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Abstract

Traditional beliefs and local knowledge are widely used in the conservation and management of natural resources. In the Sundarbans, for example, communities offer prayers to *Bonbibi*, a forest goddess, before venturing into fishing or honey collection, believing that she protects them. However, the effectiveness of such practices has received limited attention in the Indian context. This case study from the Coringa mangroves in Andhra Pradesh examines how local mangrove deities and traditional beliefs contribute to mangrove conservation. The Coringa mangroves, the second-largest mangrove system after the Sundarbans, provide provisioning, regulating, and cultural services to the community. In terms of provisioning services, fish are a major resource, while regulating services include carbon sequestration and storm protection. The cultural services offered include spiritual expression, recreation, and tourism. Data were collected through key informant interviews ($n=5$), in-depth interviews ($n=2$), focus group discussions ($n=4$), and household surveys of fishers ($n=42$). We assessed the presence of mangrove deities, the extent of related beliefs, and conservation practices in the region. Among the 28 fishing villages located within the core area of the Coringa Wildlife Sanctuary, 20 villages, including Chinna Boddu Venkataya Palem, Kobbarichettu Peta, and Peddavalasai, hold strong beliefs in local deities such as *Boosamma*, *Gangaalamma thalli*, and *Satthamma thalli*. Most fishers interviewed offer prayers to these deities before fishing and celebrate an annual festival in their honor. We observed that trees associated with these deities are significantly larger compared to other trees in the area. Many fishers refrain from cutting mangroves around these sacred sites, which supports the conservation of mangroves in the Coringa region. These factors pose major challenges sacred sites, which supports the conservation of mangroves in the Coringa region. However, despite these practices, threats to the mangroves persist due to declining fish production, pollution from the Godavari River, urban sewage, climate change, and industrial development in Kakinada and Gadimoga. These factors pose major challenges to the mangroves' sustainability in the coming years.

Introduction

Mangroves in India are coastal ecosystems found along estuaries, rivers, and shorelines, providing vital ecological and economic benefits. India hosts some of the world's most extensive mangrove forests, including the Sundarbans, the largest mangrove system globally, and the Coringa mangroves, the second-largest in the country. These ecosystems serve as natural barriers against coastal erosion, cyclones, and storms, while supporting rich biodiversity, including fish, crabs, and migratory birds.

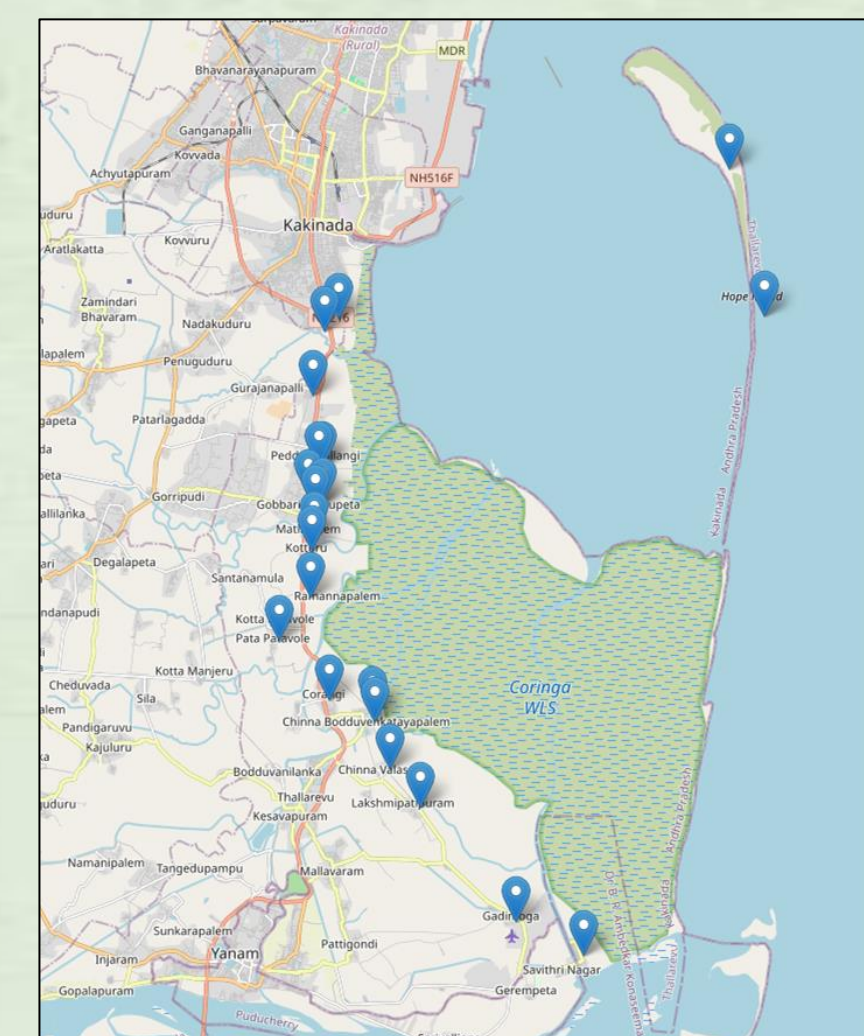


Traditional beliefs and local knowledge are widely used in the conservation and management of natural resources.

