

Challenges in Marine Spatial Planning for Protection; West Coast of RO Korea in East Asian Seas Context

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PEMSEA mechanism of ICM and current situation in MSP (1)

- ICM and SDS-SEA are umbrella strategy in coordinating environmental management in EAS
- Working sectors: SDS-SEA, ICM, Food security and livelihood, Habitat protection, Natural and manmade hazard prevention, Pollution and waste management, Water use and supply management, Blue economy, Youth
- Services of: Advisory and project, Knowledge, Certification, Facilitation and secretariat
- Operating mechanism: UNDP and partners supported voluntary international organization, Major task- coordination of SDS-SEA implementation, Organization- Partnership council (partners: country 11, non-country 20), Executive committee, PRF, Ministerial forum, EAS congress, Five working mechanism networks

PEMSEA mechanism of ICM and current situation in MSP (2)

- MSP is currently not arranged within PEMSEA's working sectors (reference: PEMSEA homepage)
- IOI (International Ocean Institute) initiated workshop at EAS Congress 2012 provided two overviews and six case studies on MSP
- Speakers were from Philippines, Indonesia, Cambodia, PR China, COBSEA, and IOI
- PR China: Marine Functional Zoning and National MFZ Scheme (2011-2020) with map was demonstrated

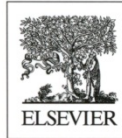
Current Korean situation in CMSP

- Feasibility study on Korean CMSP was launched in 2015
- Korea ocean policy is sectoral, not horizontally or vertically integrated
- In the coastal zone, development projects are overwhelming
- CMSP would be an efficient instrument in balancing areas of development and preservation, and minimizing excessive explorations of coastal resources
- But challenges ahead are huge

Main Theme of the presentation: Why CMSP is challenging in Korean coastal waters

- Developments are overwhelming, and initiated multiply: various Korean ministries apply an use of sea areas to MOF (Ministry of Ocean and Fisheries) for their own purposes
- Paradigm shift to conservation is urgent, but political pressure for developments is great
- MPAs are designated for various purposes, and distributed fragmentally over the entire coast
- There lacks guiding principles under EBM in allocating human activities to specific coastal areas
- An offshore boundary of an ecosystem unit for protection is demonstrated in the presentation

