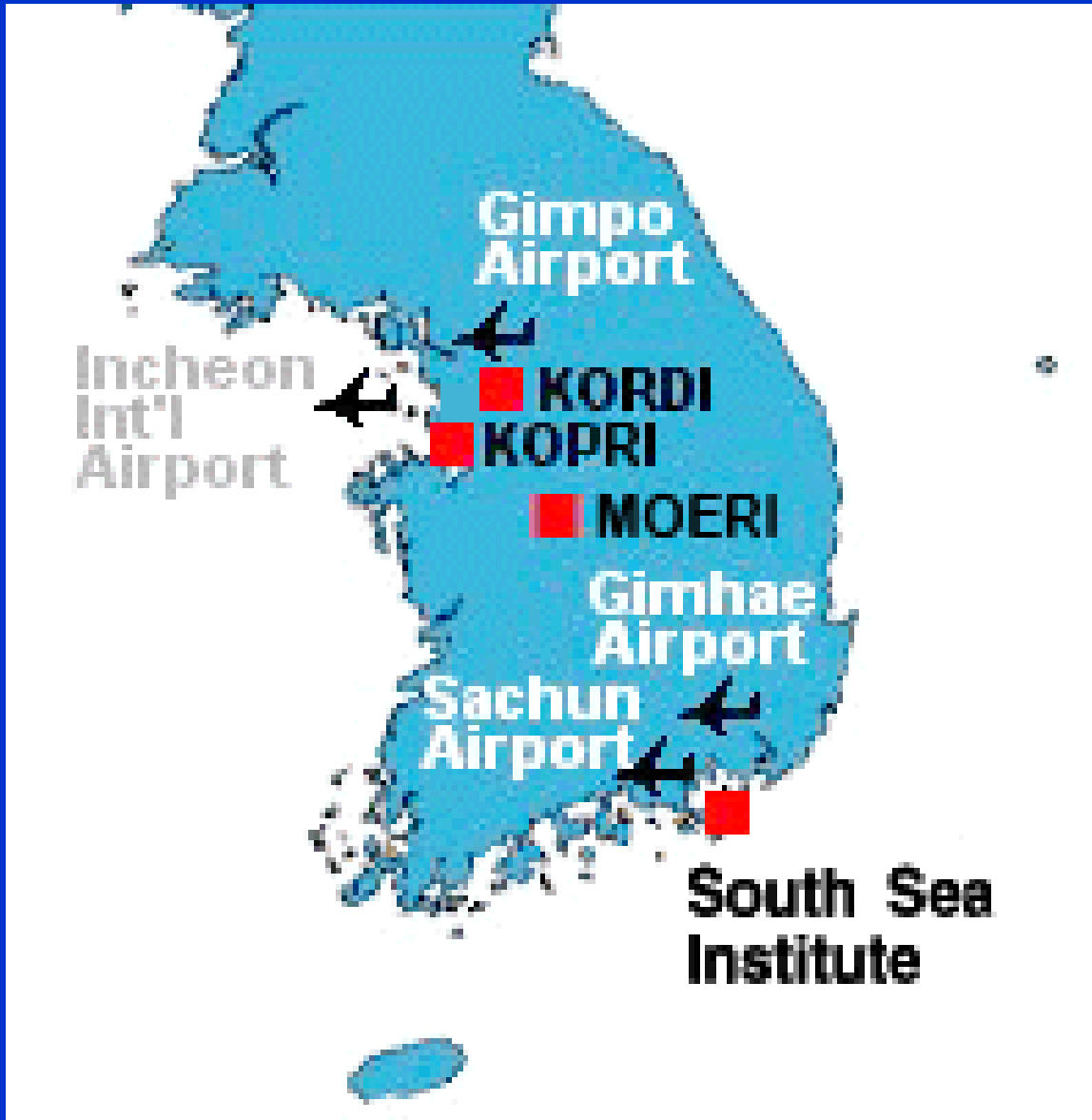


National Implementation of Korean Policy on Marine Litter Issue

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Location of Institute



Ocean
Engineering Res.
Dept.

Offshore Plant Res. Div

Ocean Exploration System
Res. Div

Marine Pollution Control
Res. Div

Marine
Transportation &
Safety Res. Dept.

Advanced Transportation
Sys. Res. Div.

Maritime Safety Res. Div.

