



4. It is therefore humbly prayed that this Hon'ble Tribunal may be pleased to take the said Master Plan dated 07.01.2021 filed by the Divisional Forest Officer, Palakkad, on Record and thus render justice.

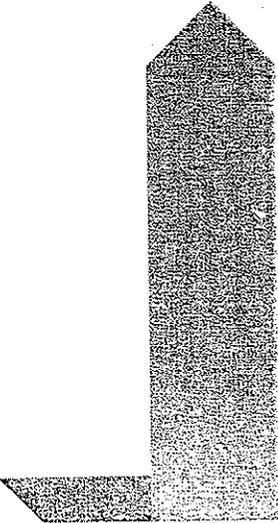
Dated at Chennai on this the 19th day of January 2021.


(~~E. K.~~ KUMARESAN)

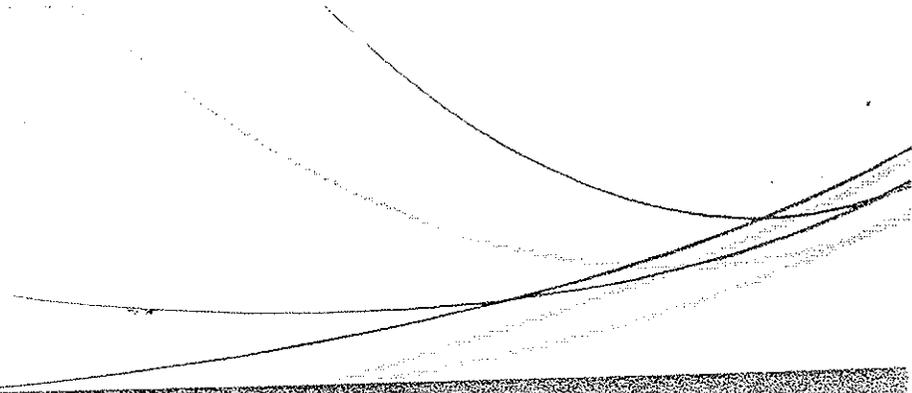
STANDING COUNSEL FOR STATE OF KERALA
NATIONAL GREEN TRIBUNAL (SZ)
GOVERNMENT OF KERALA
COUNSEL FOR RESPONDENTS 1 to 6



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**MASTER PLAN FOR CONSERVATION
OF RIPARIAN BIODIVERSITY ALONG
BHARATHAPUZHA RIVER**