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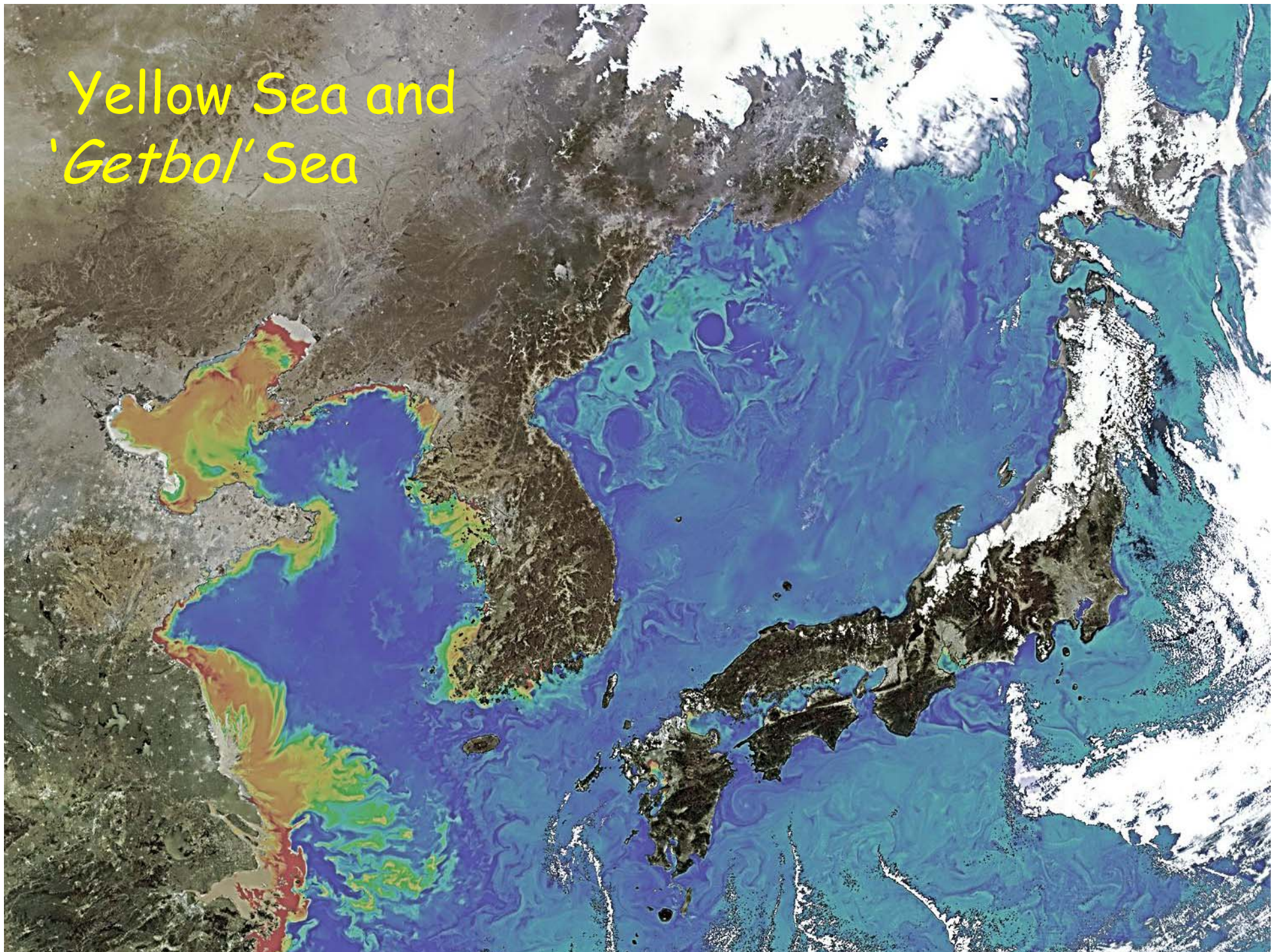
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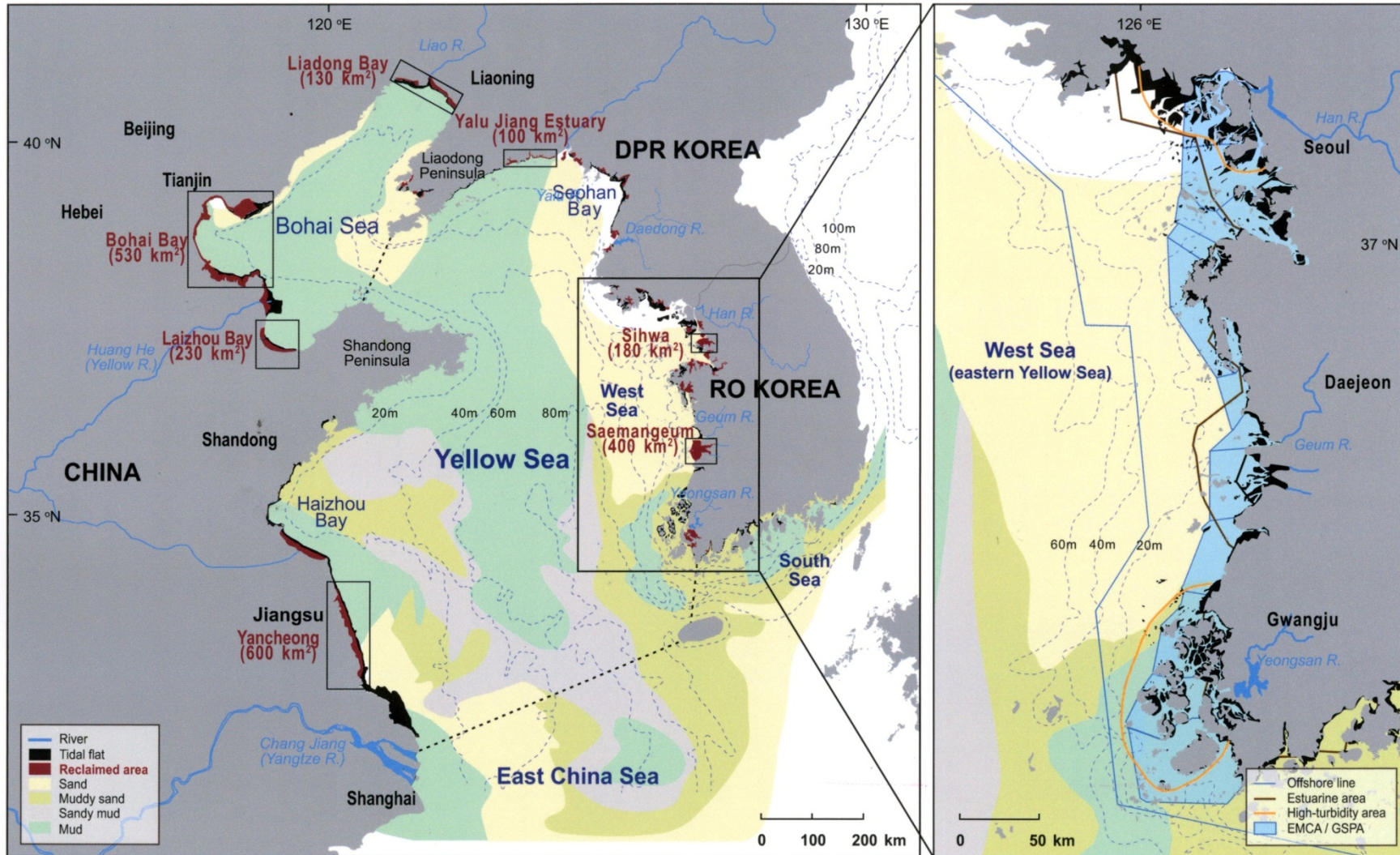
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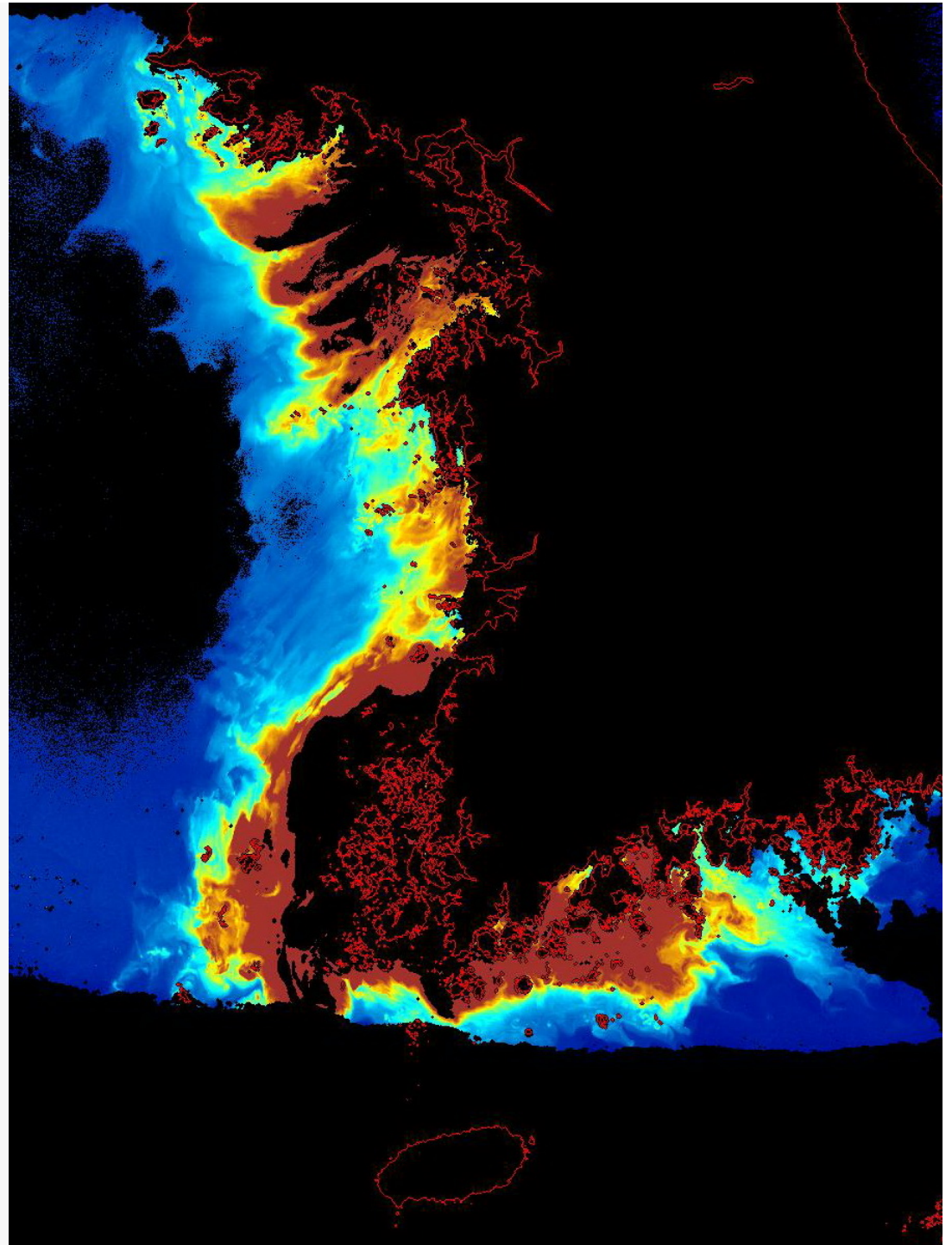
Yellow Sea and
'Getbol' Sea



