

Adapting to Climate Change and SLR through ICZM Laws: The South Asian Experience



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Scheme

- The impending crisis of climate change and SLR – impact on the coastal regions of S. Asia
- ICZM - adaptive tool for sustainable development of coastal areas and resources
- State of ICZM laws in South Asia (primary emphasis on India, Sri Lanka and Bangladesh)
- What needs to be done to operationalise ICZM?

Climate Change and SLR in S. Asia

- South Asia coastline - 11,500kms
- Sub-continent - 130mn. live in low coastal elevation zone (area < 10 mts. above sea level)
- By 2100, SLR 40cm high (most conservative estimate)
 - number of people flooded increases from 13mn. to 94mn. (annually)
 - 60% of this increase in S. Asia
- Rise in sea-surface temperature by 2-4°C to increase tropical cyclones by 10 to 20% (IPCC)
- Majority of the world's poor in S. Asia - least capacity & resources to adapt
- Coastal ecosystems under considerable stress, reduced resilience , e.g., impact of 2004 tsunami minimised by mangroves
- Warrants a new approach

What is ICZM?

- Overcomes fragmented and sectoral management response
- Eliminates jurisdictional overlaps
- Aims for spatial integration
- Sustains essential ecological processes and provides for improvements in bio-physical environment
- Reduces vulnerability and enhances quality of life of coastal inhabitants

For Sustainable Coastal Development

Evolution of ICZM

- *U.S. Coastal Zone Management Act, 1972*
- UNCLOS preamble
- UNCED Conference 1992 – Rio Declaration and Chapter 17 of Agenda 21
- World Bank , FAO, OECD guidelines
- In 1993 - 75 countries had 217 ICZM programs
- In 2002 - 145 countries had 622 ICZM programs (See *Sorensen*)

ICZM an Adaptive tool

- Adaptation - retreat, protect, accommodate
(Coastal Management Sub-group, IPCC, 1990)
- ICZM facilitates all three responses.
 - e.g, - *South African Integrated Coastal Management Act, 2008*
 - s.25 (set back) = “retreat”
 - s.49 (municipal coastal management program to deal with coastal erosion) = “protect”
 - s.15(1) (state cannot be compelled to prevent erosion) = “accommodate”
- Article 4(1)(e) - UN Framework Convention on Climate Change
- Working Group II of IPCC 4th Assessment Report:
 - “The ICZM concept ... could potentially promote sustainable coastal area protection & management in ... Asia.”

India: State of Coastal Development & SLR

- Coast line 7,500kms.
- 50% population live in 53 coastal districts
- 11 coastal cities - more than a million (Mumbai 20million)
- Beaches to disappear in 20 years
- 34% mangrove destroyed
- LBSMP very high (shipbreaking)
- Nuclear PPs hot water discharge
- 1mt. rise – inundate 6,000km²
(7million climate refugees)



Coastal Zone Management Law in India

- CRZ notification 1991 under *Env't. Protection Act, 1986* (delegated legis.)

Features:

Jurisdiction - CRZ area - land up to 500 mts. from the High Tide Line on to the landward side - a rigid distance criteria, no seaward component

Classification - CRZs I to IV (ecologically sensitive areas, urban, rural, A&N and Lakshadweep islands)

Prohibition - 13 activities in CRZ subject to exceptions

Develop CZMPs - States to identify CRZ areas within 1 year

One Step Forward, Two Steps Back....

- Globalisation (1991) - coastal lands - prized real estate
- CZMPs and institutional mechanisms delayed
- *Indian Council for Enviro-legal Action v. Union of India* (1996) - central govt. to set up CZMAs, CZMPs
 - “Enactment of a law, but tolerating its infringement, is worse than not enacting a law at all.”
- 25 amendments – dilute regulatory requirements– notification nugatory
- 2004 MoEF Committee appointed - Draft CZM Notification, 2008
- Further dilution, CZM 2008 allowed to lapse

Pre-Draft CRZ 2010

- Amends the CRZ, 1991 and builds on it
- Retains 13 prohibitions and all exceptions
- CRZ re-classified into 5 categories
- From an ICZM perspective - CRZ-IV (seaward component 12nm.)
- New category CRZ-V - critically vulnerable areas to be managed *via* ICZMP
- ICZM project – World Bank funding
 - Implementation of pilot projects
 - Centre for Sustainable CZM
 - Mapping the national coastal hazard line

However....