Marine Litter (ML)

■ Definition by EPA

- any man-made, solid material that enters our waterways directly (for example dumping) or indirectly (for example washed out to sea via rivers, streams, storm drains, etc)

■ US Academy of Science

- Estimates the total input of ML into oceans worldwide is 6.4 Million tones per year – most of it does not degrade!

Marine Litter (ML)

- **Damage by the marine litter**
 - Ghost-fishing, destruction of spawning ground
 - Damage of coastal view caused by derelict marine litter
 - Cause of marine industry and vessel accidents
 - Damage of tidal power generation(10% down working efficiency)

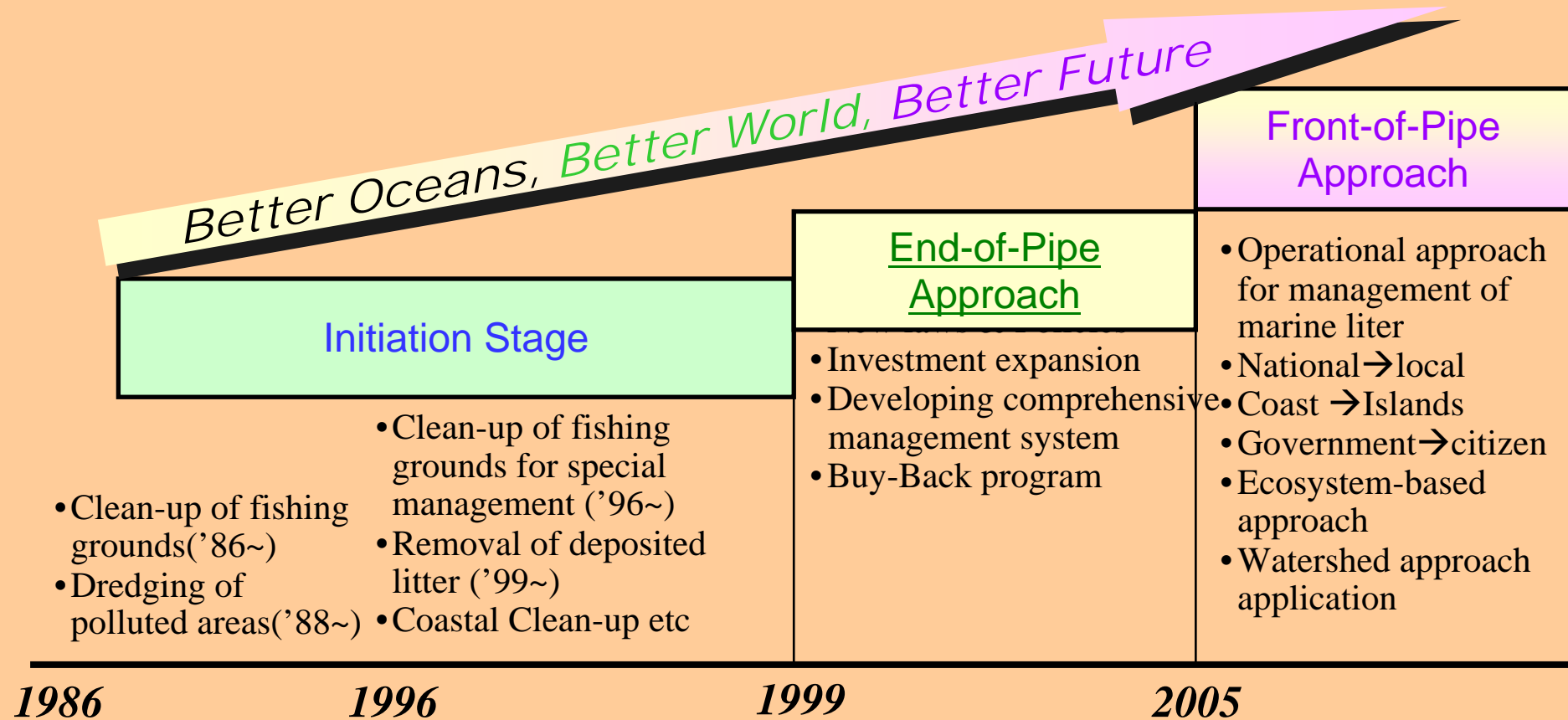


History of Marine Litter Approach

■ Korea situations

- Tremendous industrialization at 1970`s
- About 64% of the population living near rivers and coastline
- MOMAF (Ministry of Maritime Affairs and Fisheries) established at 1997
- In the end of 1990's, MOMAF starts a MANGO project (Marine Alliance among Nongovernmental organizations , Governmental sector and research Organization)