CHAPTER 1

Bharathapuzha river

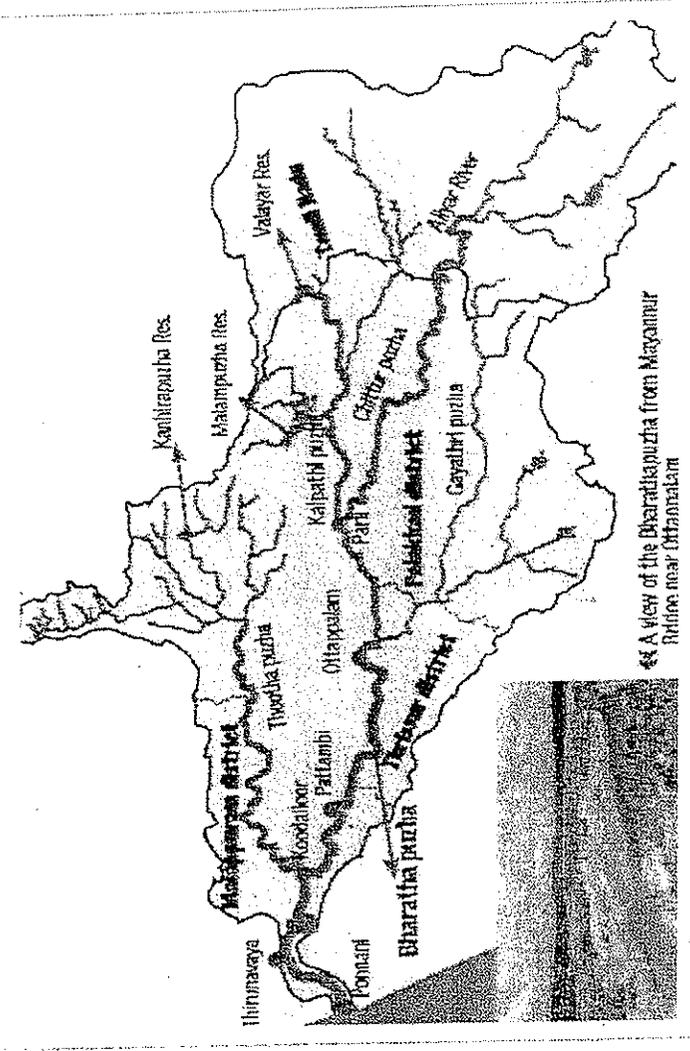
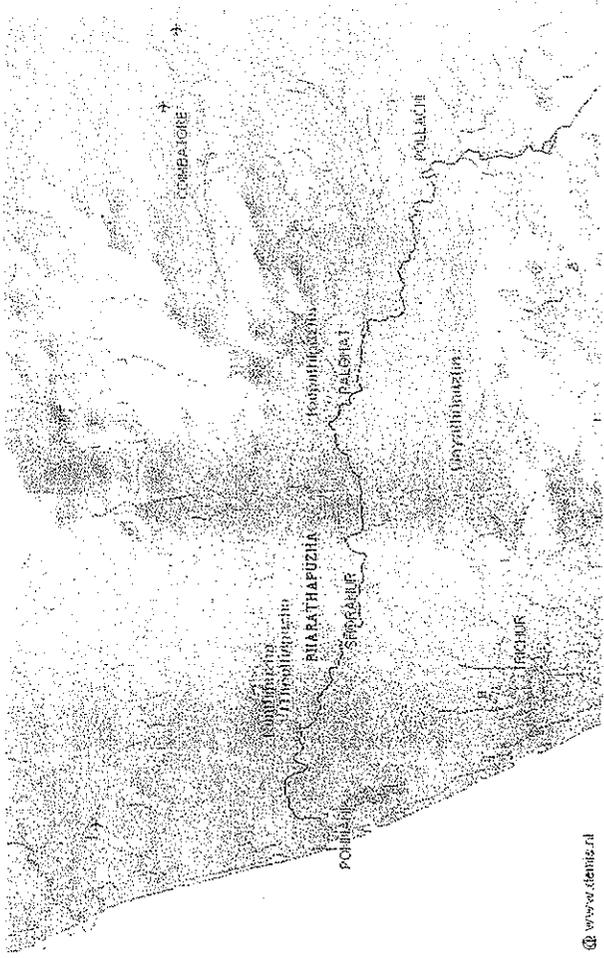
| | | |
|-------------------------------------|---|--|
| Total Basin area | : | 6186 km ² |
| Basin area in Kerala State | : | 4400 km ² |
| District in which basin are located | : | Palakkad, Malapuram, Trissur |
| Origin of River | : | Annamalai Hills |
| Length of main stream | : | 209 km |
| Main tributaries | : | Gayathripuzha, Chitturpuzha, Kalpathipuzha, Thuthapuzha |

Introduction

The River Bharathapuzha also known as Nila. It is the second-longest river in Kerala, after the Periyar River. For the first 40, the Bharathapuzha follows an almost northerly course till Pollachi. At Parli both Kannadippuzha and Kalpathippuzha merge and flow as Bharathapuzha and follow a westerly course until it empties into the Arabian Sea at Ponnani. Thootha River merges with Nila at Pallippuram. As Thootha river is rich in water, after its merger, Nila becomes thicker in flow.

The Bharathapuzha is the lifeline of many cities and villages; (in Chittur, Bharathapuzha is known as "Sokanasini", (Chittur-Thathamangalam,) (Kodumbu-Thiruvallathur) Palakkad, (Parli-Kottayi), (Mankara-Perigottukurissi),(Lakkidi-Thiruvilwamala Killikkurussimangalam, Ottappalam, Shoranur, Cheruthuruthy Pattambi, Thrithala, Thiruvegappura, Kudallur, Pallipparam and Kumbidi. The village of Parudur, including the town of Pallipuram, stand near the confluence of this river and the River Thootha or, simply, Thuthapuzha

Location map of Bharathapuzha



← A view of the Bharathapuzha from Mexamur Bridge near Ottappalam

PURPOSE OF THIS MASTER PLAN

This plan will provide general guidelines for the protection of Bharathapuzha river banks, bio stabilization to control the river flow and rebuild riparian habitat. This also aims to provide technical advice that will assist local government, community groups and landholders to restore, protect and manage river bank.