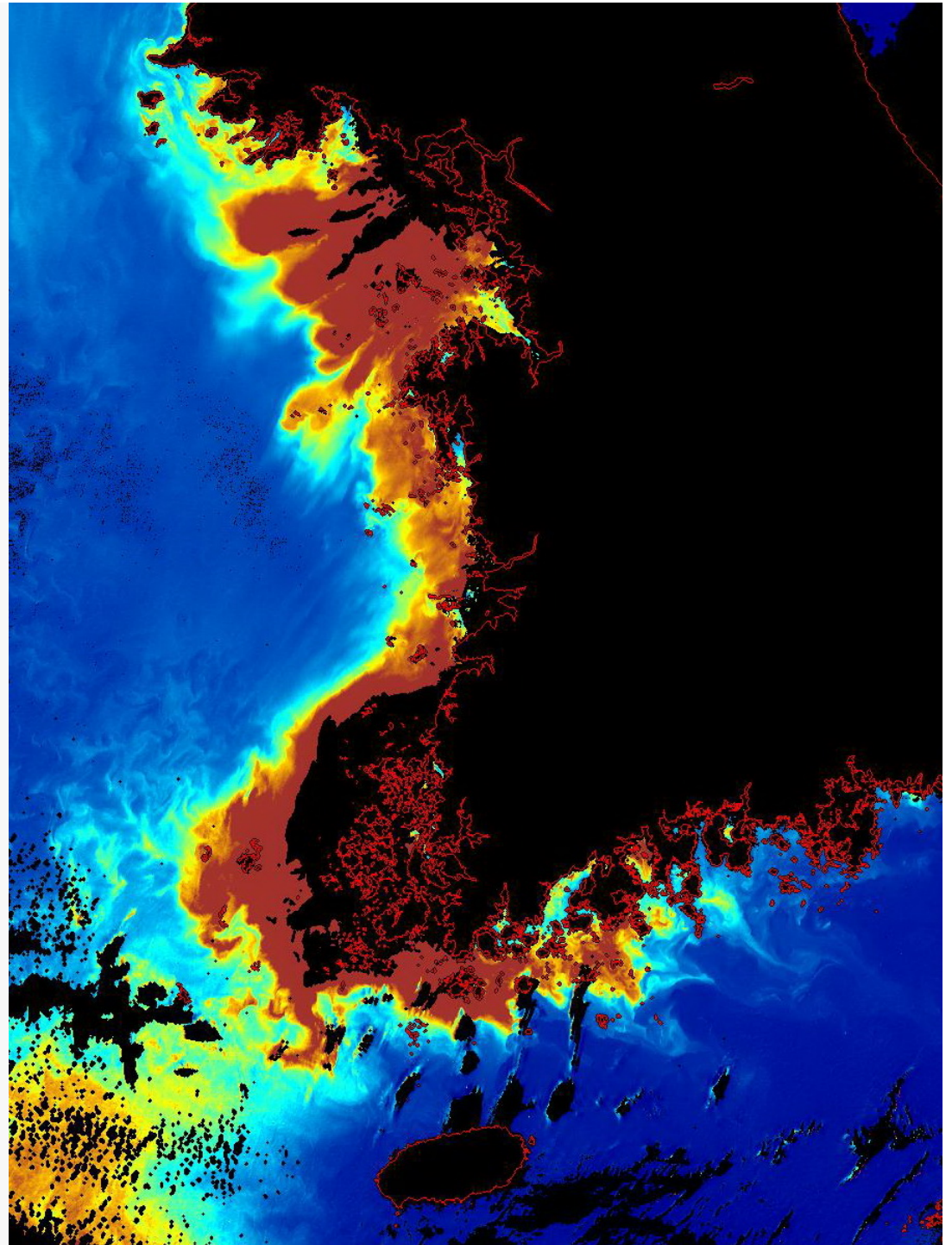
Yellow Sea and 'Getbol' Sea



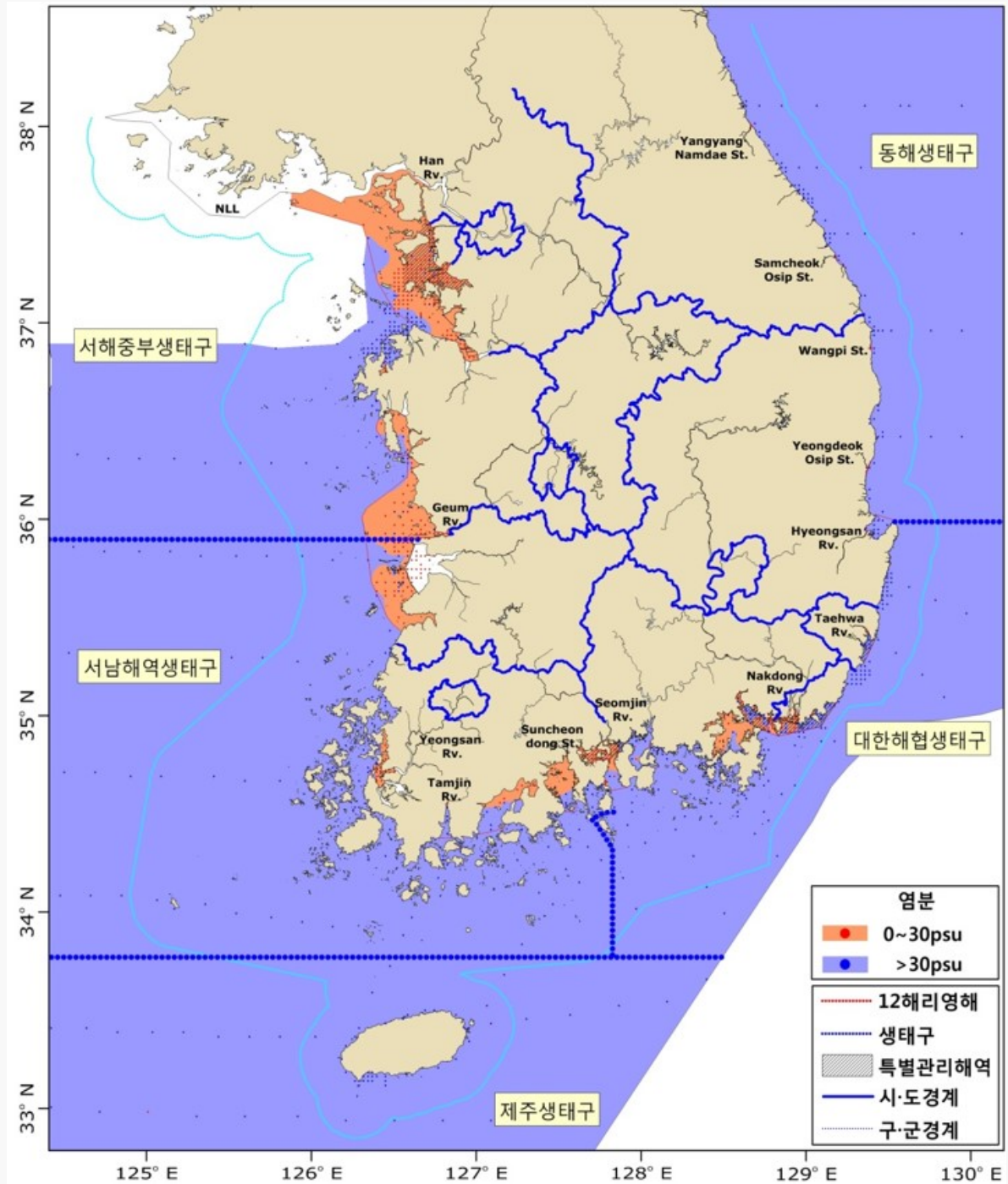
Turbid water
pictured in Dec 2013



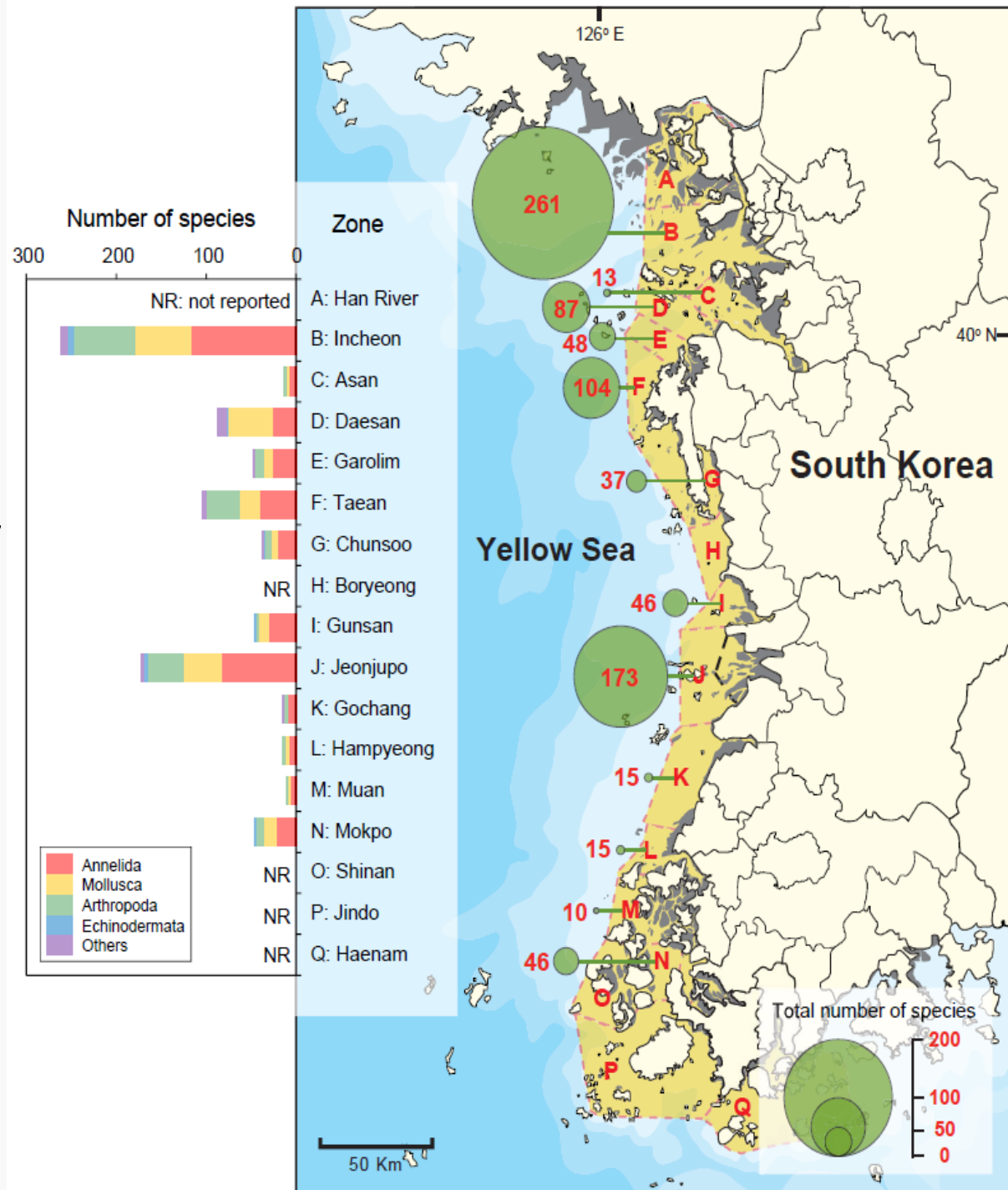
Turbid water
pictured in Jan 2014



Contour line of Salinity 30 PSU



Ecological core areas identified by sediment fauna



Why this ecosystem zoning is explored?

