

Coastal and Marine Biodiversity and Protected Area Management

for field-level managers



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of:



Federal Ministry
for the Environment, Nature Conservation,
Building and Nuclear Safety

of the Federal Republic of Germany



Capacity Development for Sustainable and Effective Management of Coastal and Marine Protected Areas (MPAs)

In the coastal areas, a major determinant of the well-being and livelihood security is the availability of marine and coastal biodiversity resources and access to these resources. Consequences of the biodiversity loss and resulting loss of ecosystem services, therefore, have far reaching impacts on livelihoods and the overall well-being of coastal communities.

One of the most effective means of protecting marine and coastal biodiversity is through the establishment and management of marine and coastal protected areas (MPAs) and community-involvement in managing the coastal and marine ecosystems.

A holistic capacity development system for the MPA managers, addressing their knowledge, skills and values, is key to developing approaches for sustainable and effective management of coastal and marine biodiversity.

Capacity development is the process of developing capacities of individuals and shaping joint learning processes such that the individuals are enabled to achieve sustainable results within their own system of reference.

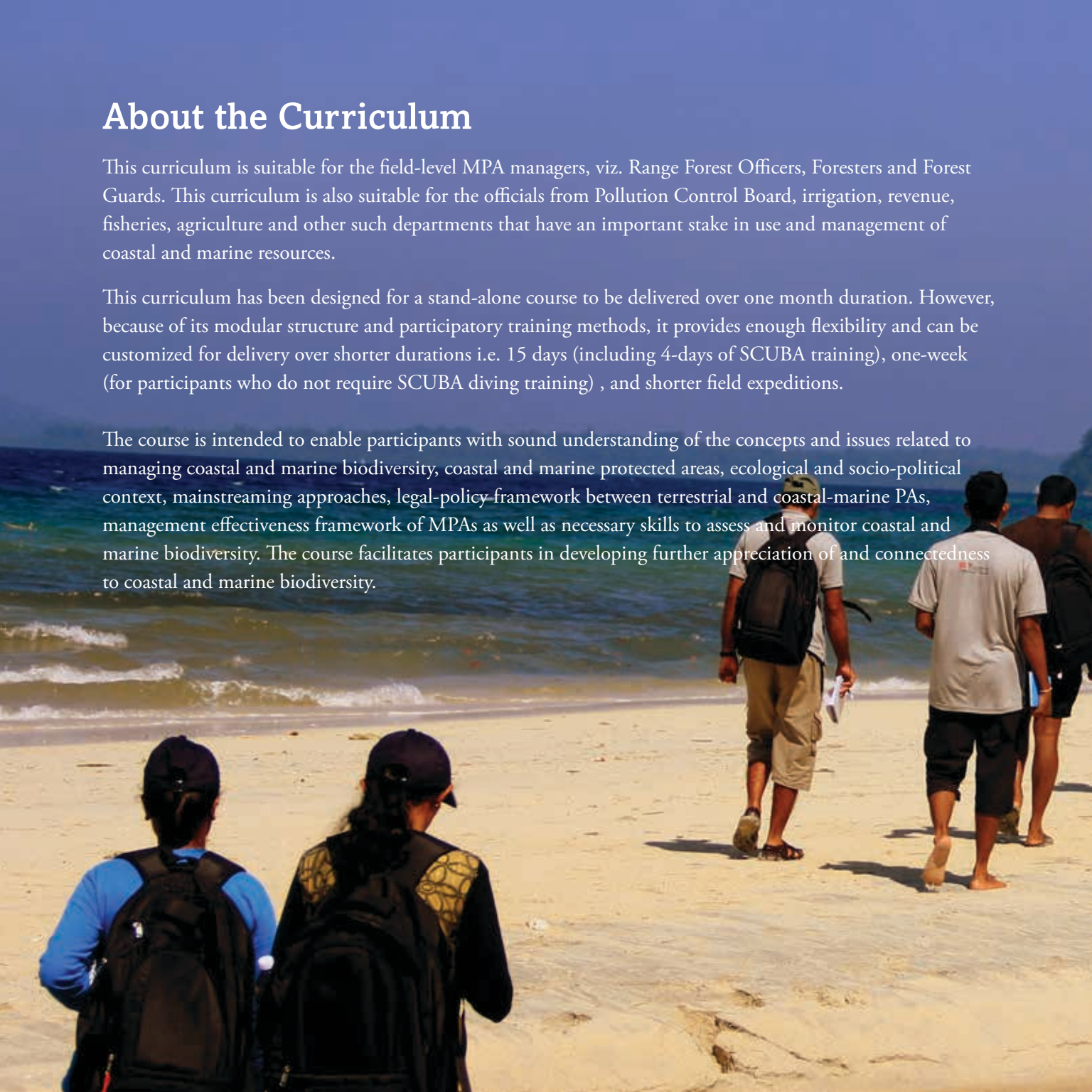
Capacity development facilitates change among people, in three dimensions: knowledge, skills and values/attitudes. A combination of traditional and innovative capacity development measures is required to achieve the objective.