This incorporates a general discussion on site preparation, plant materials selection criteria, zonation of river bank, planting, its monitoring and maintenance and other river bank stabilization treatments including installation guidelines and materials requirements. Successful application of these guidelines will ensure the protection of river banks from degradation.

GOALS AND OBJECTIVES

The goals of a river restoration programme can be broadly classified as ecological and socioeconomic goals.

- **To stabilize and restore the riverine ecosystem.**
- **To protect the riverine habitat from degradation**
- **A convergent effort from line departments for a common goal**

Objectives need to be specific, realistic, achievable and measurable. Exploring project objectives at the beginning of the project helps for planning and designing of activities, which will limit the changes and costs that can surface later in the design.

The objectives of this master plan may ultimately aim to achieve the following benefits;

- To reduce erosion and stabilize stream banks
- To restore riparian forests
- To increase biodiversity
- To protect riparian vegetation from damages of fire, and other degradation.

PROJECT PERIOD PROPOSED

The project is proposed to be executed in a phased manner from 2020-21 to 2021-22, because many of the grass bed caches fire were presently submerged in water. Biodiversity survey of the grass beds can be conducted only during next summer of year 2021. It will also help in proper planning and execution of master plan, so that the works can be implemented in a time bound manner.

Ist Phase in 2020-21

As part of 1st phase, fire protection activities can be taken up along the river banks with the help of NGO's and police department. For the successful completion of phase I, awareness may be given to local public and display boards needs to be erected in previous fire areas.

IInd Phase in 2021-22

In the 2nd phase, detailed survey and demarcation of area, enrichment planting, fire protection activities etc may be carried out.

PHASE 1ACTIVITY

1. Identify the 2019 fire damaged areas of Bharathapuzha river
2. Protection can be given to such areas by regular patrolling by forest or police department staff.
3. Local NGO's help can be taken for getting information regarding the illegal activities such as waste dumping, tree cutting, setting fire etc
4. Awareness can be given to public regarding the importance of riparian habitat and foraging and breeding grounds of birds and wildlife
5. Display boards can be setting up in specific location

Required Project Cost -PHASE 1

| Particulars | Rs. In lakhs |
|--|--------------|
| Cost of display boards | 1.0 |
| Engaging Man mazdoors for fire protection at Previous year fire locations 1200MM | 8.00 |
| Printing Notices and Pamphlets&publicity materials | 1.0 |
| Required project cost | 10.00 |

PHASE 2 ACTIVITIES

1. PRELIMINARY SURVEY

This includes data collection of survey records, demographic, socioeconomic and ecological aspects.

- A. Land Survey records will help in identifying actual extent of land available with government.
- B. Demographic information (population, density etc.) will help to analyse the number of people directly or indirectly depending upon a particular river ecosystem.
- C. Socio economic aspects include economic benefits to society in the form of various resources like timber, fuel wood, food, NTFPs, employment for the local people and aesthetic benefits.
- D. Ecological factors such as soil type, elevation, flood, low-flow, groundwater levels,
- E. Biodiversity survey will record the presence of natural wildlife using the riparian habitat foraging and breeding, it will help in documenting the existing richness in this area and measure will be taken to protect such species.
- F. Mapping the area and fixing the boundary of the river bank using GIS is critical to initiate the activities. This will help to calculate the total time and manpower required.

2. RIVER BANK STABILIZATION / ENRICHMENT PLANTING

Riverbanks are ecologically fragile ecosystems which continuously face serious threat from various natural and anthropogenic activities. Protection of the river/stream bank will lead to the stabilization of the water courses, and making the area productive along the river or stream.