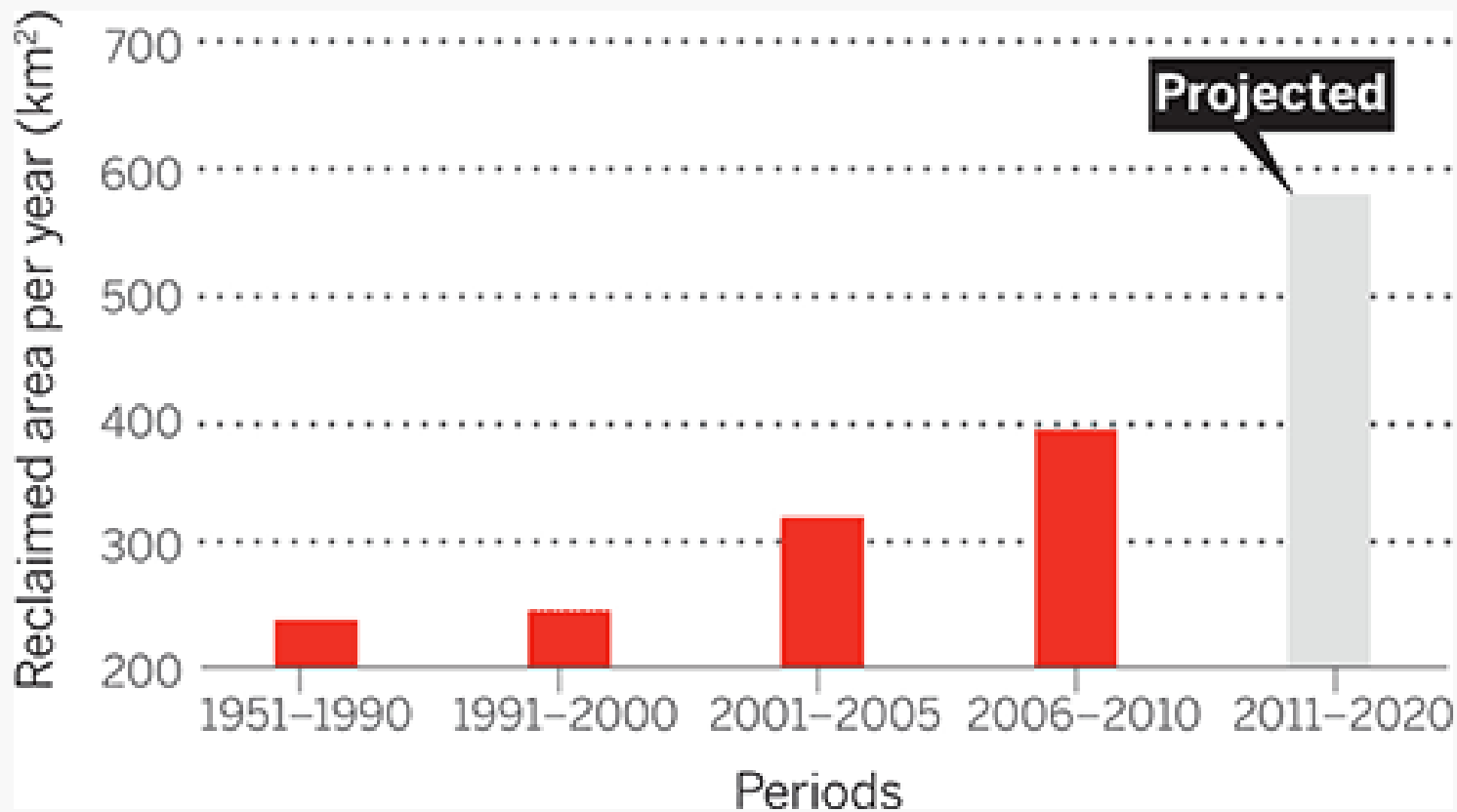
- Huge reclamation projects devastated key estuarine areas and bays
- Tidal power plants were also a society-wide issue
- Offshore wind-farm projects are expected
- Degradation of water quality is another urgent issue
- Balancing sea areas of human use and **protection through EBM is urgently needed**

