirs is inherently contradictory in itself. In other words, it is impossible to secure water effectively if water is drained from weirs to prevent floods, while the risk of flooding will be increased if more water is stored in weirs to secure water.

The government’s perception towards sand as subject to dredging and oak leaves as useless weeds will eventually kill the traditional culture around Korean rivers. This project which involves interfering with water flows by constructing weirs, dredging river beds, and reducing riverine areas where water weeds can naturally grow cannot possibly be a project that “saves the four rivers where culture flows” as the government claims, but will be one that cut off and isolating cultures. The Ministry of Culture’s policy towards this

project must acknowledge the hidden possibility of becoming a project that “kills rivers,” and pursue a policy which will guarantee an outcome where “culture flows along the rivers”.

5. Investing in tributaries must be given a priority than in the mainstream for flood control and water quality improvement

The government claims that “if tributaries are worked on first without the mainstream being repaired, the risk of flooding will be increased.” As of 2007, over 97% of rivers have been worked on and tributaries remain at a rate of 84%. It is inefficient and ineffective to invest on the mainstream for the purpose of controlling flood if we take into account that most of damage from flooding occur around tributaries not the mainstream. Furthermore, the claim that working on tributaries first will increase the risk of flooding of the mainstream is ungrounded. The contrary is true. Working on tributaries to reduce the possibility of flooding will not only reduce the chance of flooding in tributaries but in the mainstream as well. In principle, an integrated management approach by integrating both tributaries and the mainstream towards flood control is the right approach to take. Nonetheless, a separate plan will be established for tributaries up until 2010.

6. Flood control policy paradigm has evolved from embankment works and dam construction to creating wetlands and flood plain restoration

The government’s logic to implement a dredging and weir approach towards flood control is inappropriate. Dredging is already a common practice, and the government is saying that it will control water depth through forecast on flooding. Therefore, dredging cannot be a new paradigm, and weirs can actually increase the risk of flooding if managed incorrectly. The new paradigm of flood control as adopted by Europe, the US, and Japan is based on securing enough riverine spaces. In other words, this “new approach” involves restoring flood plains, and maintaining them as natural wetlands which provide biodiversity, and utilising it as a slow-water zone in case a big flood occurs. Such a practice reduces the risk of flooding and refilling ground water through wetlands, thereby recreating a healthy water cycling system. In the case of the Nakdong River, 90% of wetlands have been developed into crop lands, it has good conditions for securing reservoirs around the river and restoring flood plains.

7. It is necessary to go through an open and practical consultative process.

The Master Plan for Saving the Four Rivers was announced on 8 June and the work will begin in two phases from the second half of 2009 (October/November) and the first half of 2010 (February/March). No information on how the government is drafting the Plan is publicly available. The Korea Institute of Construction Technology (KICT) which has drafted the Plan is the state research institute which executed the canal plan. Despite these facts, the government has announced that it has held open discussions at the local level, public hearings, and expert consultative forums in the past

one month. It is very likely that the project with an estimated budget of 22.2 trillion won which has gone through only a month-long consultation process will fail. Furthermore, the consultation and public hearings have taken place for the sake of formality. It is particularly inappropriate that the government has conveniently ignored the opinions of citizens' Organizations which oppose the Plan. It is imperative to prepare a master plan in a forum that involves all the stakeholders.

8. A proper environmental impact assessment needs to be done.

The Master Plan states that the construction work will commence in the second half of 2009. Given the short time available from now and then, a variety of assessments which are required for such a major project such as a prior environmental review and a cultural heritage survey will be done for the formality's sake. In particular, a review of man-made structures to be installed and their impact on the riverine ecosystems will need to be carefully carried out. Despite this, the government's intention to conduct a prior environmental review for 4 to 5 months is reflecting its commitment towards executing the project without paying due consideration and effort in the review. This also means that the government will start the construction work before the Master Plan for Flood Control in the Nakdong River Basin being established, and this is a violation of the Framework Act on Environmental Policy which obliges the state to conduct a prior environmental review with respect to a river maintenance plan. However, the Ministry of Environment states that it will execute the four river project in an environmentally friendly manner and provide support.

9. There is no rational reason to expand 96 reservoirs for agricultural irrigation to secure 240 million cubic meters of water.