About the Curriculum

This curriculum is suitable for the field-level MPA managers, viz. Range Forest Officers, Foresters and Forest Guards. This curriculum is also suitable for the officials from Pollution Control Board, irrigation, revenue, fisheries, agriculture and other such departments that have an important stake in use and management of coastal and marine resources.

This curriculum has been designed for a stand-alone course to be delivered over one month duration. However, because of its modular structure and participatory training methods, it provides enough flexibility and can be customized for delivery over shorter durations i.e. 15 days (including 4-days of SCUBA training), one-week (for participants who do not require SCUBA diving training) , and shorter field expeditions.

The course is intended to enable participants with sound understanding of the concepts and issues related to managing coastal and marine biodiversity, coastal and marine protected areas, ecological and socio-political context, mainstreaming approaches, legal-policy-framework between terrestrial and coastal-marine PAs, management effectiveness framework of MPAs as well as necessary skills to assess and monitor coastal and marine biodiversity. The course facilitates participants in developing further appreciation of and connectedness to coastal and marine biodiversity.



Learning Outcomes of the Course:

By the end of the course, the participants will be able to:

- outline concepts and issues related to managing coastal and marine biodiversity, and demonstrate the types and relevance of different categories of MPAs in different scenarios
- differentiate clearly, between the ecological and socio-political context, conservation approaches and legal-policy framework between terrestrial and coastal-marine PAs.
- conduct assessment and monitoring of coastal and marine habitats and species and prepare field reports
- develop, under supervision, operational plan for MPAs based on management effectiveness guidelines
- be open to acquiring more knowledge on coastal and marine biodiversity relevant issues



Training Approach and Methodology

It is a modularised curriculum, where modules are delivered using different training methods over required time periods. The modularised structure provides flexibility to adapt the contents, methods and duration of different topics based on the training needs of the participants.

The curriculum uses a mix of field-based and classroom training sessions, in almost equal proportions, to facilitate the participants in applying the information from class-room sessions into the field conditions, and to understand the field-level phenomena and actions in a broader development context.

A unique feature of the curriculum is to focus on the aspects of appreciation of and connectedness to nature, for which special sessions are organised during the course.

For class-room sessions as well as field-exercise, the curriculum uses participatory methods of training. A participatory training is different from the conventional way of training in that, in a participatory training, learning occurs through active involvement of the trainees and it is they who develop the answers. Following are some examples of such methods:

- 1 Group work and presentations
- 2 Dialogue and brainstorming
- 3 Knowledge Café
- 4 Role play
- 5 Simulation (case study simulation/ video simulation)
- 6 Online games and Mind Maps
- 7 Case Studies
- 8 Fish Bowl
- 9 Icebreakers, energisers, and team-building exercises
- 10 Nature walks and contemplation
- 11 Under-water and coastal surveys
- 12 Field excursions





Competencies-based curriculum for the field-level managers

The curriculum uses a competencies development approach with a strong emphasis on field-based exercises using participatory methods of training and learning. The training material is developed by a competent team of experts drawn from forest, fisheries and media sectors, bringing in a truly cross-sector perspective to the whole process of capacity development.

In order to assess the competencies required for specific job profiles, a capacity needs assessment (CNA) study was undertaken by the CMPA project. The results of this study formed the basis for developing a competencies-based curriculum for capacity development measures on coastal and marine biodiversity and MPA management for forest, fisheries and media sector professionals.

Competencies-based curriculum is a way of approaching professional training that places primary emphasis on facilitating the participants in further developing their competencies, which are required to enable them in performing their jobs more efficiently and effectively. It aims at preparing people more effectively for real workplaces.



An overview of the modularized course

MODULE 1

An Introduction to Coastal and Marine Biodiversity and Ecosystem Services

This module provides the foundation of the course by providing the basic concepts of biodiversity at the genetic, species and habitat levels, focussing on the examples and peculiarities of the coastal and marine ecosystems. An overview of the concept of the ecosystem services and examples of the four types of ecosystem services- provisioning, regulatory, supportive and cultural, are followed by a detailed description of the key coastal and marine habitats and species. The module ends with a discussion on the key differences between the terrestrial and coastal-marine ecosystems.