Situation

1. Development

Coastal developments: Korea and China





**Zhijun Ma et al., 2014, Rethinking China's new great wall,
Science, 345(6212): 912-914**



**Zhijun Ma et al., 2014, Rethinking China's new great wall,
Science, 345(6212): 912-914**

RO Korea:

Saemangeum Project: Dike completed in 2006



- Subsistence fisheries are typical to the entire west coast, RO Korea
- Development projects devastated ecosystem-coupled economy and local culture





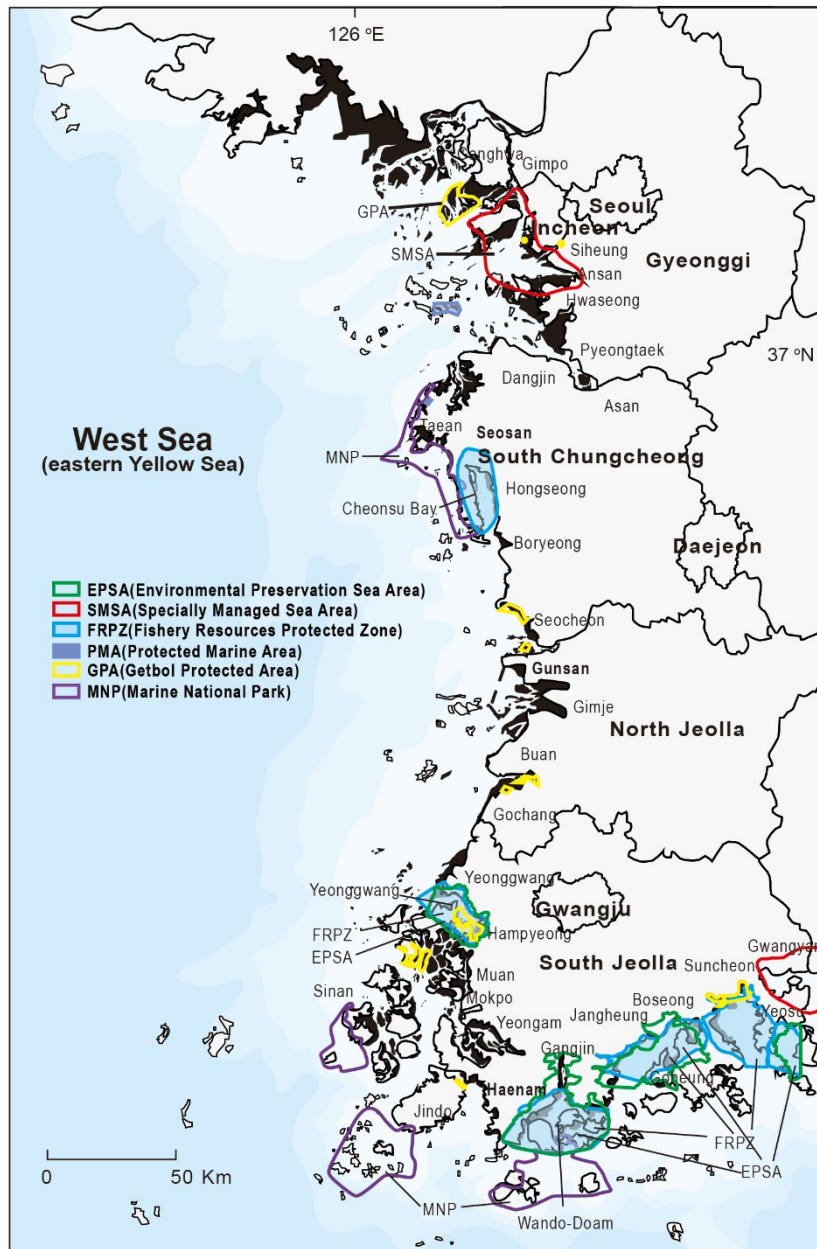
↑
Sihwa Project:
water quality degraded

10x 250 MW generators
in operation from 2012:
An alternative to reduce
the lake water pollution
by flushing with
seawater outside

