

योजना तथा वास्तुकला विद्यालय, विजयवाड़ा
School of Planning and Architecture, Vijayawada
An Institute of National Importance, Ministry of Education Gov. of India

School of Planning and Architecture Vijayawada

DEPARTMENT OF PLANNING

STUDIO BRIEF - MEPM III Semester II Year (JUL 2024 to DEC 2024)

SUBJECT NAME: REGIONAL ENVIRONMENTAL PLANNING STUDIO (MEPM211)

Integrated Regional Development & Environmental Plan: Thoothukudi District, Tamil Nadu, India 2047

Studio Faculty:

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Dept of Planning, SPA Vijayawada

INTRODUCTION

The students of the second year of the “Masters in Environmental Planning and Management (MEPM)” program are embarking on a significant planning studio project. This initiative aims to apply advanced environmental planning techniques to conduct natural resource baseline studies, assess environmental conditions, and evaluate the impacts of human activities at a regional scale. The overarching goal is to develop comprehensive planning and development strategies for Thoothukudi District in Tamil Nadu. The output of this MEPM batch will contribute to the “Integrated Regional Environment Development Plan for Thoothukudi District 2047.” The focus of the MEPM batch will be to address specific aspects of environmental management, natural resource integration with local livelihoods, and sustainable development.

CONTEXTUAL SETTING AND CONCERN

Area: 4,707 Sq. Kms

Population: 17,50,176

Thoothukudi District, situated in the southern part of Tamil Nadu, was officially formed on the 20th. October 1986. It is located along the south eastern coast of India and spans from 8° 15' to 9° 15' North Latitude and 77° 00' to 78° 15' East Longitude. Thoothukudi, also known as Tuticorin, is bounded by the Bay of Bengal to the east, Virudhunagar and Tirunelveli districts to the north, and the southern border with Kanyakumari district.

The district is a significant coastal region with a blend of urban and rural landscapes. It is having an important port city which is also a major industrial and commercial hub. The district features a diverse range of environmental elements, including coastal zones, arid and semi-arid lands, and a unique marine ecosystem.



Map 1. Location map of Thoothukudi District



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The region's economy relies heavily on industries such as salt production, fishing, and port activities. Additionally, agriculture and horticulture play a crucial role in the livelihoods of local communities.

Thoothukudi District falls under the administrative jurisdiction of Tamil Nadu, which is divided into districts for administrative purposes. Each district is subdivided into taluks, and further into villages and urban local bodies. The district system is coordinated to manage administration, development, and law enforcement at various levels. For Thoothukudi, the administrative setup includes multiple taluks, panchayats, and municipalities that contribute to its governance and development.

The district experiences a tropical climate with hot and dry conditions prevailing for most of the year. The average annual rainfall is around 710 mm, with variability influenced by the northeast and southwest monsoons. Coastal areas are subject to high humidity, while inland regions experience more pronounced temperature variations. The district's natural landscape includes coastal areas, arid plains, and scattered hills, which impact its environmental and developmental dynamics. Some of the environmental focuses include need for reduction in industrial pollution, protection and restoration of mangroves, coral reefs, and other coastal ecosystems, and ensuring sustainable use of natural resources such as water and fisheries.

APPROACH OF STUDY

The MEPM students will undertake a detailed environmental analysis of Thoothukudi District, focusing on the following components and sectors:

- i. **Land Use and Land Cover** - Assessing current land use patterns, land cover changes, and their impact on biodiversity.
- ii. **Settlement Hierarchy** - Analyzing urban-rural settlement patterns and their implications for infrastructure and services.
- iii. **Water Resources** - Evaluating the availability, quality, and management of water resources, including groundwater and surface water.
- iv. **Infrastructure and Connectivity** - Examining transportation, communication networks, and infrastructure development.
- v. **Agriculture, Fisheries, and Animal Husbandry** - Assessing the performance, challenges, and opportunities in these sectors.
- vi. **Disaster Preparedness** - Analyzing vulnerability to natural disasters and formulating preparedness and response strategies.
- vii. **Industries (Industry, MSME, Cottage, and Household)** - Analyzing industrial activities and their environmental impacts.
- viii. **Heritage and Eco-Tourism** - Identifying potential heritage sites and eco-tourism opportunities.
- ix. **Coastal Resilience** - Identifying and integrating Indian Knowledge System with coastal zone management.

Detailed assessment methodologies will include:

- **Land Suitability Analysis** using GIS-based composite weighted indices.
- **Biodiversity and Eco-Sensitivity Zoning** for conservation planning.