History of Marine Litter Approach



(Modified from Nam et al, 2002)

National Efforts

■ Government Agencies

- Major Execution : Ministry of Maritime Affairs and Fisheries(MOMAF)
- Construction of relationship with other government agencies
 - Ministry of Environment
 - Local Government, etc
- Enactment of relevant laws
 - Fisheries Ground Management Act(2000, entry into force 2008)
 - Marine and Fisheries Development Basic Plan (Korea's Oceans Police. 2004)
 - National Waste Comprehensive Management Plan(to be prepared)
 - Amendment of the fisheries source management
- Planning and administration of related programs on ML
 - System construction for retrieval of ML
 - Rigidity enforcement for marine floating litter
 - Education and public relations

■ Several Recovery Programs

- Major Execution : Government-controlled organizations
 - KFIPA(Korea Fisheries Infrastructure Promotion Association)
 - KMRC(Korea Marine Pollution Response Corporation)
- Related Programs
 - Removal ML at all 129 Fishing harbors(1999~2001)
 - Removal deposited ML(2002~present)
 - ML Buy-back program(2003~)

National Efforts

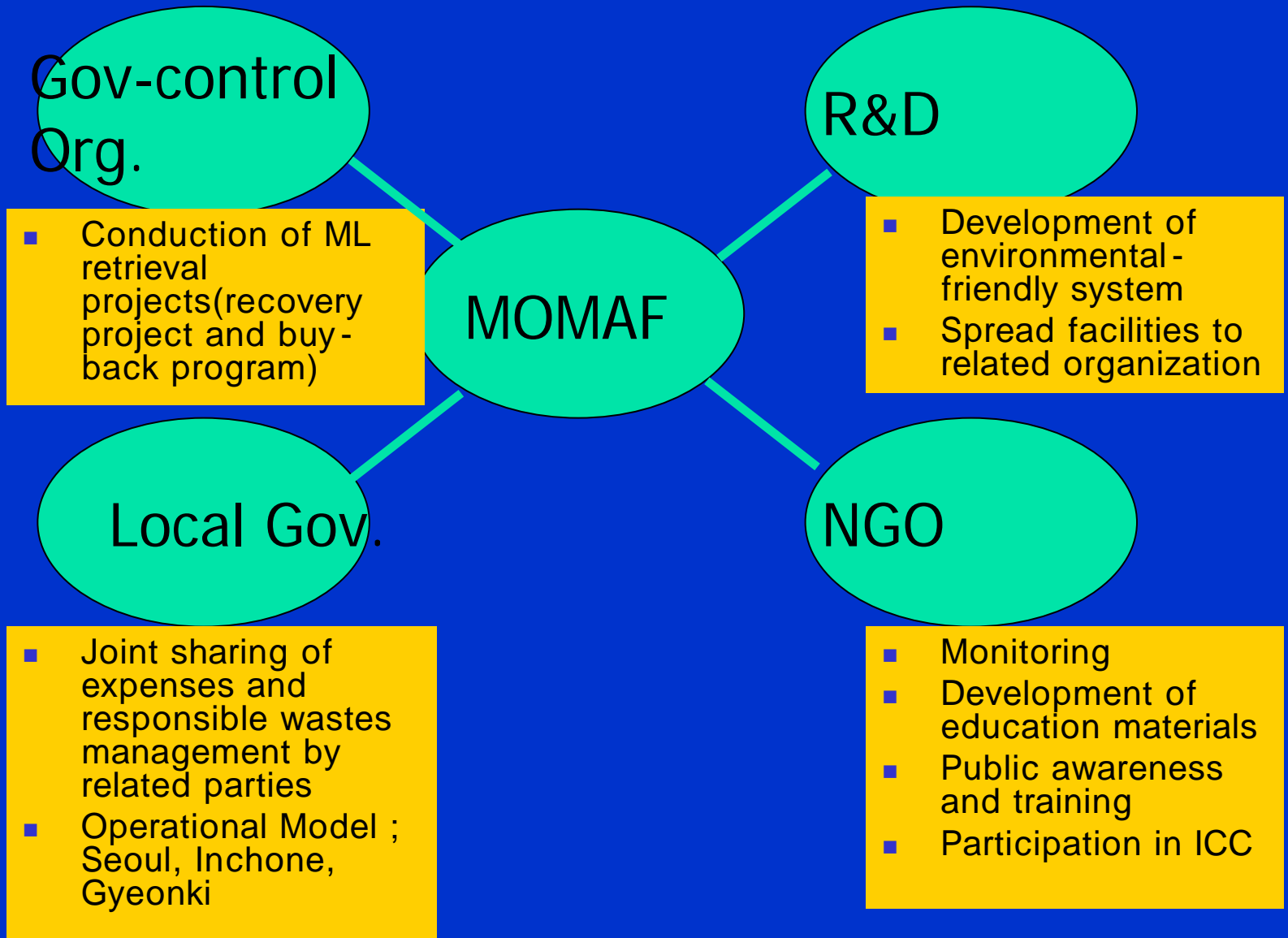