Learning Outcomes

After completing this module, the participants are able to:

- explain the term 'Biodiversity' and describe different aspects of the concept;
- illustrate different types of coastal and marine habitats and species
- outline different types of ecosystem services arising out of coastal and marine biodiversity;
- understand the ecological basis for conserving coastal and marine biodiversity;
- express the differences between terrestrial and coastal ecosystems with clear examples;
- explain the key differences between landscapes and seascapes; and appreciate the difference in socioeconomic and political contexts of terrestrial and coastal-marine ecosystems and their management.

Coastal and marine biodiversity and ecosystems services in the overall environment and development context

This module sets the foundation of the issues of coastal and marine conservation in the overall development context and facilitates participants in understanding the overall development agenda via Global Sustainable Development Goals, the concepts of sustainability, of sustainable livelihoods and its interlinkages with the ecosystem services. The module takes a deeper look into the economic values, and threats to coastal and marine biodiversity and focuses in detail on the climate change and disaster aspects and their interrelationship with the coastal and marine biodiversity conservation. To make the learning easy for participants, this module comprises two very interesting training methods—ecological footprint game, and a simulation game on a fictitious country—Bakul.

Learning Outcomes

After completing this module, the participants are able to:

- appreciate the concept of sustainability
- appreciate the role that biodiversity elements play in providing livelihoods to the coastal communities
- Understand the value of ecosystems and different elements of it, and outline the economic benefits that coastal and marine biodiversity provides to different sectors
- summarise the threats that different coastal and marine habitats and species face
- demonstrate the role of coastal and marine biodiversity in climate change adaptation and disaster risk reduction
- critically analyse the synergies and trade-offs between climate change adaptation, disaster risk reduction, coastal livelihoods and coastal marine biodiversity conservation.



MODULE 3

Mainstreaming coastal and marine biodiversity into overall development and environmental planning

This module provides the conceptual background and introduces the tool for mainstreaming biodiversity. To ensure that biodiversity-related issues and concerns become a part of the larger development planning process in the country, there is a need to incorporate it into policies, strategies and action plan. There is also a need to use science-based tools to understand the impact that projects can have on the environment and ensure that spatial planning incorporates measures for conservation of coastal and marine biodiversity.

Learning Outcomes

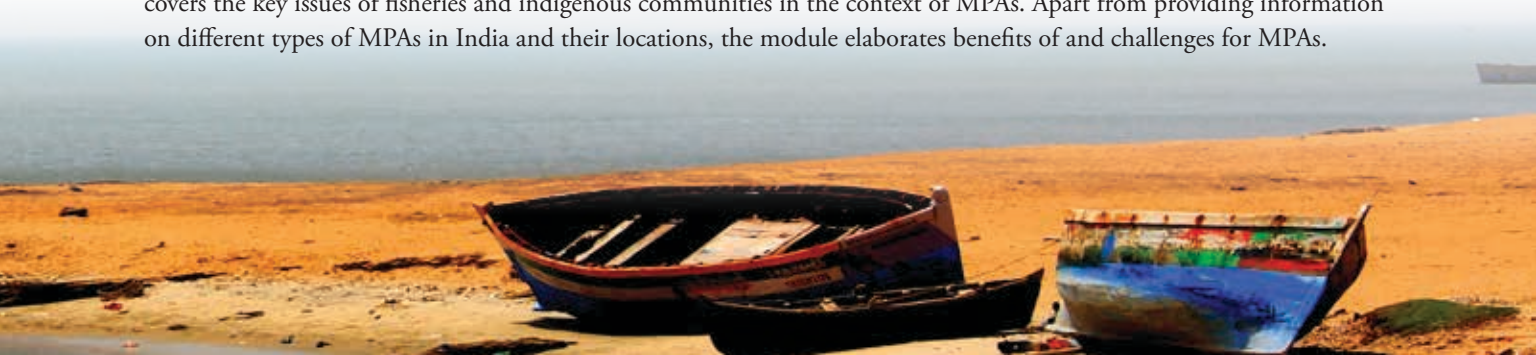
After completing this module, the participants are able to:

- appraise the need for mainstreaming biodiversity in different sectors and development programmes
- demonstrate the use of tools such as Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA) and Marine Spatial Planning (MSP)
- critically analyse existing efforts and impacts of mainstreaming biodiversity concerns into sectoral and cross-sectoral strategies, plans and programmes
- prioritize sectors, based on their understanding, where mainstreaming of coastal and marine biodiversity is of utmost importance.

MODULE 4

Coastal and Marine Protected Areas and sustainable fisheries management

This module provides much needed information on the basics of fisheries management, principles and practices of sustainable fisheries management in and around marine protected areas, and on the marine protected areas (MPAs). The modules provides insights into the differences between them and terrestrial protected areas, the categories and types of MPAs and their management systems and an overview of the elements of sustainable fisheries management. This module covers the key issues of fisheries and indigenous communities in the context of MPAs. Apart from providing information on different types of MPAs in India and their locations, the module elaborates benefits of and challenges for MPAs.



