



2nd Targeted Workshop for Asia and the Pacific

*Transforming Good Practices from
Demonstration
Projects into Scaled-Up
Investments and Financing*

The Experiences of Masan Bay in Integrated River Basin and Bay Management

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IW: LEARN Regional
Workshop
Manila, The Philippines
10 – 12 March 2014



Population : 1.1million

Area : 747km²

Annual Revenue : 2.4 trillion won

Average annual temperature
: 14.3°C



Average annual precipitation
: 1,624.5mm

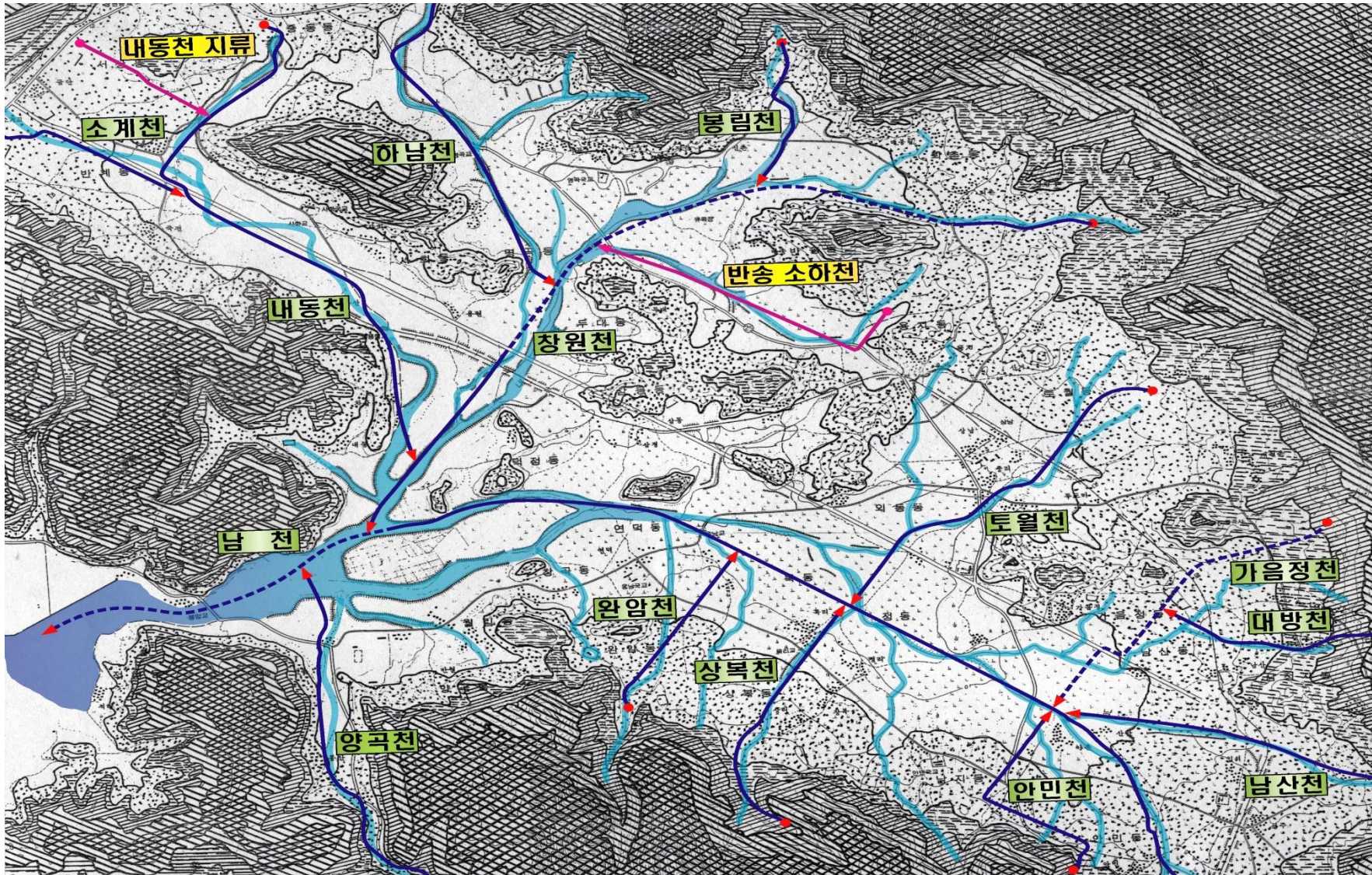
Location : South-eastern tip of
Korea Peninsula