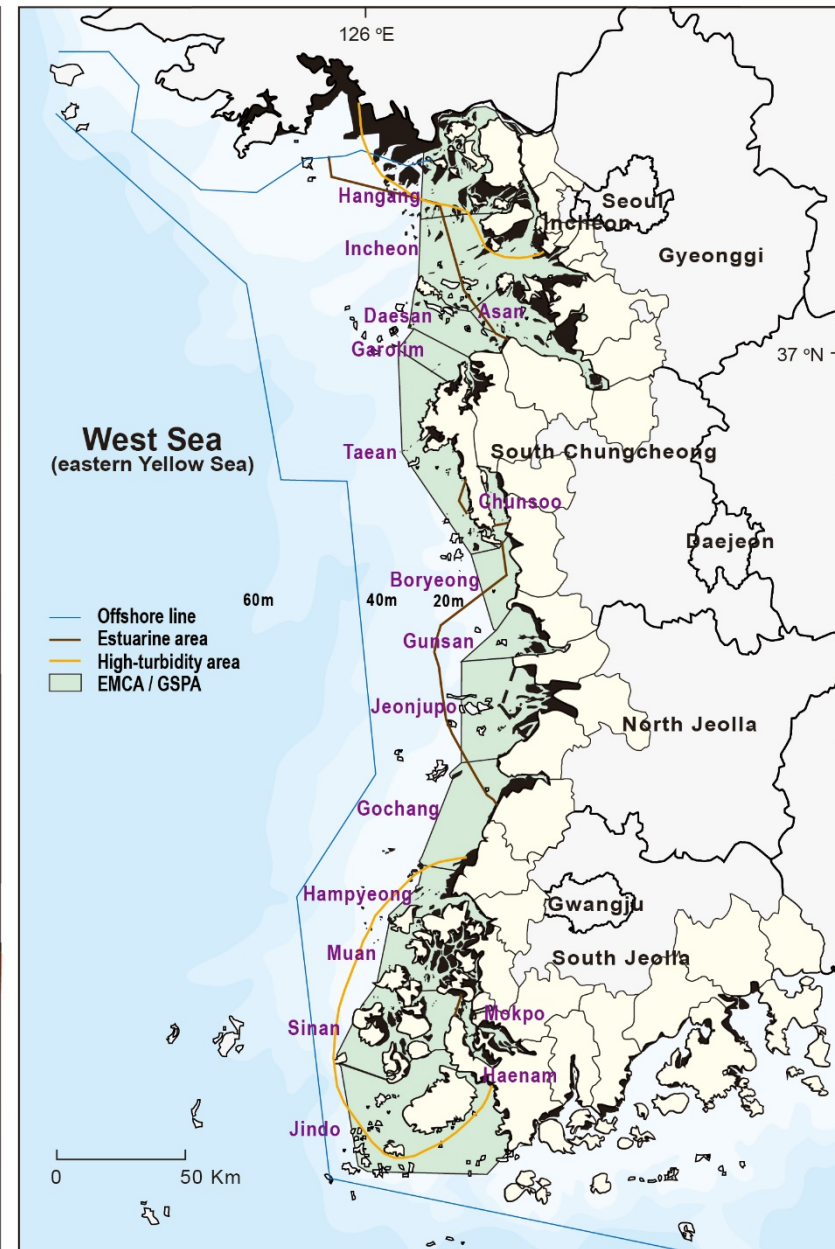
Situation

2. Nature Protection

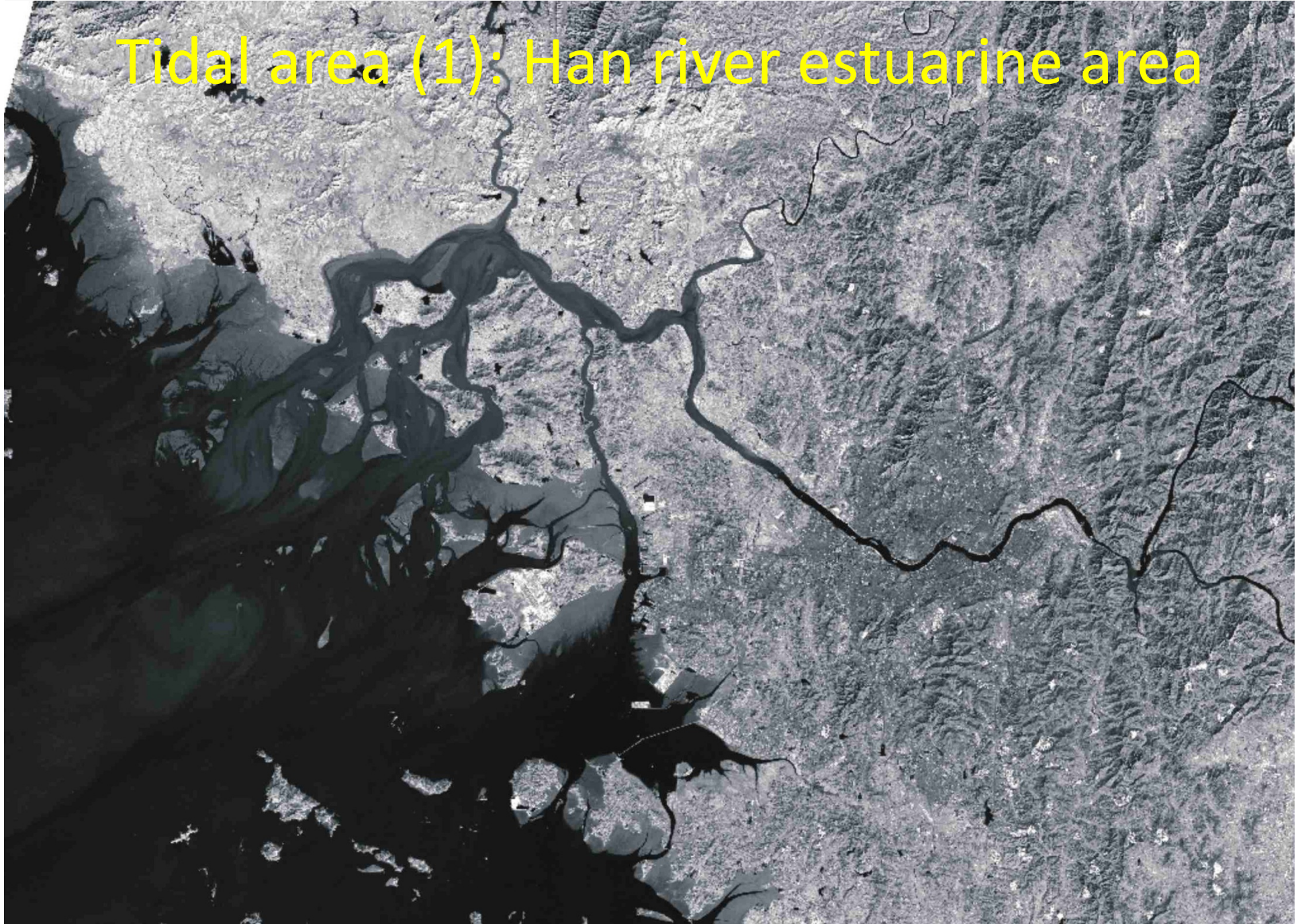
Protected areas



(b)