Learning Outcomes

After completing this module, the participants are able to:

- explain the term 'Protected Area' and describe different types of natural protected areas based on their management and resources uses
- differentiate between the key characteristics and factors governing a terrestrial protected area and an MPA
- describe different types of management models for MPAs and challenges associated with each
- outline the key principles of sustainable fisheries management
- explain the difference between small-scale and commercial fisheries and their respective relevance to coastal and marine biodiversity
- appreciate the intricate relationship of fishing and biodiversity conservation
- appreciate the role of sustainable fisheries in ensuring effective conservation of coastal and marine biodiversity

MODULE 5

Governance, law and policies for managing coastal and marine ecosystems, biodiversity and protected areas

This module gives an outline and a brief history of the diverse governance, legal and policy frameworks for managing coastal and marine ecosystems. The governance, policies and laws have been presented in two sections. The first section deals with global conventions and guidelines that provide a framework to the maritime countries to draft national policies and legislation for conservation and management of coastal and marine habitats and species. The second section provides an overview of the major policies, law, rules and guidelines in India



Learning Outcomes

After completing this module, the participants are able to:

- outline key International conventions and treaties relevant to biodiversity- in general, and coastal and marine biodiversity- in particular
- outline the laws and policies relevant to coastal and marine biodiversity in India
- explain- in detail- the legal and policy framework in India governing the MPAs
- appreciate the importance of identifying the appropriate legal regime for managing MPAs

MODULE 6

Assessment and monitoring of coastal and marine biodiversity and relevant issues

This module has been designed to provide the required information on different coastal and marine ecosystems, critical marine habitats, their importance and assessment. Participants identify species found in coastal and marine ecosystems, and learn and practice assessment methodologies of different habitats and species. This module is delivered through different learning techniques, such as class room sessions to understand the assessment frameworks, hands-on assessment practice in contained pool as well as open-water conditions, exposure visits to beach, intertidal and mangrove ecosystems, and fisheries areas to understand the relevance of assessment and monitoring exercises.

Learning Outcomes

After completing this module, the participants are able to:

- identify key coastal and marine ecosystems and species in India
- describe key assessment and monitoring methods used for coastal and marine habitats and species
- appreciate the magnitude and distribution of coastal and marine biodiversity- a global overview, in India, and an in-depth overview of their State
- conduct under-water / coastal surveys to monitor marine and coastal habitat features and species
- report based on the data collected



MODULE 7

Effective management planning of coastal and marine protected areas

This module provides an overview of the management experiences in terrestrial as well as marine environments. A description of the elements of management plan and guidelines for effective protected area management along with the key indicators form the major part of the learning from this module. Case studies help participants in applying concepts and guidelines to the real life cases.

Learning Outcomes

After completing this module, the participants are able to:

- outline the key elements of a MPA management plan
- describe in detail the steps involved in developing a MPA management plan
- define management effectiveness with examples
- appreciate management effectiveness in the ecological, social and economic context
- develop operational plan for MPA management based on the principles of management effectiveness
- conduct – in teams and under supervision- management effectiveness evaluation



MODULE 8

Communicating Coastal and Marine Biodiversity Conservation and management issues

This module will help managers of marine and coastal protected areas (MPAs) understand how media looks at coastal and marine conservation issues. Since conservation is not in the media priority and MPAs come into news only when an event happens, the module will help managers to understand how to get journalist attention on conservation using the news pegs. The module will introduce the different tools for media relations, their strengths and limitations. It will also discuss how to use these tools during a crisis communication situation.

Learning Outcomes

After completing this module, the participants are able to:

- communicate their ideas and concerns on technical issues on coastal and marine biodiversity and MPA management in simple language
- choose the right communication methods to communicate with different sectors and stakeholders
- communicate effectively with Media professionals, and through them contribute to enhancing public awareness on coastal and marine issues





The Training Resource material, was released by Sh. Hem Pande, Special Secretary, Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India on October 19, 2015 at a global event of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) - “UN-IPBES Capacity Building Forum Meeting” in Dehradun, India.

The training material is developed in English, Gujarati and Marathi.

Partners:

The *Wildlife Institute of India (WII)* has a mandate to train Indian Forest Service officers, State Forest Service officers, as well as other key stakeholders such as the Coast Guard and Customs etc., and has recently initiated one-week refresher course exclusively addressing issues related to integrated management of coastal and marine biodiversity targeting senior forest officials.

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