Satellite Map of Coastal City, Changwon



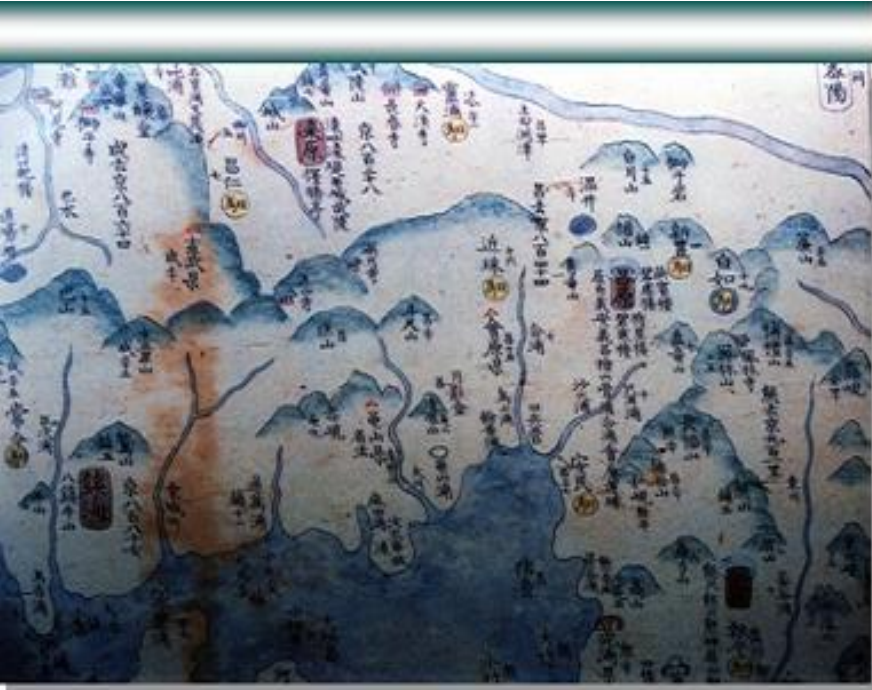
1. Changes of river flow by urbanization

	Before 1978
	Present

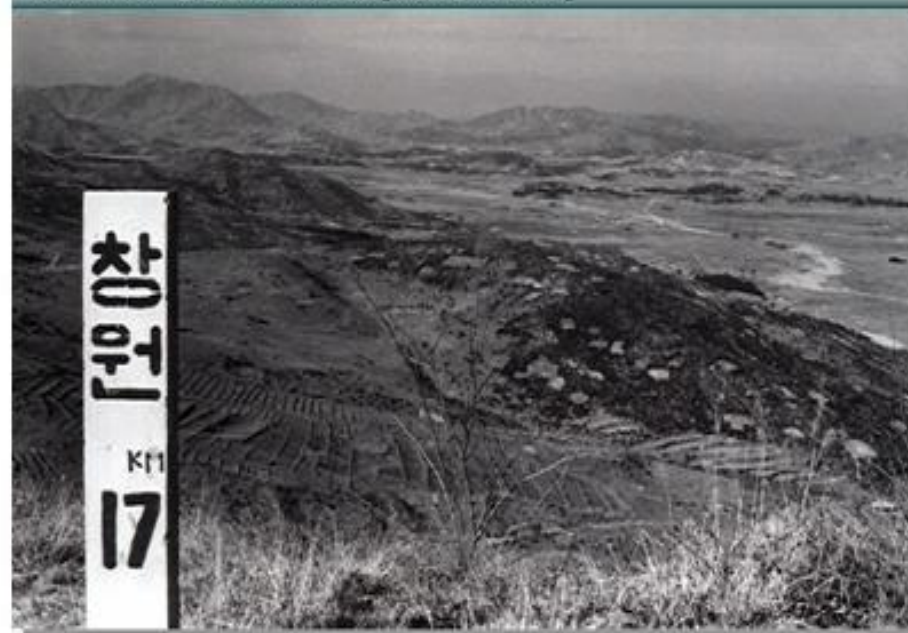


2. National Model Project of Eco-River in Changwon





안민고기 정상(1969.12) [남천, 남산천]



