

Task 4

Memories of past changes, oral history
and adaptation: community-level
analogues to climate change and their
use as a means to reduce coastal
vulnerabilities

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Task 4

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Please answer the following questions

- Questions

1. What is your most important result/ observation with regard to lessons from past adaptation processes?
2. Do they qualify as analogs of current adaptation needs/ practices, and how (or if no, why not)?
3. How did you come about these results/ observations?
4. Are there other results/ observations that you wish to share?

Question 1

What is your most important result/ observation with regard to lessons from past adaptation processes?

- The social and economic adaptation of coastal communities along the south Indian coast was largely shaped by the interplay of environmental and forward policies of colonial actors (Portuguese- 16th century, Dutch, 17-18th century and the English, 19th and first half of 20th century)
- The rich diversity of natural resources and global trade connected local communities with external traders and rulers.
- Apart from trade, such connections finally resulted in the exchange of knowledge for agriculture and a liveable coastal ecosystem and habitat

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Floods and decline of Musirus

- Heavy floods and sedimentation occurred in the 14th century made the then major port Musirus dis-functional and led to the development of small ports around Cochin Gradually, Cochin emerged as a major port under the British design.
- Coastal livelihoods during that period was based on primary products and later to semi-processed goods like coir and cotton fabrics
- In order to address the issue of erosion, the Cochin Raja introduced beach protection measures such as break waters and land filling
- The British later modified these engineering initiatives and introduced sea walls to offer stable protection to the sea shore but partial

Development of Kochi Port and coastal vulnerabilities

- Kochi emerged as a major harbour in the 1930s at the initiative of the Governor of Madras (British Empire) in consultation with the local kings of Cochin & Travancore and Bristow, a British engineer (Top level institutional).
- Professional warnings relating to coastal vulnerabilities of the new harbour were neglected by the formal institutions due to lack of funds.
- Coastal erosion became more vulnerable on the southern part of the Kochi river (harbour) mouth, i.e. Chellanam, later.
- Social pressure increased to make enhanced investment on beach protection in the 1940s and 1950s.

Post independent interventions

- There were a series of experimental attempts to protect the beach in terms of materials and designs between 1950 and 1970
- The central government constituted Beach Erosion Board in 1966 to address issues of Kerala coast, especially Chellanam-Vypin belt
- Formed Coastal Protection and Development Advisory (1995) in 1995 applying to the whole nation (macro).
- The committee identified 11 and 8 vulnerable spots at Chellanam and Vypin belt respectively

Community response

- The committee recommended a combination of sea wall and groin combination with a top level slope plus a land side retaining wall as a satisfactory design to protect the beach.
- Implementation was unsatisfactory as meso level formal institutions are less dynamic to understand the social requirement.
- This led to community level responses beyond protests.
- Autonomous adaptations took place in beach protection in terms sand bags, plastering of existing sea wall, sand dunes using JCB, Parallel retaining walls etc.

Current autonomous adaptation

- Transformation of production system from agriculture (rice, vegetable and coconut) plus cattle rearing to less agriculture and aquaculture intensive system took place in the second half of the 20th century due to beach erosion, increased salinity and irregular rainfall.
- Current adaptation practice is to limiting rice production, less depends on coconut and increased reliance on aquaculture and centralised fish landing instead of decentralised landing due to hard engineering (sea wall).
- Aquaculture coexists with different forms of tourism as a source of livelihood and employment.

Autonomous adaptation

- Rooftop cultivation , grow bag cultivation and selective crops (vegetable) are the new methods to overcome increased salinity of the soil and irregularity of rain fall.
- Drinking water scarcity is overcome through public distribution, commodification, rain harvesting, reuse etc.
- Shifting to backwater fishing when sea fishing becomes difficult

- Traditional knowledge related to the use of brackish water
- Traditional canal networks and engineering for agriculture development
- Water and wetland management institutions
 - Kulam, kinar and canals
 - moopan system, bunding, Padasekhara Samithi
 - Kalakkidutham
- Collective management of tides, salt, precipitation, siltation
- Many place names were evolved from forest (Chella Vanam), Mangroves (Kanda kadavu) and occupation related to natural spots like Anthi Kadavu (evening resting place of inland traveling traders), fish landing (Cheriya Kadavu), island names like Gothuruth and Thandonni thuruthu.

Ecological

- Ecological services in terms of mangroves and sacred groves were dominant in Chellanam and Vypin belt and it came down during the last 50 years.
- Marginalisation of these two are partly the result of hard engineering (sea wall, harbour etc.) and disintegration of joint family system.

Question 2

Do they qualify as analogs of current adaptation needs/ practices, and how (or if no, why not)?

Question 3

How did you come about these results/ observations?

- Archival works
- Secondary information
- Primary surveys
- Oral history

Question4

Are there other results/observations that you wish to share?