Mangroves also play a crucial role in carbon sequestration and sustain the livelihoods of coastal communities through fishing, aquaculture, ecotourism. Terrestrial sacred groves are areas of natural forest that are preserved and protected due to their cultural or religious significance. In many cultures, these groves are considered sacred, and local communities regard them as places of spiritual importance, often dedicated to deities or ancestral spirits. Similarly, in the coastal Sundarbans, communities offer prayers to Bonbibi, a forest goddess, before venturing into fishing or honey collection, believing that she protects them. However, the effectiveness of such practices has received limited attention in the Indian context. The present case study from the Coringa mangroves in Andhra Pradesh examines how local mangrove deities and traditional beliefs contribute to mangrove conservation.

Methodology

The Coringa mangroves are situated at the confluence of Godavari River with Bay of Bengal in the Kakinada district of Andhra Pradesh, lying between 16°59'23" N, 82°18'16" E and 16°34'57" N, 82°18'38" E. Coringa estuary encompasses the vast delta of Godavari River along with other coastal habitats such as mangroves, river channel, floodplains, natural levees, bay, mudflats, tidal creeks, sand spits, beaches etc. The presence of a 17 km-long spit, called Hope Island provides natural shelter to the coast and city of Kakinada and has allowed the establishment of a major fishing harbour and the Kakinada Port. An interview schedule was prepared, covering thematic areas such as the presence of mangrove deities in the villages, the extent of related beliefs, and conservation practices in the region.



Data were collected through key informant interviews ($n=5$), in-depth interviews ($n=2$), focus group discussions ($n=4$), and household surveys of fishers ($n=42$) across 28 villages in the Coringa mangrove ecosystem. The collected data were analyzed using thematic analysis, and the results are presented.

Result

The Coringa mangroves, recognized as the second-largest mangrove ecosystem after the Sundarbans, play a crucial role by offering provisioning, regulating, and cultural benefits to local communities. As a source of provisioning services, they support key fisheries including mullet, shrimp, and mud crab. In terms of regulating functions, the mangroves contribute to carbon storage and provide protection against storms. Culturally, they serve as sites for spiritual activities, recreation, and tourism.



Mullet and shrimps caught in the Coringa mangrove region



Sacred mangrove tree in Peddavalasai fishing village

The major reason for fishers offering prayers to mangrove deities:

- Fishing is a dangerous occupation, and to seek protection from wild animals, fishers offer prayers to the mangrove deities.
- Among the 28 fishing villages located within the core area of the Coringa Wildlife Sanctuary, 20 villages, including Chinna Boddu Venkataya Palem, Kobbarichettu Peta, and Peddavalasai, hold strong beliefs in local deities such as *Boosamma*, *Gangaalamma thalli*, and *Satthamma thalli*.



Mud crab (*Scylla serrata*) caught in the mangrove region

- Most fishers interviewed offer prayers to these deities before setting out to fish and celebrate an annual festival in their honor. We observed that trees associated with these deities are significantly larger compared to other trees in the area.
- Many fishers refrain from cutting mangroves around these sacred sites, contributing to the conservation of mangroves in the Coringa region.