중성정기 공장부지(1974.9) [남천 제방공사]



읍모산 정상에서 바라본 성주등 일대(2000.8) [남천, 남산천]

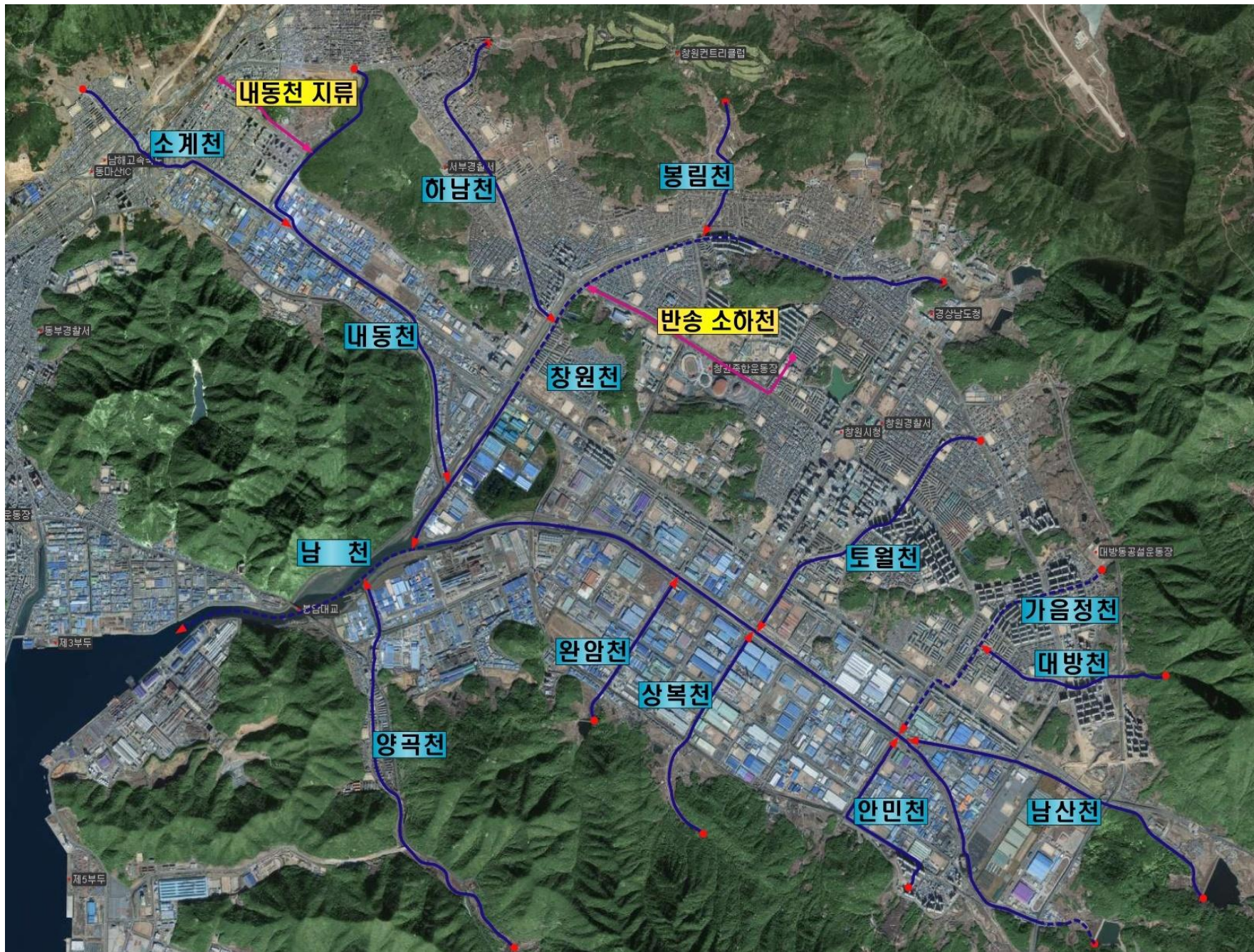


상리 뒯산에서 창원의 전경(1973. 11) [완암천]



