Environmental Audit on Water Quality Improvement Projects
: *Four Major rivers in Korea*

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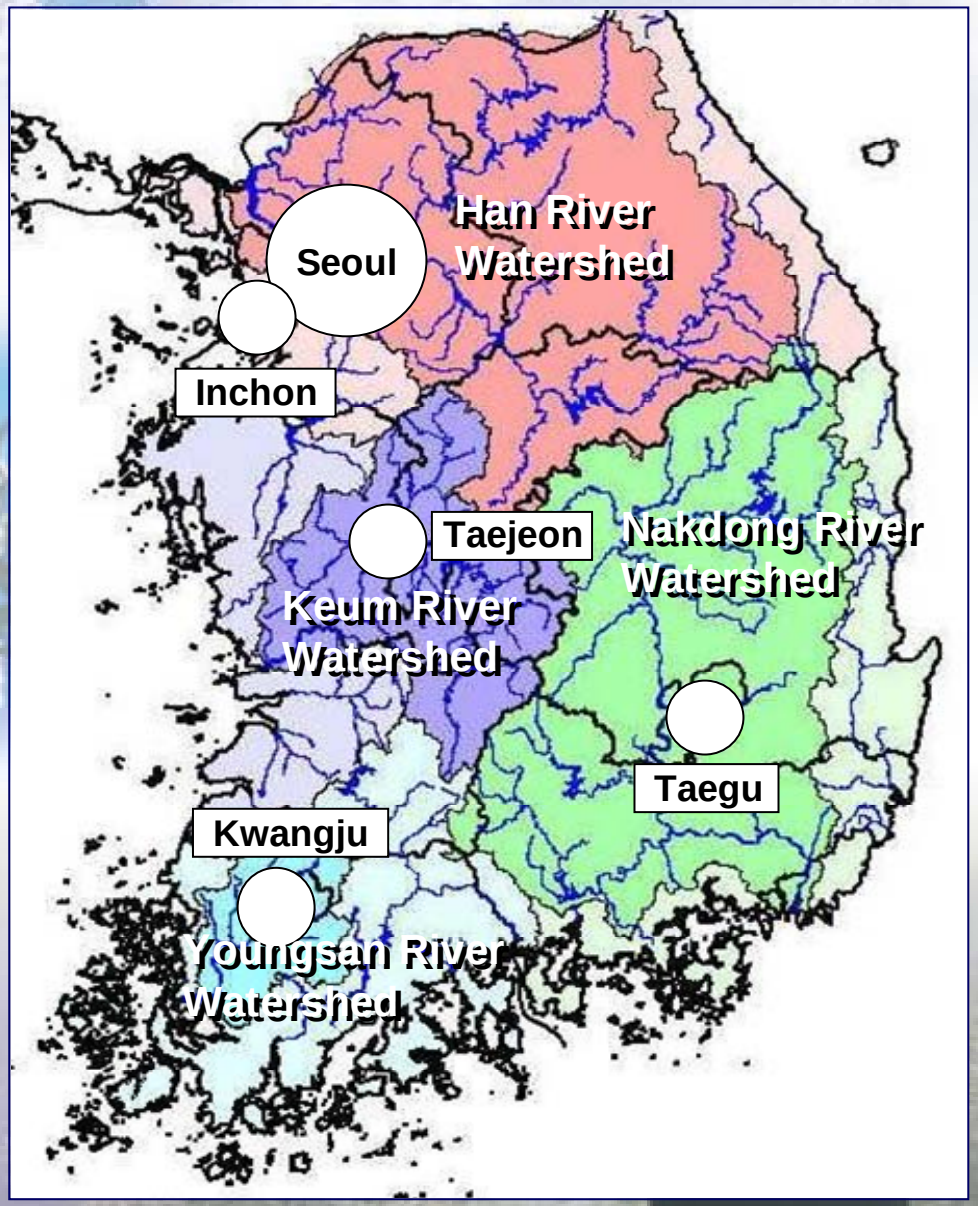
Area & Population

