Handbook on Coastal and Marine People's Biodiversity Register
PREPARED BY

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ABBREVIATION

BDA: Biological Diversity Act
BMC: Biodiversity Management Committee
LSG: Local Self Government
NBA: National Biodiversity Authority
nm: nautical miles
KILA: Kerala Institute of Local Administration
KSBB: Kerala State Biodiversity Board
PBR: Peoples Biodiversity Register
SBB: State Biodiversity Board
INTRODUCTION

Biological Diversity Act (BDA) is a law passed by the Parliament of India in 2002 for governing India’s biological diversity based on certain norms, rules and regulations. The Act prescribes that biodiversity in India must be managed keeping three objectives in mind.

1. conservation
2. sustainable use and
3. sharing of benefits arising from use of the biodiversity

This central legislation is also unique as it gives definite role for Local Self Governments (LSG) in governance. Section 41 of BDA empowers panchayat/municipality/corporation to nominate a committee known as the Biodiversity Management Committee (BMC) in its area. The primary function of BMC is to document local biodiversity in a register called the People’s Biodiversity Register (PBR). They also have to record knowledge relating to biological diversity. One of the types of biodiversity to be documented is the coastal and marinebiodiversity. Along with that, the knowledge of fishing and other coastal communities relating to sea (‘kadalarivu’) is to be documented.

This is a handbook for BMC members and facilitators who are engaged in preparing or updating people’s biodiversity registers in coastal LSGs. The handbook is prepared with a focus on Kerala. The state of Kerala has constituted BMCs in all local bodies including the 112 coastal panchayat/municipalities/corporations.

Kerala is one of the states in India with rich coastal and marine biodiversity and related traditional knowledge. Kerala has a coastline of 590km stretching from Kasargod to Trivandrum. The coastal, wetland and marine biodiversity is important not only due to its rich biodiversity but also due to its significance for supporting local livelihoods and business.

The handbook aims at effectively undertaking a participatory and inclusive preparation of people’s biodiversity register with due representation of coastal and marine biodiversity and relevant communities.
The booklet discusses things that the LSGs and BMC members can keep in mind while preparing or updating their PBR to include coastal and marine biodiversity and related knowledge in their administrative area. The handbook discusses, firstly, various approaches towards PBR preparation and updation as deciding the approach(es) would be useful to meaningfully undertake and complete the arduous task of documentation of people's biodiversity and related knowledge of the people. Secondly, the handbook discusses the process of PBR preparation and updation. The process deals with the identification and training of PBR team, capacity building of the PBR team for undertaking the PBR work and the ways for participatory preparation/updation of PBR. Lastly, the handbook describes how to include the data of collected through the PBR process into the current PBR framework prescribed by the Kerala State Biodiversity Board.
Approaches towards
COASTAL & MARINE
Inclusive PBR
PREPARATION/UPDATION
One of the first things that the PBR preparing or updating bodies could do to make the process and the final PBR meaningful is to decide the approach towards this process. This is because documenting both biodiversity and knowledge relating to biodiversity is a laborious task. This calls for adoption of strategic planning and prioritising the objectives and goals of documentation. As we know, PBR documentation is about people’s biodiversity and knowledge. It is to be undertaken by the people and their representatives from the people’s perspective. Therefore, PBR should not be seen as a scientific document. Instead it’s preparation should keep people and their knowledge at the centre.

Documentation of local coastal and marine biodiversity and related knowledge is an extensive and voluminous task. Each LSG and BMC should ideally decide how to envision their PBR. It is suggested that local self governments decide their approach towards PBR preparation and updation based on local priorities. There can be different approaches which are overlapping. Following are a few approaches that would enable Local Self Governments to strategize their PBR preparation.

1. Resource based documentation

Most common way of documentation of biodiversity is resource based documentation. In this approach, preparing a list of biodiversity at ecosystem, species and genetic level is the focus of documentation. Priorities can be placed on those resources that are distinct, or under threat, or have high utility value in people’s perspective. Certain concepts like cultural keystone species can guide this process.