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- **Industrial Performance Analysis** through location quotient, trend, and shift-share analysis.
- **Agricultural Performance Analysis** using regression tools and fertility indices.
- **Water Budgeting** through watershed analysis, stream order analysis, and groundwater recharge capacity.
- **Tourism Carrying Capacity** and circuit potential assessments.
- **Risk and Disaster Vulnerability Zoning** to enhance disaster management.
- **Coastal Sensitivity Analysis** to address coastal erosion and habitat protection.

Based on the analysis, the project will develop strategic proposals related to land use, water management, infrastructure, agriculture, industry, coastal management, disaster preparedness, and eco-tourism. These strategies will include detailed action plans, costing, and phased implementation schedules for the period leading up to 2047.

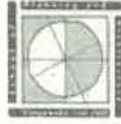
LEARNING OUTCOME

The primary learning outcome of this off-site research is to enhance students' understanding of integrated regional planning with a strong focus on environmental sustainability and capacity building. Thoothukudi's coastline is part of the Gulf of Mannar Biosphere Reserve, the studio aims to integrate coastal zone management practices that balance economic activities. With community participation and community engagement in the region and identifying traditional knowledge systems for disaster resilience and livelihood planning; students will gain expertise in qualitative and quantitative analysis techniques, scenario building, and documentation within an integrated environmental management framework. This project will prepare students to address real-world environmental challenges through comprehensive and innovative planning strategies

PROPOSED EXECUTING PLAN FOR STUDIO (AS FOLLOWED)

Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Unit and Assignment
Week 1	Literature and Document Review on Selected Themes	
Week 2	Shortlisting of Case Studies – Identification of Problem statement and Regional Context	1 st Review on Reg. Planning Theories, Act and other relevant documents (Marked)
		(Case Study – Desk Research)
		(Case Study - Mapping)
Week 3	Preparing inception report – Identification of vision, objectives, tasks, data checklist. Preparation of Base Map and Secondary Data layers:	Workshop on Vision Development
		2 nd Review on Case Specific Vision, Concept and Timeline (Marked)
		(Case Study – Enlisting of Potential Analysis and Maps)
Week 4	Survey format preparation, Mock of Field data collection.	3 rd Review on Thematic Objectives, Maps and Data Requirements (Marked)
		REPORT SUBMISSION – I (Inception Report)

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Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Unit and Assignment
	surveying, networking and asset allocation.	Assignment 1 (All previous reviews and revised report) – Delivery of Survey Regime & formats
Week 6-7	Field Trip	(As per Survey Design)
Week 8	Data Compilation and Preliminary Analysis – Submission of Gap Assessment Report (Phase I – Baseline Assessment)	Presentation on Data Management Technique and Data Bank
		Segregation of Data as per Sectors/Themes
		Representation of Information and Key Takeaways in various identified sectors/themes
Week 9	Mid- Semester Assessment week	REVIEW (Outcome Report – 1: Baseline Assessment) (Marked)
Week 10	Proposed One/two-day Workshop	on Vision, Methods and Way forward
Week 11	Analysis – Detailed Analysis and Scenario Building	Introduction to Assignment 2 and its components
Week 12	Detailed Analysis and Scenario Building	Assignment 2 Part A (Outcome Report 2 – Sectoral Projections & Analysis) (Marked)
Week 13	Detailed assessment with Preliminary Proposal	Assignment 2 Part B (Outcome Report 3 – Thematic Proposals)
		Special Lecture
Week 14	Internal Review & Draft Report	Submission of Outcome Report – 2 Part A & B Projections and Thematic proposals (Marked)
Week 15	Strategy Development and Proposal Detailing (detailed Sectoral Level Proposals)	Assignment 2 Part C: (Outcome Report 4 – Detailed Proposals) (Marked)
	Amalgamation of all sectoral proposals at the regional level.	
Week 16	Submission of Complete Report and Review	Assignment 2 (Part A+B+C): Internal Review and Complete Report Submission (Marked)

Suggested Readings:

1. Daniels T (2012). Environmental Planning Handbook: For Sustainable communities and Region. APA Planners Press. NY.
2. Government of India (Ministry of Urban Development and Town and Country Planning Organisation) (2015). Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines. Vol. 1. Ministry of Urban Development. New Delhi.
3. Ministry of Urban Development (2012). Handbook of Service Level Benchmarks. Govt of India. Delhi.
4. Padt (2007). Green Planning: An Institutional Analysis of Regional Environmental Planning in the Netherlands. Taylor & Francis. NY.

Note:

1. Any other closed holidays as declared by SPAV shall supersede the above studio progression.
2. Assessment Sessions may be re-scheduled, with prior intimation.
3. Reading lists provided is not exhaustive and is subject to addition – students are advised to follow progression of class to keep abreast of the new reading lists, if any.

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