■ National Research Institute

- Major Execution : Korea Ocean Research and Development Institute(KORDI)
- Carry on R&D project on ML since 1999
- Development of core technologies for using field activities
 - Prevention technologies
 - Survey technologies
 - Recovery technologies
 - Treatment technologies
 - Administration technologies(monitoring, education materials etc.)

■ NGO

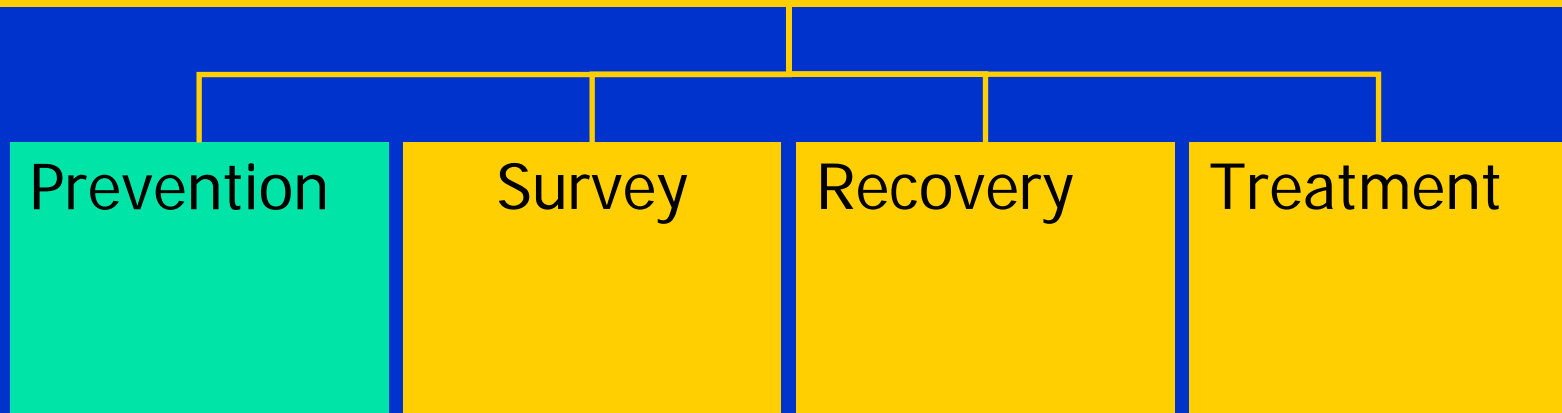
- Korea gov. supports the NGO activities according to the "Framework Act on Environment Policy"
- MOMAF proclaimed "Ocean Clean-up Day(2004)" in every month third week Friday
- NGO's focus becomes wider: mainly water quality on land -> Recently, coastal marine environment and its ecology
- Cooperative relationship between civil and governmental sectors has been developed for the last 5 years.

Structure of National Efforts on ML



National R&D project on ML

Integrated Management System for ML since 1999



- Floating debris containment boom (for usage in rivers and channels)
- Preventing the intrusion of wastes into the ocean through rivers or channels, blocking spreading and collecting