What is a cultural keystone species? A cultural keystone species (s) is culturally salient species that shape in a major way the cultural identity of a people as reflected in the fundamental roles these species have in livelihood, diet, materials, medicine and/or spiritual practices. For example, there are fishers who collect green mussel or kadukka from coastal waters of northern Kerala by diving into the sea (See drawing in the cover page).
There is a place called the Kadukka bazaar in Kadalundy Gram Panchayat where one gets fresh kadukka brought for sale by local fishermen who collect them from the sea adjoining the Kadalundy Gram Panchayat and nearby places. This particular group of people has specialised skills, knowledge and methods for collecting this species. Places such as ‘Kadukka Bazaar’ are named capturing this fact. There are also locally important snacks such as kadukka nirachathu since green mussel or kadukka is an important food in this locality.

2. Value and bio-cultural practice based

This approach is highly relevant especially when people have rich bio-cultural practices that contribute towards conservation and sustainable use. The documentation of these practices can be through photo or video documentation of cultural practices, promotion of local festivals, preparation of local calendars etc.

3. Production, supply chain and value chain based documentation

Biodiversity forms the resource base for many production, manufacture, business and trade activities. In order to ensure sustainable use and sharing of benefits of use of biological resources with local communities, it is imperative that the collection or production process is monitored. Additionally, the entire value chain should also be traced to support value addition and to demand for benefit sharing.

4. Issue/Problem based

Coastal and marine biodiversity is facing multiple challenges including coastal erosion, natural calamities, pollution, degradation and privatisation. Traditional and other knowledge related to biodiversity is also facing multiple threats such as alienation of knowledge holders from their resource base and misappropriation. PBR preparation can be based on issues.
While there exists many different types of approaches to biodiversity docu-
mentation, a compilation of various approaches that BMCs can use to strategically
plan their goals and objectives is presented above. BMCs may decide an appropriate
approach based on local needs and priorities. The existing ways of preparing and
updating PBRs can be made more participatory, inclusive and suited for the local
context of each local self government.
PBR PROCESS

A. The PBR Team

Identifying the PBR team

The Biodiversity Management Committee of a coastal LSG should identify the team for preparing PBR.
The team can be:

- BMC members,
- fishing community members,
- haritha karma sena co-ordinators and members,
- teachers in schools and colleges,
- interested persons particularly youth and students of Eco Club, Biodiversity Club, Seed Club of colleges and schools.
- interested persons from non governmental organisations (NGOs)
- centres of Indigenous/Folklore studies

Priority can be given to those living or with the LSG area. Their primary aim is preparation of the PBR through participatory and inclusive process.

Training the PBR Team

The PBR team should have fundamental understanding of concepts like decentralised biodiversity governance, significance of coastal and marine biodiversity, importance of inclusive and participatory preparation of biodiversity register.
The same team should be equipped with:

- Understanding of the spirit of the Constitution of India in relation to decentralised governance
- Understanding of statutory provisions relating to decentralised biodiversity governance under Biological Diversity Act and Rules
- Understanding the concept of Peoples Biodiversity Register, its importance and its varied uses
- Understanding matsya sabhas
This can be done by training team members. They can also be enrolled for a short term course for decentralised biodiversity management. There are several courses Kerala Institute of Local Administration (KILA) has developed with respect to local governance. Courses on biodiversity are being designed by KILA. Following are certain resources for imparting the understanding.