안민 뒯산에서 창원의 전경(2001. 1)





3. Eco planning of Changwon river

Brief description of project

Period : **2007 ~ 2014, 98% completed**

Scale: **L=7.82km, W=30~92m**

Budget: \$29 million

(National fund 62%, Provincial 11%, Changwon 26%)



Eco-river Community Council

22 ECC members composed of
5 citizen representatives
4 professors
5 NGO members
3 members from City Assembly
1 general director ,
3 directors, and 1 secretariat from city
government
**2 co-chairs and 2 secretariats elected
among 22 memebbers**



Eco-river Community Council meeting



Before



After



Before



After





창원시 생태하천복원사업 위치도



4. Eco-River Planning for Nam river during 2007 ~ 2014

Operation period: 2007 ~ 2014

L=9.77km, B=40~100m

Investment Budget :

\$33 million (National:62%
Provincial:11%, Changwon:26%)

Eco-River Process in Nam
river (96% completed)

in 2014

- Installing 3 Water front facilities,
- Planting 50,000 herbs
- setting 30 guide boards

Nam river in 2007



Blue print after recovery



Before



After





Before



After



Before



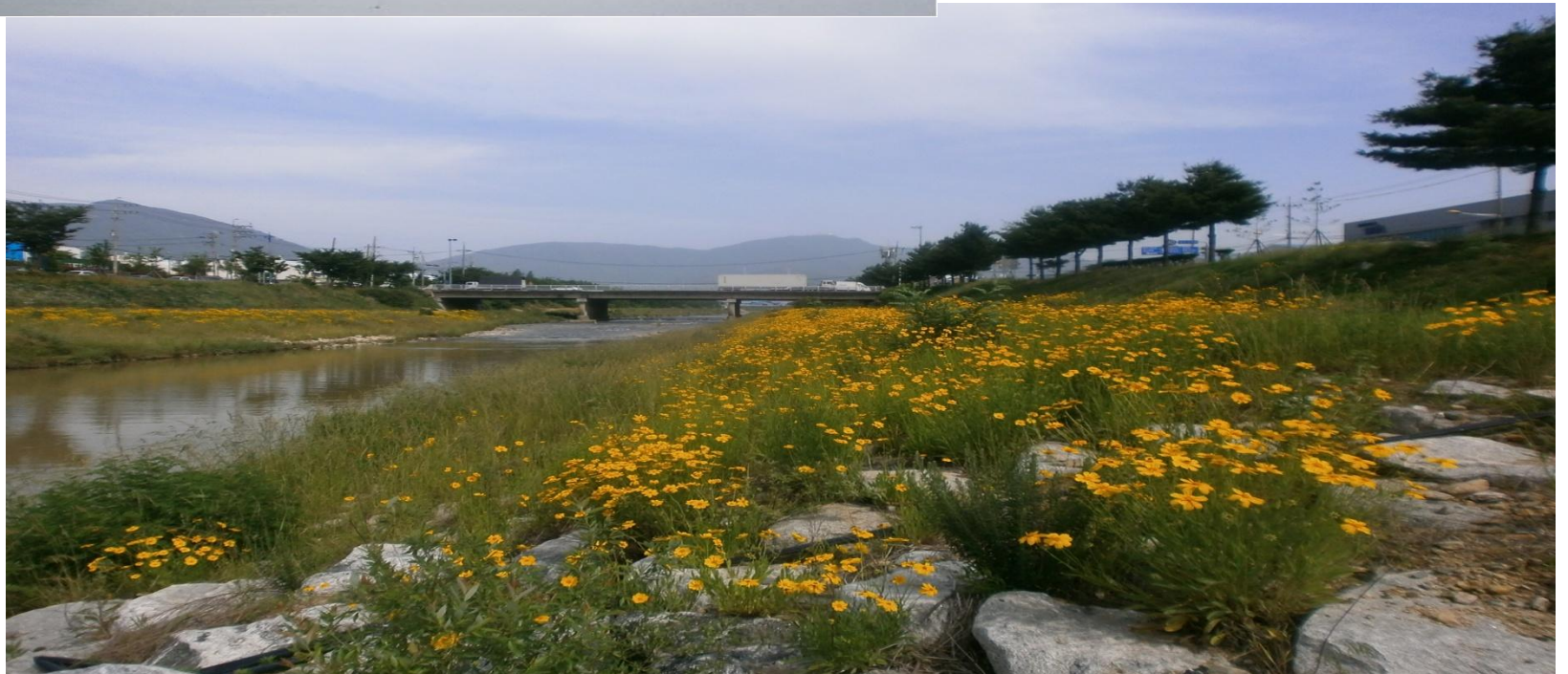
After



Before



After





Otter Explore Team by
Changwon Environment
Movement Federation
March 23, 2013



There was a movement to protect the Bongam tidal flat together with Community Advisory Council for Masan Bay. An Eco-education Center was created in the Bongam tidal flat, and the Total Pollution Load Management (TPLM) was established for the first time in the nation in order to educate the local community the importance of the environment and to preserve the ecological condition of Masan Bay and Bongam tidal flat.