National R&D project on ML

Integrated Management System for ML since 1999

Prevention

Survey

Recovery

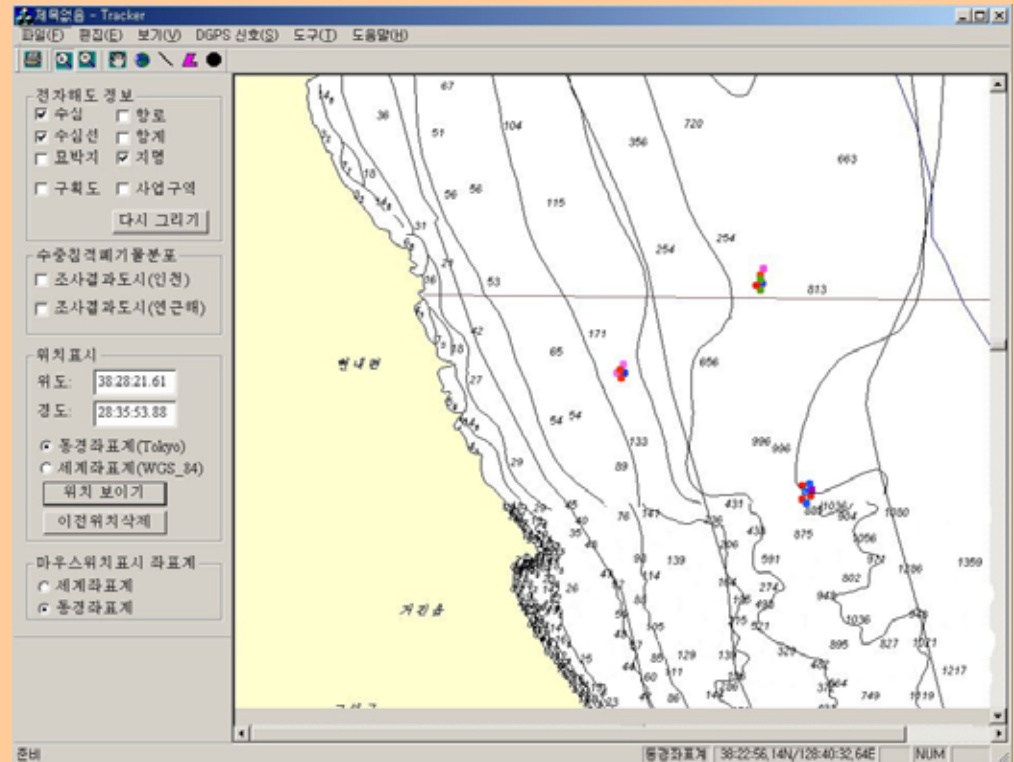
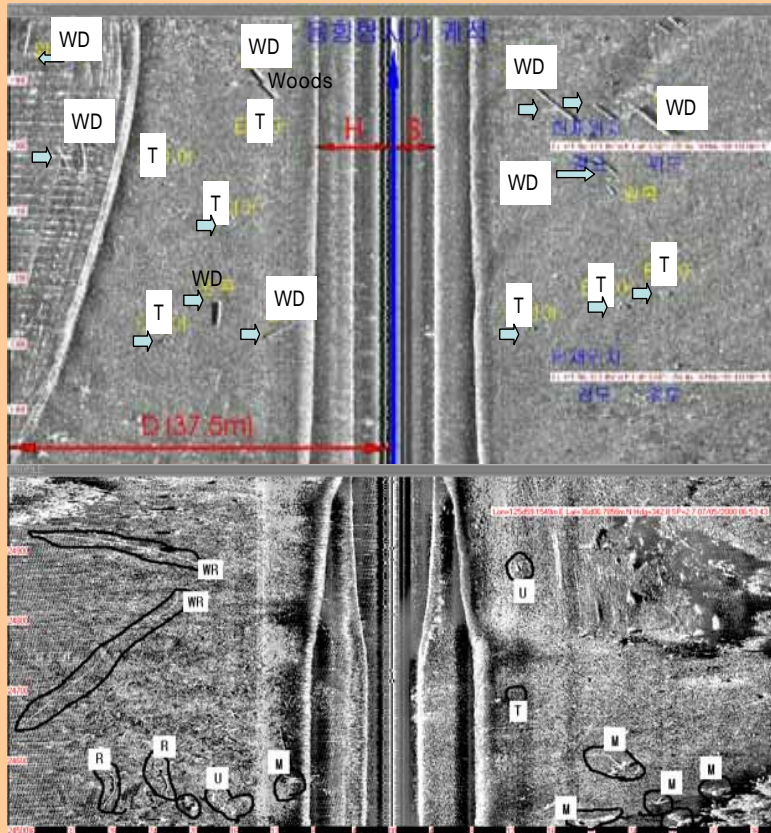
Treatment