**Resources:**

**Youtube video links:**
- Biological Diversity Act, 2002: an Introduction
  [https://www.youtube.com/watch?v=Vnq7ijnTVx8](https://www.youtube.com/watch?v=Vnq7ijnTVx8)
  uploaded by Dakshin Foundation
- ജീനിക് വരണ്ട്യ സംവിധാനശ്രമികൾ തൊഴിൽ നാല് വിഭാഗങ്ങൾ നാവികാർന്റെ സാധനത്തിൽ
  [https://www.youtube.com/watch?v=BZgNc2q3BM4](https://www.youtube.com/watch?v=BZgNc2q3BM4)
  uploaded by Dakshin Foundation

**Course on local governance offered by Kerala Institute of Local Administration:**
- ഭരണപ്രക്രമത്തിൽ സേവകമലയുടെ വിഭാഗങ്ങൾ ഇന്ത്യൻ രാഷ്ട്രസാമ്പ്രദായം

**Handbook on Biodiversity Management Committee published by Kerala State Biodiversity Board available at:**

**Brochure of Biodiversity Management Committee published by Kerala State Biodiversity Board available at:**
- [https://www.keralabiodiversity.org/images/bmc/bmc_brochure.pdf](https://www.keralabiodiversity.org/images/bmc/bmc_brochure.pdf)

**Matysasabha: Constitution and Operational Mechanism - Handbook for Working Group on Fisheries Sector published by Kerala Institute of Local Administration, 2012:**
- [http://dspace.kila.ac.in:8080/jspui/handle/123456789/185](http://dspace.kila.ac.in:8080/jspui/handle/123456789/185)

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**B. Preparing the PBR Team for Undertaking PBR work**

Once the PBR team is equipped with general understanding of the provi
sions of the Constitution, Biological Diversity Act and PBR, the next step is to familiarise the team with the geographical features and diverse communities in the area of local self government.

There should be capacity building exercises for the PBR team for facilitating the updation of PBR. Local experts who know local coastal and marine ecosystems and various communities that depend on these ecosystems should orient the PBR team with details of the LSG, its socioeconomic, cultural, geographical features which are relevant for PBR exercises. The expert should ideally from the coastal community.

Initial training and capacity building exercises of the group should include the following:-

1. **Understanding the biodiversity and stakeholders**

   Biodiversity is defined at three levels namely, ecosystem, species and genetic. At specific ecosystem also, these levels are visible. For instance, a local panchayat could have coastal area which has mangroves, estuary, reefs, islands, turtle nesting beaches etc. In addition to the different levels of biodiversity, different people assign distinct values to same biodiversity. For instance, a river mouth may be important for the local community for collection of bivalves (mussels, clams). It may be important for sea faring fishing community as their navigational route. If there is a port, the same would be important for ships also. All these people, therefore, have different stakes in the area. In addition, various departments of governments (Matsya Bhavan, Matsuymfed, Port Authorities), institutions and organisations in the marine, fisheries, coastal sector are also important stakeholders.

2. **Understanding the diversity among similar users**

   We have seen above that there are different kinds of users of biodiversity and bio-resources in the area. Among similar user community such as fishing community, there is diversity. The fishing communities are heterogeneous in nature as different communities engage in different kinds of fishing. There are people who fish with small boats for fish that are found in the upper parts of the sea (♀οάλοο παγον έναρματο). There are also those who go beyond the coastal water (12nm) in trawling boats. There are many people who are engaged in freshwater fishing in the river, streams etc. In addition, there are fishers who collect mussels, clams in the estuarine area or in the coastal waters. There are also people who use country boats, cages and other traps.
3. Understanding the coastal and marine biodiversity

Kerala’s coast is spread over 590 kms. It constitutes 10% of India’s coastal line. Kerala is endowed with 44 rivers out of which 41 flows towards the Kerala coasts and drains into Arabians sea forming many fertile estuarine areas. There is also a very complex system of backwaters in Kerala particularly in central and south Kerala. The 12 nautical miles of sea from the coast has diverse habitats, species. The Peoples Marine Biodiversity of the Thiruvananthapuram coast and the subsequent work, revealed that there are coral reefs and seagrass meadows near Kovalam area of Trivandrum. In addition, interviews with fishing communities brought to notice that there are rocks in the marine area particularly in Malabar coast that are habitats of green mussels. There are also small islands, sand bars. Kannur district has the most mangrove ecosystems which are also seen in many other parts. Fishers consider the Quilon Bank as one of the most fertile fishing zones. Hence, there are many diverse aspects of Kerala coast and sea particularly from fishing communities’ perspective.