- CRZ 2010 is weak from ICZM perspective
- no guidelines for ICZMP
- no relationship between the WB project and CRZ 2010 since CRZ 2010 is yet to be notified
- retains all pro-development provisions
- no rules to manage the hydro-space (though there is seaward integration)
- ICZM on a weak footing

Sri Lanka

- 1,620kms. of coastline
- 8.4 million people
- 80% industrial units & 70% hotels
- 50% of mangroves destroyed (1986-2002)
- Oil spills - MPPA 1981
- Projected SLR – 1mt. by 2070
 - Loss to land resources (1,242 million SL. rupees); tourism industry (201 million SL. rupees)



Coast Conservation Act, 1981

- Coast Protection Unit (1963)
- *Coast Conservation Act, 1981*
- Coastal zone defined from an ICZM perspective
(300 mts. landward from mean high water line and 2kms. seaward from mean low water line)
- Two authorities – Director, Coast Conservation Department and Coast Conservation Advisory Council
 - Director primary responsibility to administer CCA
 - Survey and CZMP preparation
 - Developmental activity in coastal zone based on permit issued by Director (EIA)

Sri Lanka Moving Towards ICZM

- 1990 - first CZMP dealt with erosion control, sand and coral mining
- 1992 – “Coastal 2000 Document” – spearheaded the movement to ICZM
- 1997 - CZMP revised – sea level rise linked to coastal erosion control, marine pollution, “special area management” - bottom-up and collaborative management
- 2004 – CZMP - integrating coastal fisheries, public access, etc.

Bangladesh: Coastal Development & SLR

- Coastline -710 kms
 - Coastal population -36.8 million
 - 6.82 million coastal households - 52% poor
- Delta of Ganges, Brahmaputra & Meghna rivers
- 30-35% of the total land surface inundated yearly (in 1988 and 1998 more than 65%)
- Severe tropical cyclone once in 3 years
- Ship recycling, increased use of pesticides in coastal zone (4,520 tons)

Bangladesh: Coastal Development & SLR

- Mangroves in *Chakaria Sundarban* - cleared for aquaculture
- Arsenic contamination (61 out of 64 districts)
- Salinity intrusion; soil salinity affecting 30% of coastal cultivable land

SLR Predictions

- 2020 – 10cms. SLR; inundate 2% or 2,500 km.² and 15% of Sunderbans
- 2050 - 25 cms.; 4% or 6,300 km² and 40% of Sunderbans
- 2100 – 1 mt.; 17.5% 25,000 km² and Sunderbans lost for ever

ICZM in Bangladesh

- The Coastal Zone Policy 2005 – guidance on management & development of the coastal zone
- Coastal Development Strategy –provides realistic approaches to translate the policy into action
- Priority Investment Program – programs, actions & projects
- Co-ordination through Ministry of Water Resources - lead Ministry, & Water Resources and Planning Organization (WARPO) -lead agency
- Yet to enact a dedicated statute for ICZM
- 90 laws applicable to the coastal zone
- Entrench fragmentation & not integration – primary weakness

Maldives

- 80% < 1 meter above sea level
- 44% of all settlements & 99% of all tourist accommodation fall within 100mts. of coastline; two intl. airports – 50 mts.
- “De-territorialised state”
- No coastal law – *Envt. Protection & Preservation Act, 1993*
- National Adaptation Programme of Action, 2006
- Adaptation strategies include: coastal zone management, rainwater harvesting; recharging aquifers, etc.

Pakistan

- Coastline of 1,050 kms. shared b/w Sindh & Balochistan
- 75% of the coastline lies in Balochistan – comparatively under-developed
- Sindh will be badly affected – Karachi region
- 1994 ICZM Workshop – Sindh (1994), Bal. (1998) provinces have enacted Coastal Development Authority Acts

Way Forward ...

- South Asian countries not on the same footing with regard to their ability to adapt to SLR via ICZM laws
 - (India – delegated legis., confusion; Bangladesh – policy; Maldives – general laws; Pakistan – provincial laws; Sri Lanka –dedicated statute)
- Highly necessary to enact/re-engineer coastal laws that are based on ICZM principles and promotive of three adaptive responses - retreat, protect, accommodate
- South Asian Seas Program and SAARC Coastal Zone Management Centre to be involved

“This is the worst pain a man can have:
to know much and have no power to act.”

- Herodotus

Thank you!

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