- Side Scan Sonar(SSS) system for shallow water(129 fishing ports 1999~2001)
- Video & Quasi-real type camera survey system for deep water
- For derelict fishing gears distributed over the deep-sea bottom up to the depth of 1,000m in the eastern sea of Korea

Survey the deposited ML

- Total 129 fishery ports surveyed(27 ports on western,57 ports on southern, 45 ports on eastern coast)
- Total weight of marine litter at all harbors is estimated about 34,636ton
- Database ML locations and assumed the mount of it



National R&D project on ML

Integrated Management System for ML since 1999

Prevention

Deep-sea
Survey

Recovery

Treatment



- Multi-functional marine debris recovery ship with auxiliary recovery devices working around the western sea of Korea
- Displacement : 225.5ton , Speed : 7 knots, LOA : 27.5m,, Max. reach of crane : 15m

Budget for ML Recovery

Recovery amount : ton, (Expenses) : million won

| Years | '99~'02 | '03 | '04 | '05 | '06 | Total |
|------------------|----------------------------------|---------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|
| Recovery Project | 34,892 (25,085) | 11,338 (7,668) | 3,619 (6,893) | 5,354 (7,965) | 5,368 (8,308) | 55,203 (47,611) |
| Buy-Back program | - | 578 (731) | 2,453 (1,706) | 3,076 (1,841) | 5,137 (2,500) | 6,107 (4,278) |
| Total | 34,892 (25,085) | 11,916 (8,399) | 6,072 (8,599) | 8,430 (9,906) | 10,505 (10,808) | 71,815 (62,697) |

- Two field actions are mainly conducted by two government-control organization
 - In fishing grounds by KFIPA(Korea Fisheries Infrastructure Promotion Association)
 - In coastal waters by KMRC(Korea Marine Pollution Response Corporation)
- Executed at harbor site until 2003, extended to fishing area continuously
- Buy-Back program is that the government purchases the deposited marine litter pulled in during fishery activities
 - Ex) 4,000won/40liter (over14kg)