Resources:
KADAL ARIVUM CAMERAYUM
https://www.youtube.com/watch?v=6jkUCJk7N_U&t=224s
published by Suresh Elamon

4. Understanding basic fishing related infrastructure and activities

Fishing infrastructure has undergone drastic changes. Currently, infrastructure is mainly designed by fisheries department. There are about 10 harbours and 187 fish landing centres. Earlier there was common area ‘Kadappuram’ from where boats will take off to the sea and return after catch. Kadappuram was also the place where auction took place and seller sometimes women carry fish to market. Fishing gears have also changed. Widely used fishing gears are ring seine, purse seine, shore seine, boat seine, gill nets, cast nets, drift nets, trawls, nethollivala, cheenavalala, trawls.

Resources:
- Fishing Methods of India
- Fishing Palk Bay produced by Dakshin Foundation available at https://www.youtube.com/watch?v=HXFVV-y3GLI

Caution: One should not assume that one knows everything about the LSG area. As some of the PBR team members could be from the LSG area itself, all should have an open mind to learn and unlearn things about their area.

Once the team has a good understanding of the important stakeholders, users, ecosystem diversity, fishing infrastructure, they can move to second part of the PBR preparation process
PARTICIPATORY PREPARATION/UPDATION OF PBR

Once the PBR team is trained for preparation/updation of PBR of marine and coastal biodiversity and knowledge, the actual preparation of PBR can start. Ideally, the process can be introduced in the Matyasabha meeting – special gram sabhas meetings in coastal panchayat. If Matyasabha meeting cannot be conducted for any reason, working group on fisheries sector of the LSG and main leaders of fishing communities can be consulted.

What are Matyasabhäs?
Matysabhäs are special gram sabhas in coastal panchayat consisting of fishing community members.

There are various methods for documenting the fishing communities’ knowledge, practice and innovations around marine and coastal biodiversity. The methods can be interviews, semistructured interviews with community leaders, focus group discussions with knowledgeable persons, women’s groups, mapping of memories. Transect walks, seasonal resource mapping and community mapping etc. can be undertaken. Conversations with community members can be recorded in a notebook and with a sound recorder. Photo or Video documentation is also very suitable.

Questions that can be asked to the community leaders/members can be the following:-

1. How many people depend on fishing as their livelihood?

2. How many members of the community depend on fishing as primary occupation?

3. How many members of the community depend on fishing as an ancillary occupation?

4. What are the main fish, marine and coastal plants and animals that are caught?

5. How are the fish caught? Hook and line, or net or trawling or traps or other ways?

6. Do community members fish alone or in groups or both?

7. When do community members go for fishing? (Night/dawn/dusk)
8. Are there common areas which are used by community members for carrying out fishing related activities? Under whose ownership are these?

9. Are there designated sites for fishing or are they random areas?

10. Are there specific habitats for breeding, for infants, adult male, female?

11. What are the threats faced by these fishing sites or habitats of fish?

12. What are the features of the sea upto 12 nm? (rocky bottom, sandy bottom, mangrove areas, islands etc.)

13. Are there any traditional knowledge that are kept as sensitive or secret?

14. What are important cultural practices involving marine and coastal biodiversity?

15. What are the species that are used for festivals?

16. What are the special dishes made from sea plants and animals?

17. What are the different kinds of fishing gears (Trawling nets, crafts, nets, hooks and traps, natural factors like) (With photos)

18. What are the natural factors that aid fishing? - wind, stars, sound of fish, color of fish?

19. Are all fish used for sale? List the main fish used for sale

20. What are the fish used for export?

21. What are the fish used for domestic sale?

22. What are the fish used in consumption?

23. Is there any difference in the types of fish used for export, domestic sale and domestic consumption?

24. What is the priority - export, domestic sale or domestic consumption?

25. What are the general plants and animals used by the communities?

26. Are there any rules regarding fishing? Like fixed spaces for fishing for specific family or members?
27. Are there any community initiated management plans for control overfishing or other threats?