Tidal area (1): Han river estuarine area



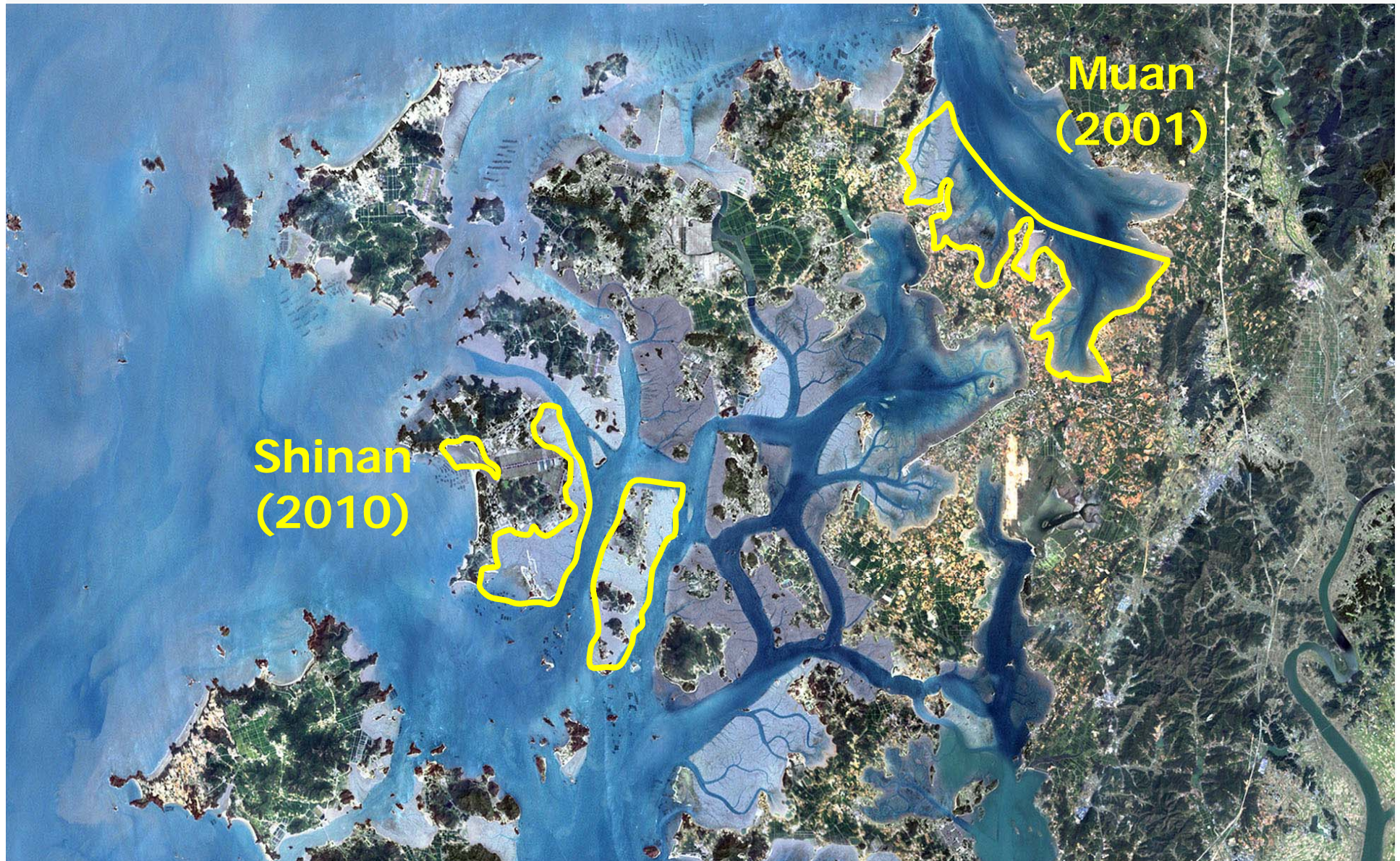
Tidal area (2):
Islands associated
coastal zone,
Shinan



Islands associated tidal area: air-view



Current MPAs: not an ecosystem unit, not spatially integrated



Current MPAs: multiple instruments applied



Biosphere Reserve
(2009)

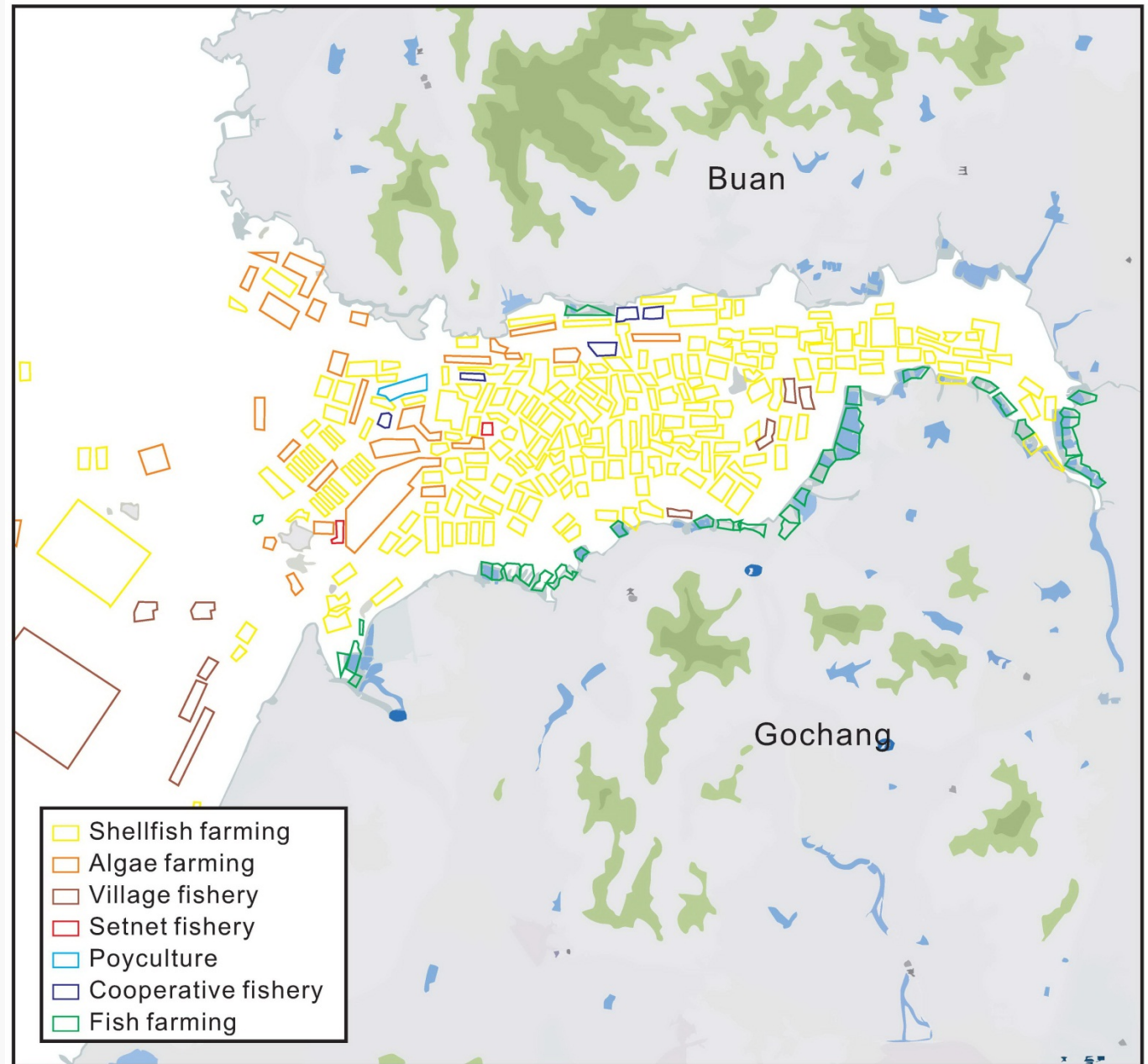
CWPA
(2010)