National R&D project on ML

Integrated Management System for ML since 1999

Prevention

Deep-sea
Survey

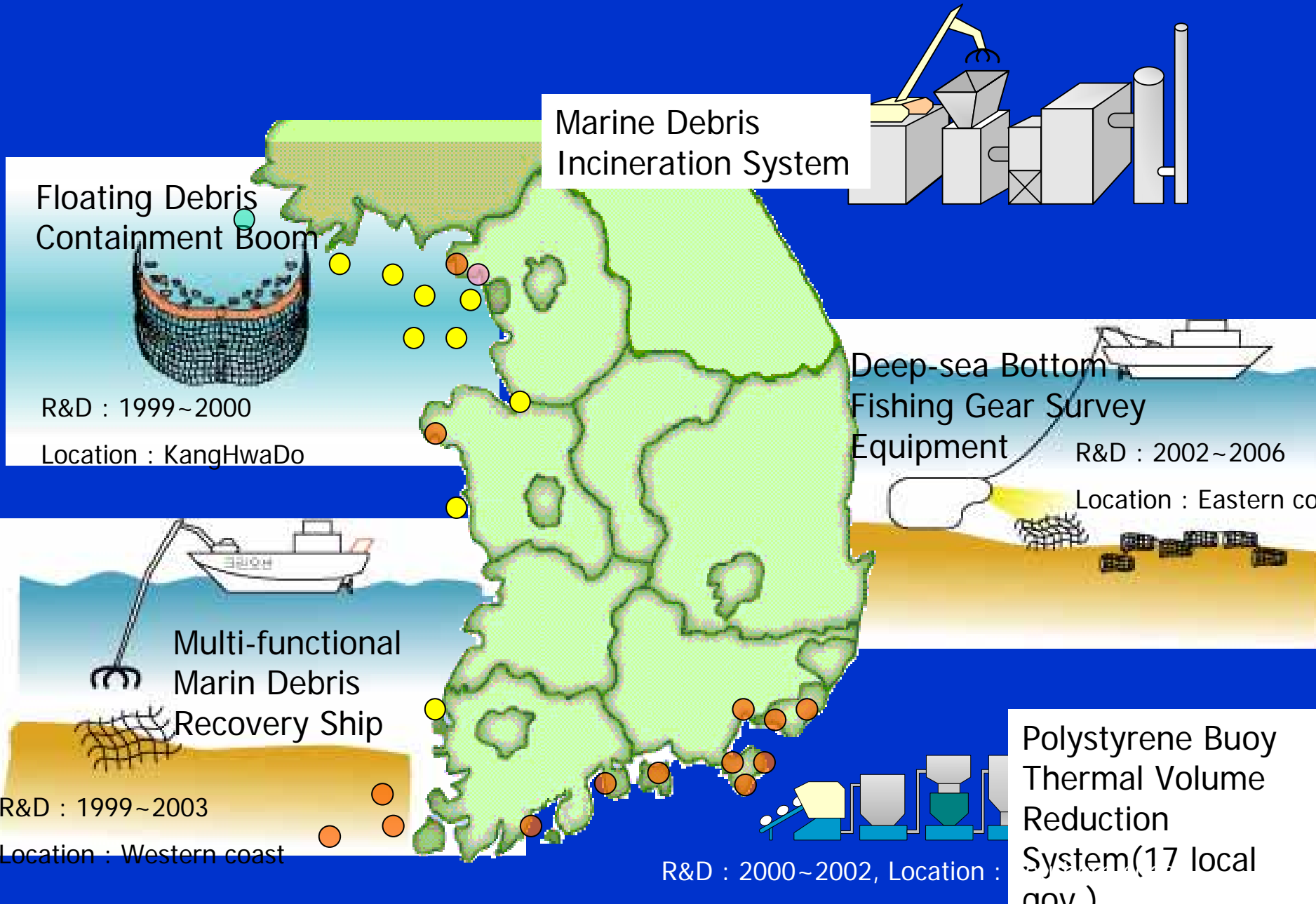
Recovery

Treatment



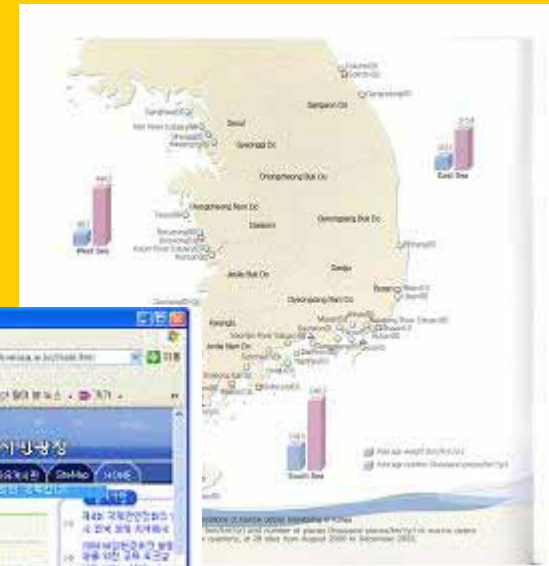
- Environmental-friendly and stable treatment methods and equipments
- Fishery waste Polystyrene buoy thermal volume reduction system(100kg/hr)
- Marine debris incineration system(100kg/hr)
- Waste FRP vessel melting treatment system(300kg/hr, build up to 2009)