The government has put forward a plan to expand 96 reservoirs for agricultural irrigation among some 18,000 of them, in an attempt to secure additional 240 million cubic meters of water. However, according to the 10-year Plan being drafted by the Ministry of Agriculture, there has not been a complete analysis on the demand and supply of water for agricultural irrigation. This plan lays out construction plans for reservoirs for agricultural irrigation without basing the plans on an analysis on water supply and demand. Therefore, the plan to expand 96 reservoirs is ungrounded. Further, if we take into account the fact that the demand for irrigation water for agriculture is concentrated during certain months of the year whereas the general water usage by households remains constant throughout the year, the analysis of demand and supply of water used for agriculture needs to be done separately from the general water usage. However, the government has not so far differentiated the two usages so it is currently impossible to tell if agricultural water is in short supply or not. Taking into account the reported fact that the regions which lack water supply for agriculture are the Yeongsan and Seomjin River Basins, according to the Long-term Master Plan for Water Resources (2006), the efforts to develop agricultural water should be concentrated on those regions.

10. Korea will not be known as a country which has managed water resources effectively but instead it is likely to face an international shame

The government is expecting other gains from the Project on saving the four rivers such as advancing water resource management technology, hence supporting Korean companies to go overseas with such expertise. However, with the techniques to cause adverse and irreversible impact on ecosystems from mass-scale dredging, securing dirty water by weirs, and implement the project through closed decision-making processes will result in an international shame and damage international reputation of the country. In the international river restoration seminar where five countries have participated and held on 27 May at the National Assembly of South Korea, Professor Hester from the University of California, Berkeley, has called such technology a bad science. He stated that such a bad science was subject to social controversy in the US as well, but such a bad science has naturally disappeared after the society has secured transparency. The project on saving the four rivers will ultimately cause the society to fall sick if it is planned and executed in a non-transparent manner. It is imperative to implement the project in a more transparent manner so that 'bad science' cannot gain a foothold on Korean society.

The Future Action Plans of the Organization of South Korean Academics Opposing the Canal

We, the Professors' Organization for Movement against Grand Korean Canal, will implement the following three action plans in response to the government's actions.

Firstly, we will initiate and maintain a debate with the members of the National Assembly on problems that are associated with the Project on saving the four rivers, such as wasteful budget and legal procedures.

We will launch an investigation on cases of wasteful spending of taxes on state-led projects together with national assembly members at the Special Committee on Budget and Accounts and the Strategy and Finance Committee. We are committed to institutionalise measures to watch over the state-led projects which incur a large amount spending. A policy discussion forum will be held soon.

The Environmental Impact Assessment Bill that has been submitted by the government last March is committed to erase the necessary procedures for large development projects to go through. This is a big mistake that we have learnt from the mistakes of other earlier developed countries. This must be prevented.

Some research institutions are acknowledging the seriousness of the implications that the Bill will bring about, a joint policy discussion forum is

scheduled to take place by those institutions together with the Environment and Labour Committee of the National Assembly in June.

Secondly, the most urgent problem is that with problem of potable water from the Nakdong River. We will provide solutions after visiting the field and talking with local residents.

The “Research Unit for Living Rivers” and citizens’ organizations will conduct a survey on the Nakdong River and uncover how the drinking water problem will worsen if the government’s project does get executed.

There are some heads of the local governments who are supportive of the government’s plan without knowing what it really entails, we will hold policy discussion forums at those localities for debate. We will have debates with those candidates running for the local election next year in May.

Thirdly, as the most important and fundamental problem, we will urge the government to change the nature of the project which is currently a phase-one project for a canal to the one that truly saves ecological characters of the river basins.

The overseas experts from the UK, Germany, the US, Japan, etc who have participated in the international symposium on riverine ecosystems restoration (27 May 2009) have unanimously stated that the four river project is an environmentally devastating project. It will not be of any help for flood prevention, and the opposite is quite true, that it will increase the risk and the scale of damage. Among them were internationally renowned scholars from the Berkeley and the University of Tokyo.

They argued that installing dams (weirs) and dredging river beds along the mainstream will inevitably result in dead rivers. An alternative that they have put forward is ecological restoration of the catchment and tributaries. Such measures are less costly and long-term, and introduce more employment opportunities.

They are committed to forming an international alliance to correct the Korean government on this particular issue. We will provide scientific and policy data necessary for the international alliance and provide an alternative to the project, namely the ecological restoration of river basins and tributaries, and correct the government’s objective on this matter.

Thank you very much.

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The Professors’ Organization for Movement against Grand Korean Canal