Area

- Total : 221,000㎢
- South Korea : 99,000㎢
  - Han River Watershed : 34,041
  - Nakdong River Watershed : 23,817
  - Geum River Watershed : 9,810
  - Youngsan River Watershed: 3,429

Population

- 48 million (south)
- Metropolitan Area : 21 million (46% of total population)
- Density : 478 capita/㎢



Legal System for Water Quality Management

Watershed Management

- Comprehensive Water Management Plan (1996, 15billion $)
- Special measures for the four major rivers

→ Water Quality Management Policies :

Designation of River Basin Area
Regulation of Total Maximum Daily Loads
Construction of wastewater treatment facility
Installation buffer zone

→ Financial sources :

Water-use Charge System,
Establishment of the River Basin Management Fund

→ Organizations :

Basin Management Committee and Regional River-Basin Environment Offices

Objects of the Audit

- To find out the reasons why the water Qualities of the rivers had not been Improved as much as planned and to suggest the possible solution to them

Audit Focus

- Investment policy for water quality management projects
- Reasonableness of relevant laws and regulations
- Regulation of contamination of sources
- Construction and operation of wastewater treatment facilities
- Processing of livestock-sewage

Performance Audit Methodology

- Reviewing agreements and regulations
- Interviewing
- Field inspection
- Data analysis
- Participation of environmental experts
  - Doctor of environmental engineering (PhD)
  - Professional engineer from MOE and EMC
  - Special advisory group

Audit Findings and Recommendation

Finding 1. Investment management

- Local self-government were supported to spend 11.1 billion $ in total for the wastewater treatment facilities.
  - Some local self-governments turned out not to invest charge on the pretext of the lack of funds, resulting that only 8.2 billion $ had been invested.

- 9.9% of the spending was used for other purpose

Recommendations

- The MOE adopt the post examination and feedback system that MOE let local self-governments regularly report their charge and the progress of the projects

Audit Findings and Recommendation

Finding 2. Designation of the TWSCZ

- In the TWSCZ, any behaviors that could be a potential threat to preserving clean water are strictly prohibited.
  - The Tap Water Act provided only where to set the TWSCZ without stipulating when to designate it.

  - As a result, out of 229 tap water intake facilities nation wide, the surrounding areas of 32 tap water intake facilities were not yet declared as the TWSCZ although they had been in operation for many years.

Recommendations

- The MOE revise the related regulations to specify when to designate the TWSCZ.

Audit Findings and Recommendation

Finding 3. Regulation of polluters in TWSCZ

- In the TWSCZ, it was not allowed to newly locate a restaurant or an accommodation.
  - It was possible to change an existing building into a restaurant or an accommodation

Recommendations

- The MOE take necessary to ban the aforementioned change and land occupation.

Audit Findings and Recommendation

Finding 4. Construction & operation of wastewater treatment facilities

- Inefficient execution of the construction budget
  - Some local self-governments were pursuing to construct excessively over-size wastewater treatment facility
  - Other local self-governments did not install any wastewater treatment facilities in 20 riverside-towns due to the lack of budget even recognizing the need

Recommendations

- Relevant local self-governments adjust the size of the wastewater treatment facilities.

Audit Findings and Recommendation

Finding 5. Livestock wastewater treatment

- The Korea government had been constructing public livestock wastewater treatment facilities.
  - The operation rate of the 20 facilities were turned out to below 50%

Recommendations

- The MOE gradually shift the policy for the livestock wastewater from processing through the public treatment facility to recycling it as organic fertilizer.

Follow-ups to the BAI's Recommendations

The MOE prepared and carried out the follow-up measures below

- MOE adopted post-examination and feedback system for managing investment of water quality improvement
- MOE would rectify the unreasonable provisions on TWSCZ designation and polluter regulation in the TWSCZ.
- MOE would rearrange the size and priority of wastewater treatment facilities
- MOE would let professional researchers elaborate long/short term plans and would re-examine the validity of the ongoing construction by on-site inspection

Epilogue

- The key principles of water quality management

  - Locate less polluters
  - Produce less wastewater
  - wastewater treatment before discharge

- Sewer system is often neglected even though it is as important as end processing facilities.

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