Distribution of R&D outcomes



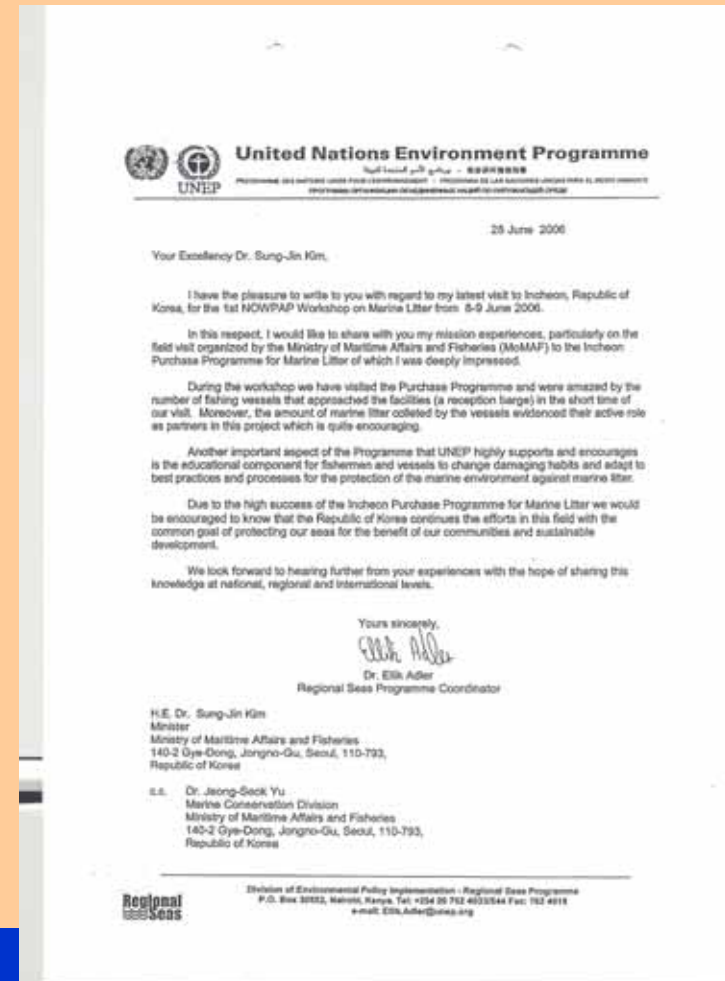
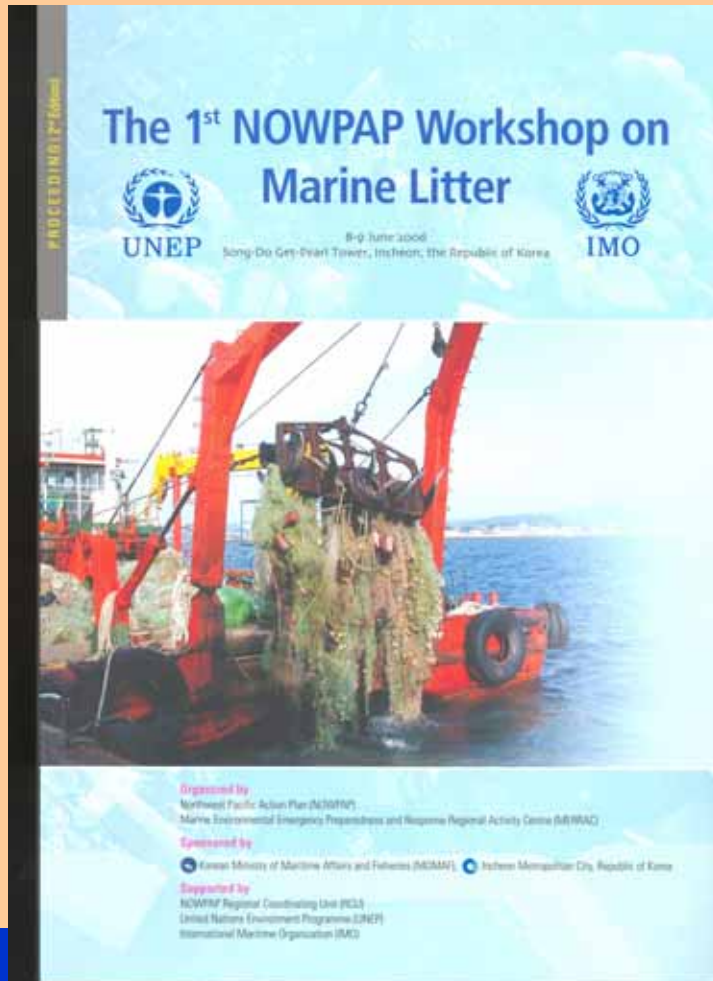
NGO Activities

- Development of Educational materials
- Offshore and sea-bed marine litter monitoring and its database on collecting materials
- Policy and education workshops for local environmental NGOs
- Summary Report of administration activities on ML
- Leading of ICC event



Public Relations to UNEP

- The 1st NOWPAP Workshop on Marine Litter
 - 8-9 June 2006 / Incheon, R.O.Korea



Summary

- The Korean coasts is confronted with the serious pollution with marine litters.
- Central gov., local gov, national institutes, gov-controlled org, and NGO stand together to eliminate ML.
- Development of new paradigms of policy adjusted to change of the marine environment.
- Improvement of budget stability through the special account by marine environment improvement shares.
- Promotion of local gov. associations to manage the sources of contamination on a regional basis(guide to the polluters pay principle in near future in Korea)
- Raising fishermen's consciousness and saving the cost of wastes recovery and treatment
- Financial supports for treatment costs only(ex. maximizing the recycling of marine litter applying the environment-friendly technologies)