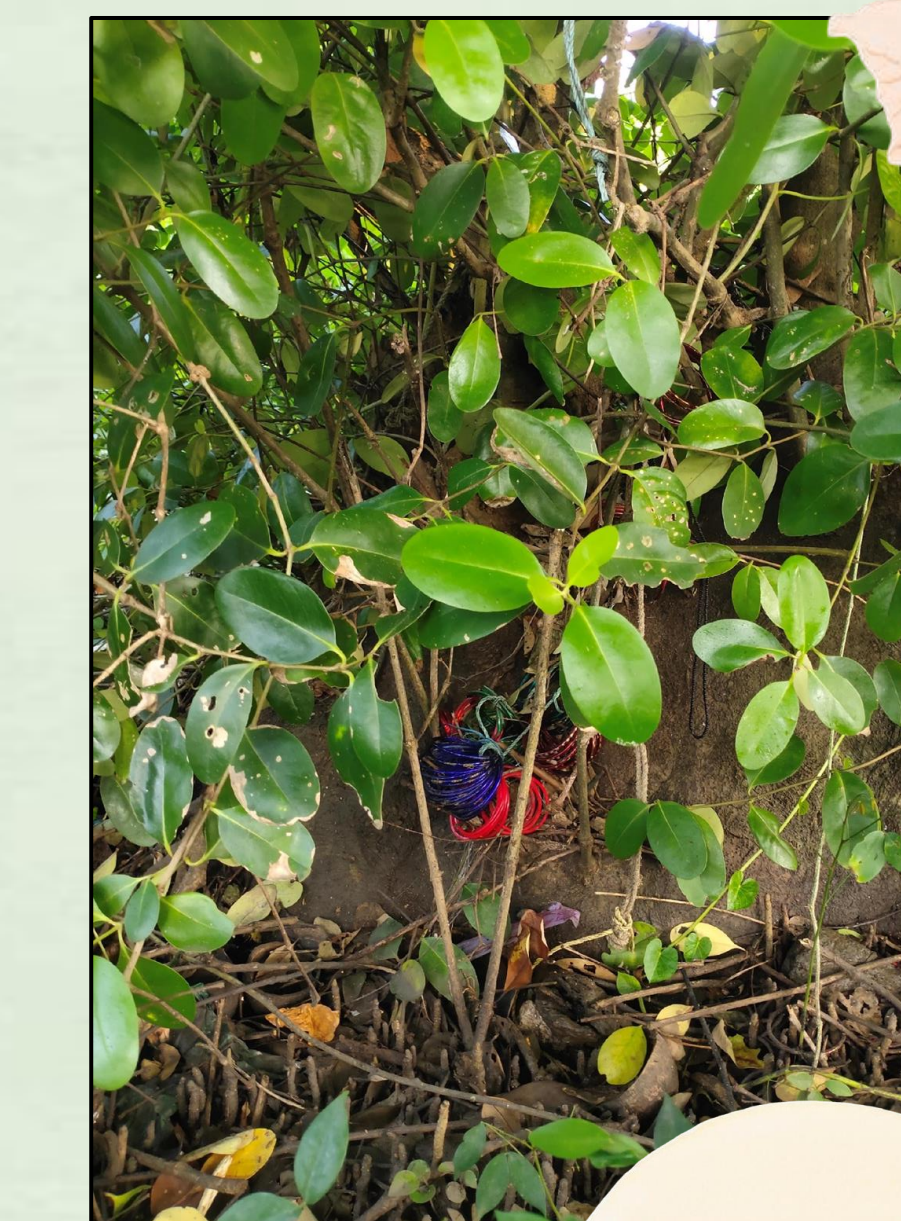
Wider impacts of the work

Including the Traditional Ecological Knowledge (TEK) of fishers in current mangrove conservation efforts is lacking. Fishers, who interact with the ecosystem daily and depend on it for their livelihoods, possess valuable ecological insights. Establishing a "Fishers as Friends" approach can support continuous ecosystem monitoring through emerging citizen science initiatives.

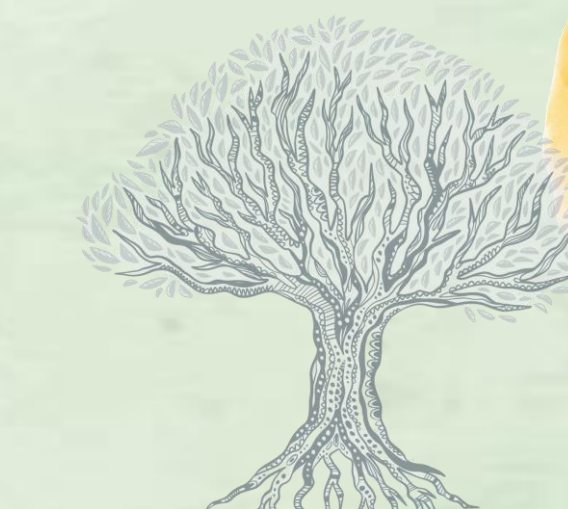
Co-management is another essential component of the Ecosystem Approach to Fisheries Management (EAFM), where all stakeholders in the management region participate and contribute to decision-making for the sustainable development of resources and the improvement of fishers' livelihoods.

Conclusion

In conclusion, the Coringa mangroves provide vital ecological, economic, and cultural services, particularly supporting fisheries and protecting against natural hazards.



Fisherwomen tie bangles to mangrove trees for a prosperous life



Local fishers' traditional practices, such as offering prayers to mangrove deities, contribute to the conservation of these ecosystems. Despite this, integrating Traditional Ecological Knowledge (TEK) into formal conservation efforts is still limited. Adopting a "Make Fishers as Friends" approach and promoting co-management through the Ecosystem Approach to Fisheries Management (EAFM) can enhance sustainable resource management and improve fishers' livelihoods. The cooperation of all stakeholders is essential for the long-term preservation of the Coringa mangrove ecosystem.

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Acknowledgement

This study is conducted as part of the ongoing major project "Economic Assessment of Ecosystem-based Services (EbS) of Critical Habitats along the East Coast of India for Eco-restoration Services," funded by NCCR. The authors express their gratitude to NCCR for providing financial support through the project. Special appreciation goes to the fishers from the 28 fishing villages around the Coringa mangroves for their cooperation. The authors also extend heartfelt thanks to Mr. Pavithran for his assistance in poster preparation.

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I work as a Project Scientist at BOBP-IGO, a regional fisheries body established in 2003 to support small-scale fishers in the Bay of Bengal. Member countries include Bangladesh, India, Maldives, and Sri Lanka, with Indonesia, Malaysia, Myanmar, and Thailand as cooperating non-contracting parties.