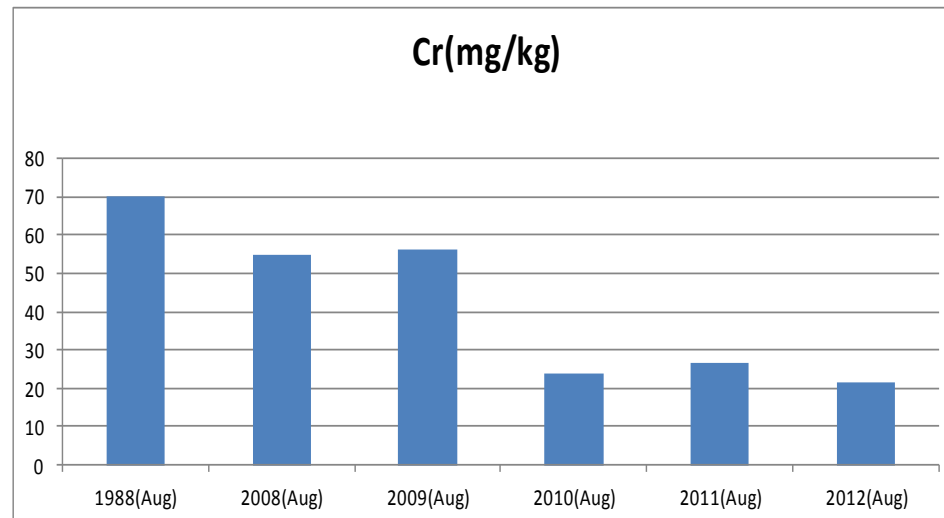
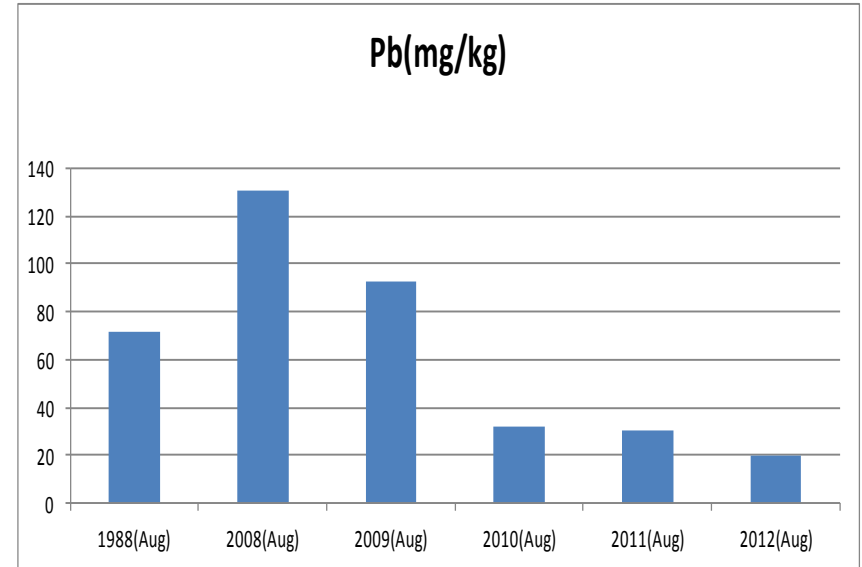
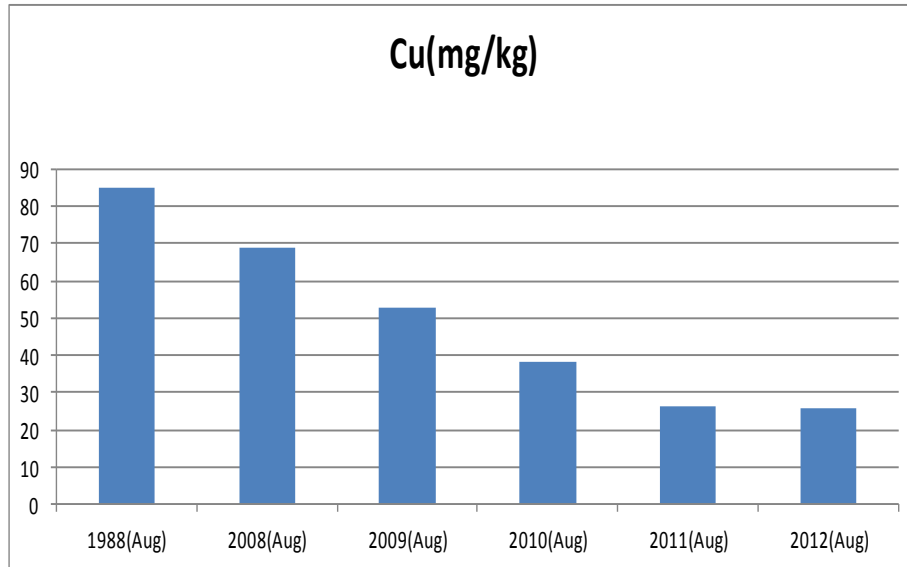