28. How are disputes amongst the community members resolved? Does anyone develop more skills on fishing and if so how do they develop this?

A tool that can incorporate these questions

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<tr>
<th>Photo</th>
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<tbody>
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<td>Common name</td>
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<tr>
<td><strong>Habitat</strong></td>
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<td>for breeding</td>
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<td>for infants</td>
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<td>for adult male</td>
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<td>for adult female</td>
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<td>Fishing season</td>
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<td>Fishing technique</td>
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<td>Status of availability</td>
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<td>Users</td>
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<td><strong>Cultural Importance</strong></td>
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<td>Stories</td>
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<td>Songs</td>
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<td>Festivals</td>
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<td>Threats</td>
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<td>Management methods</td>
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**Resources for Tools and Methods:**
GETTING TO KNOW
THE CURRENT FRAMEWORK
GETTING TO KNOW
THE CURRENT FRAMEWORK

The information gathered through the PBR process is to be included in the PBR. Once the raw data is collected, the PBR team need to consolidate and collate these into organised data in the forms that are available and discussed in the current framework. Before finalising the PBR, it is important to present the findings before the Gram Sabha and Matsya Sabha meeting for their approval. Once approved, they can be included in the official PBR. PBR can be annually updated.

The current framework for documenting coastal and marine biodiversity is available in the Revised PBR Guidelines, 2013 issued by the National Biodiversity Authority (NBA) in 2013 and the Model PBR published by Kerala State Biodiversity Board in 2017.

How can we include marine and coastal biodiversity and related knowledge to existing framework?

We will look how these can be included in the PBR Models prepared by the Kerala State Biodiversity Board. The data relevant to marine and coastal biodiversity are available in different general forms mainly the following:

1. Form 1.4:
   This form relates to documentation of folk knowledge and details of people who hold the knowledge, area of expertise and details relating to fishing.

   Under this form, details of coastal communities, their knowledge about sea and fishing can be included.

2. Form 1.7:
   This form is on history and culture of the area, people, local festivals and their relation to biodiversity, bio-resources used for local festivals, folklore relating to nature and biodiversity.

   This form is also an important form where the unique culture of marine and coastal communities can be documented.
3. **Form 1.8:**

   This form is about people, their primary and secondary source of livelihood, geographical areas that people depend on for livelihood, resources they depend on, management ways of geographical areas and resources.

   This form offers documentation of management ways of geographical areas and resources that are important for communities.

4. **Form 2.3.13:**

   This form is very similar to the format 27 of NBA Guidelines. It includes information of marine and coastal animal and plant species, their habitat of the species, its local status (past and present availability), details of parts collected, its uses including commercial uses, traditional knowledge associated with the species and details of knowledge holders
Conclusion

Preparation of PBR is an important way to give importance to people and local communities in biodiversity conservation, sustainable use and sharing of benefits. All PBR should be updated with relevant details of people’s knowledge about marine and coastal diversity since these ecosystems are essential for local livelihood and business. PBRs should inform the local biodiversity management plans that are prepared by BMCs and LSGs. A participatory and inclusive PBR process is essential and will help in good biodiversity governance. This handbook covers the approaches towards PBR preparation in coastal LSGs. It lays emphasis on the process of PBR preparation rather than the format or forms of PBR. Identification and training of PBR preparation team would immensely contribute towards the quality of PBR. Methodologies adopted for preparation should be people centric. Resources useful for facilitators for PBR preparation are included in the handbook.