

ISS+ICAR-CMFRI

Institute for Social Sciences

New Delhi

and

ICAR-Central Marine Fisheries Research Institute,

Kochi

Collaborative Research under the

Vision Viksit Bharat@2047

Calls for Research Papers on the following
Broad Theme

**Mitigating climate change to the blue ecosystems
of the Union Territory of Lakshadweep
for a Two-Day Seminar**

**At ICAR-CMFRI, Kochi
On 24 and 25 April 2025**





Concept Note

Mitigating climate change to the blue ecosystems of the Union Territory of Lakshadweep (UTL) in Bharat is a challenging objective of the Indian society. A unique archipelagic landscape with a sizable population has come to be in danger of getting submerged under the sea, due to rise of sea water level at an alarming rate of 0.4 to 0.9 mm per year. Lakshadweep is a small archipelago with 36 small islands and atolls covering 32 sq.km, (28 sq.km for revenue purposes), on the emerald Arabian Sea. The islands and atolls are scattered between 8°00' N and 12°30' N Latitude and 71°00' E and 74°00' E Longitude. Situated on the Lakshadweep-Chagos archipelago, the islands are magnificent for rich but very fragile coral ecosystem. Wide varieties of corals with magnificent natural colours, form a symbiotic relationship with tiny, microscopic algae known as *Symbiodiniaceae*, or colloquially known as '*Zooxanthellae*' (James, 2011). The waters around this spectacular islands' diverse ecosystems, is alarmingly rising causing coastal soil erosion and land loss (MoEFCC, 2012). The smaller islands such as Amini and Chetlat face the risk of losing 60 to 80 percent of their shorelines. Larger islands such as Minicoy and Kavaratti (Capital) are likely to lose 60 percent of their coastal areas in near future.

Several human activities contribute to this crisis, including CO₂ and pollutant emissions from large cargo ships, unsustainable fishing practices, and unregulated tourism. These activities exacerbate global warming and harm marine ecosystems, particularly the coral reefs and seagrass beds essential for biodiversity. All directly bleach the corals, especially the microscopic algae known as *Symbiodiniaceae*. Occasional rising of waves also contributes to the loss of coastal soil (James, 2011, Koya, 2019). The seagrass and mangrove ecosystems, which are highly productive nearshore shallow marine and estuarine habitats, and support biodiversity by providing shelter, food, and nursery grounds (De Groot et al., 2002; Jiang et al., 2020), play crucial roles in preventing soil erosion and increasing the oxygen levels in the water column (Chen et al., 2016; Tamondong et al., 2021). Additionally, these ecosystems are vital for local fisheries and serve as habitats for a wide variety of invertebrates, fish, and endangered species such as sea turtles and sea cucumbers.

The current challenges can best be managed by scientific intervention and social outreach. Despite their ecological importance, the seagrass and mangrove ecosystems in Lakshadweep require earnest attention from the scientific community and environmentalists. The extent and density of seagrasses and mangroves have significantly declined across most islands in Lakshadweep, due to the above stresses, including sediment and nutrient runoff. (Sebastian et al., 2023).

Considering above, this seminar prospects to be an important meeting point of scholars from Environmental Sciences, Fisheries and Ecosystem Protection, Coastal Ecosystem Monitors, Blue economy industries, NGOs with traditional knowledge about disaster management in coastal areas, and Environmental Engineers engaged in science-driven geopolitical, political economic and engineering studies of archipelagic landscapes in India and Indo-Pacific region.

This Seminar also aims to assess the measures for protection of the species diversity and distribution of seagrass, seaweeds and mangroves in Minicoy islands, and create demonstrable modules. The seminar also targets papers on the coastal belt in the Minicoy Island where seagrass and mangroves plantation can be visualised. It also aims to identify the population and sample size that will reap the co-benefits from the ecosystems management studies and possible efforts thereafter by the state. The study should ideate the epoch-making objectives that would glorify India's development economy by 2047. A few of these objectives are:

- To analyse the challenges faced by stakeholders in adopting and integrating climate-resilient technologies for ecosystem conservation, disaster mitigation, and sustainable development.
- To identify and assess disaster-related challenges faced by coastal communities, including flooding, land erosion, and the degradation of blue ecosystems, and evaluate sustainable solutions.

To achieve these objectives, the seminar calls for science-based research papers with opportunities and possibilities of Viksit Bharat in areas under focus below by 2047 on the following sub-themes:

(a) Management of the Ecosystems and Disaster in the Lakshadweep Coasts

- Disaster Management against Land Loss, Floods, Loss of Diversities
- Protection of Coral Columns and Seagrass Habitats
- Warming of Sea Water

(b) Political Economy and Ecosystems Interface

- Eco-tourism,
- Cottage and Tertiary Economic Scope
- Looking for New Horizons

(c) Social Contract and Ownership of the Coastal Ecology

- Interface of Federal Outreach and Ownership of Ecosystems
- Developmental Social Contract
- Livelihood and Empowerment Modules

(d) Connectivity and Scope of Co-benefits

- Linking the Distant
- Cleanliness and Drinking Water



The scholars are requested to submit Abstracts within 300 words in Times New Roman font in 12 points latest by 25 January 2025 to smahalanobis1948@gmail.com.

The Full Papers should be within 4000 words with end notes including References and/or Bibliography in New Times Roman font. Headline in 14 points, with the body text and sub-heads in 12 points style.

Important Dates:

Submission of Abstracts: 25 January 2025

Notification of the Selected of Abstracts: 05 February 2025

Date of Seminar: 24 & 25 April 2025

Submission of the Full Papers with PPTs: 14 April 2025

The Seminar will be organised in Hybrid Mode.

There is no Registration Fee. No TA and DA will be paid for presenting in the Seminar and attending it. Only local hospitality of Morning Tea & Breakfast, Lunch, and High Tea will be provided by the Seminar Committee on the Seminar days.

There will be efforts to accommodate the Presenters of selected papers, however, the availability is limited. In case of non-availability of boarding, the presenters would be required to make arrangements for their lodging in Kochi.

The Selected Papers will be published in a Compendium by a reputed publisher, with ISBN number, by the end of December 2025.