Education and Public Awareness

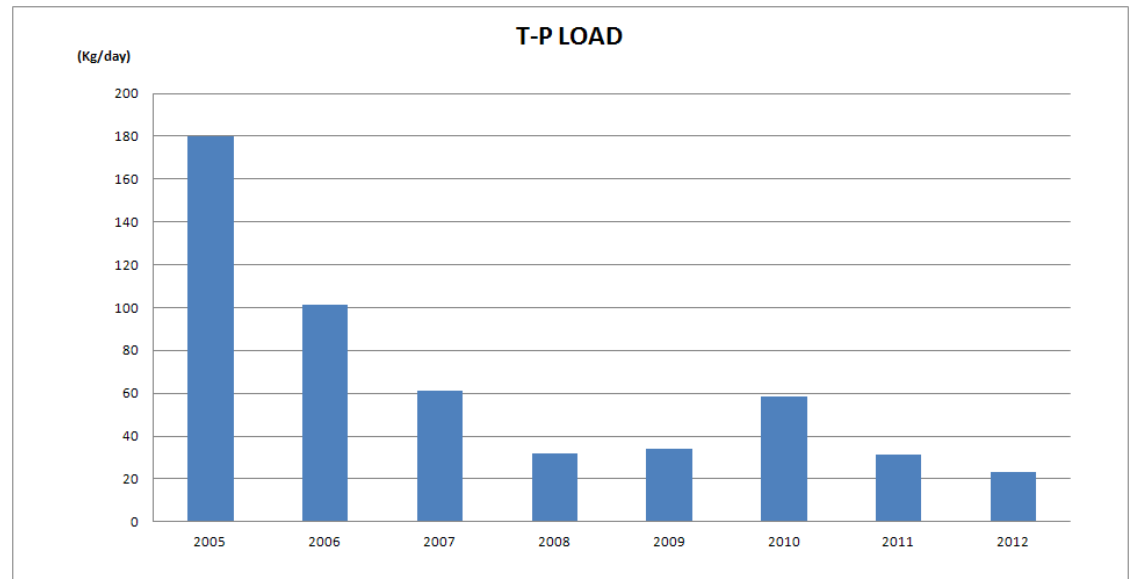
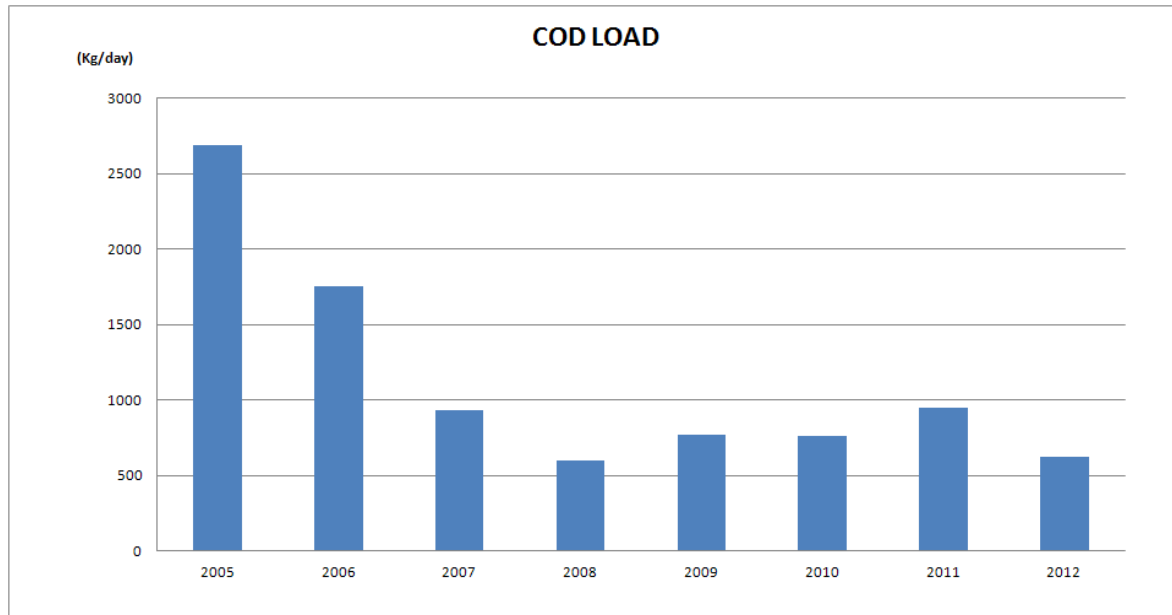
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The contamination level of sediments in the tidal flat was changed from heavily polluted to non polluted level by the comparison of data between 1988 and 2012.



The loadings of COD and T-P to Bongam tidal flat from 2005 to 2012





May 16, 2013
before sewer line
improved



June 27, 2013
flow rate decreased
and clean water flowing

Ecosystem recovery of Masan Bay by ICM from river to bay



Conclusion (Optimal investment for pleasant inconvenience)

The project trend in a rapid economic growth country is not easily changed from the pattern of large construction project like bay reclamation, roads, apartment buildings, industrial and commercial complexes, and eco-river restoration

The most important lesson we have learned is that we should put life values ahead of human convenience to have agreements and get our priority right. Our lifestyle would be changed with being confident to solve numerous important problems to lead the way to a sustainable world – an investment of another kind (optimal amount of investment with involvement of stakeholders for an “integral project”).



Questions?

How to make profound investments in building ecologically healthy rivers and bays in climate change era?

How to approach to have optimal investment in right place and in right time?