Provincial
Park
(2008)

Gomso Bay: subsistence fisheries



Quadrats of shellfish cultivation



Protected Areas in summary

- Not considered sufficient in size at ecosystem scale and ecological processes are not inclusive
- Not integrated spatially (fragmented in small pieces over the entire coast)
- Management, monitoring, and evaluation arranged sectorally

Situation

3. Institutions

3. Institutions- Development and Conservation relevant laws

- CMMEA: Conservation and Management of Marine Ecosystem Act
- WCA: Wetlands Conservation Act
- FRMA: Fisheries Resources Management Act
- MEMA: Marine Environment Management Act
- PWMRA: Public Waters Management and Reclamation Act
- CMA: Coastal Management Act

3. Institutions: Target sea areas and actions

Act	Target Sea Area		Action				Relevancy to		
	Getbol	Coastal sea area	Ecosystem protection	WQ Mgmt	Land Reclamation	Aerial designa - tion	Other Acts	Int'l Convention	Inclusive - ness
CMMEA		x	x			PMA		CBD	Sectoral
WCA	x		x			GPA		Ramsar	Sectoral
FRMA		x	x			FRPZ			Sectoral
MEMA		x		x		EPSA SMSA	CMA	MARPOL	Sectoral
PWMRA	x	x			x	RA	CMA		Integrative but seldom practiced
CMA	x	x			x	Funct'l Zoning by 2020	MEMA PWMRA		

3. Institutions: summary

Current legal hierarchy is not sufficient for CMSP and not integrated

1) horizontally: fisheries, coastal wetlands, national parks, and environmental management (water quality)

2) vertically: laws not hierarchically structured

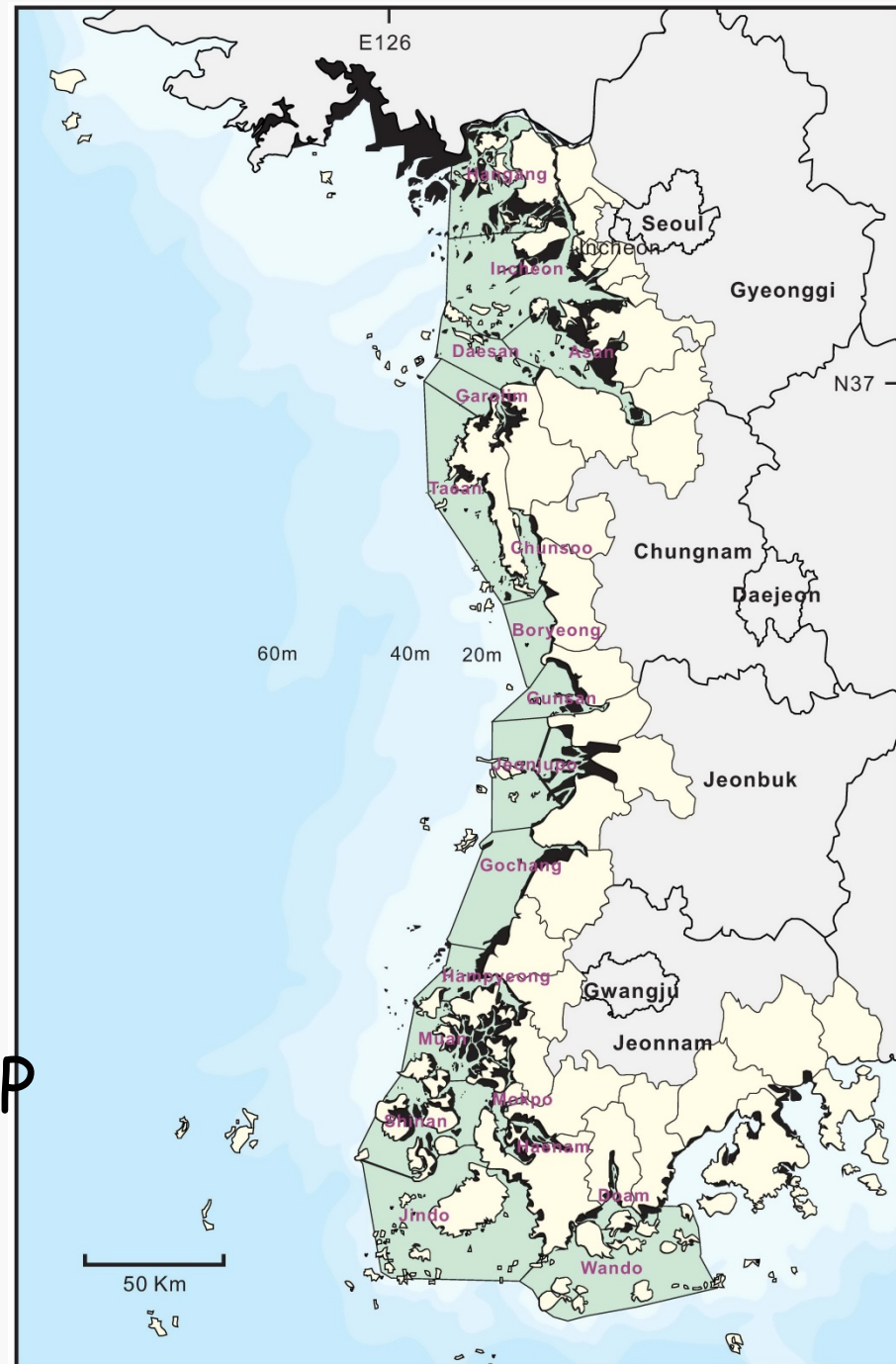
Coastal Management Act (CMA, comparable to ICM strategy) should lead the umbrella position in allocating human uses and protection, but actions are limited to onshore-offshore use approvals (dredging, sand mining, reclamation, etc.)

A new policy strategy for CMSP is in debate within Ministry

Challenges and Conclusions

This presentation
comprised to Step 5:
Defining and
identifying existing
conditions

A zoning (*Getbol Sea*) is
proposed to trigger
conservation at an
ecosystem unit and CMSP



Challenges and conclusions (1)

Introducing CMSP for the west coast of RO Korea through EBM appears crucial

Current uses: Fisheries & aquaculture, Coastal development

Future uses: Wind energy

Protection: Marine biodiversity and habitat, Indigenous coastal communities and cultural resources

But it requires understanding and knowledge of ecosystem, its socio-economic coupling, and participatory governance

Challenges and conclusions (2)

Currently at initial stage of Step 5: Defining and analyzing existing conditions-

MSDI relevant activities:

Future activities are for Data collection, classification and identification of sea areas by ecological attributes, and mapping

Available agencies would be: Korean IHO, NFRDI, KIOST, KOEM, KMI, and academia

Guiding principle: Human uses should be qualified under EBM framework