Planting of trees, shrubs, herbs or grasses along the riverbank is a vegetative method of stabilization referred to as **riverbank bio-stabilization** whereby the root system hold the soil in place and reduce the impact of water flow. It is basically refer to the use of live and dead herbaceous and woody plant materials in combination with natural and synthetic support

materials for slope stabilization, erosion reduction, and vegetative establishment. In simple terms, **riverbank bio-stabilization** uses plants and sometimes inert material to increase the strength and structure of the riverbank. Vegetation appears more complex to work with but also offers unique benefits. Vegetation as a live material can be self-sustaining under suitable conditions, it can adapt to temporal changes in topography, it provides habitat for other species, provides food sources for other species, and can prevent the warming of river flow temperature by overbank shading.

- **Lower Zone** is adjacent to river having low to medium water level. This zone is usually water saturated throughout the year. The species seen in this zone have the ability to survive prolonged inundation and are flexible enough to withstand high velocity water current. Grasses and shrubs tolerant to continuous inundation can survive in this zone.
- **Middle zone** is having medium to high water level. This zone is usually saturated 3-4 months in a year. This zone includes some tree, palm or bamboo species along with grasses and shrubs tolerant to occasional water inundation.
- **Upper zone**- In the zone above the high water level and rarely to nil water saturation. Trees, palms or bamboos are seen with or without shrubs.



SELECTION OF SUITABLE SPECIES

Plant selection should be done based on following characteristics

- Select indigenous species
- Suitable for climatic and edaphic conditions of the site
- Good root anchoring capacity
- High tolerance to adverse conditions like salinity, drought, waterlogging etc.
- High growth rate
- Multiple uses (food, timber, fodder, NWFPs etc.)
- High regeneration and coppicing power

3. PROTECTION

A committee should be formulated at village level with the help of NGO's to protect the banks from fire and activities that damage the riparian habitat like cutting trees, waste dumping etc.

4. ACTION PLAN

The proposed plan may consist of the following steps:

- i. Preparation of Master plan
- ii. Setting up a multidisciplinary team
- iii. Survey and demarkation
- iv. Preparation of site specific restoration plan
- v. Plan implementation and execution of restoration measures with the help of line departments.
- vi. Monitoring to review timely progress, effectiveness of the projects and maintenance
- vii. Community involvement and people's participation

5. EXECUTION OF THE PROJECT.

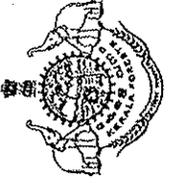
This project will be executed through a special team formulated by taking staff from various line departments under the present committee.

Required Project Cost -PHASE 2

| Particulars | Rs. In lakhs |
|--|--------------|
| Survey and demarcation | 1.0 |
| Enrichment planting | 10.00 |
| Engaging Man mazdoors for fire protection at fire sensitive locations 1200MM | 8.00 |
| Printing publicity materials | 1.0 |
| Required project cost | 20.00 |


Divisional Forest Officer
Palakkad

Narendra Nath Veluri, IFS
Divisional Forest Officer
Palakkad



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Palakkad Division
Kallekulangara PO, Palakkad-678 009
Phone: 0491-2555156
E-mail: dfo-plkd.for@kerala.gov.in

G2-755/20

Date : 07/01/2021

To

Sri. E.K. Kumaresan
Advocate
E.K.K. Legal, No.6
Indian Chamber, SICCI Annex Building
Ground Floor, Esplanade
Chennai 600108

Sir,

Sub: Cases taken Suo Moto by National Green Tribunal on the basis of news paper report published in Malayala Manorama daily dated 20/01/2020 - submission of Master Plan - reg.

Ref: 1. OA No. 15/2020 (SZ) of National Green Tribunal, Southern Zone, Chennai
2. Order of National Green Tribunal in the matter of OA 15/2020 dt. 24/12/2020.

Kind attention is invited to the subject and reference cited. I am hereby submitting Master Plan for protection of riparian Biodiversity along Bharathapuzha River as per the direction of Hon'ble National Green Tribunal. However, it is to be brought to your notice that there are so many islands formed in the jurisdiction of Divisional Forest Officer, Palakkad in Bharathapuzha River. However, they are all under submergence currently. This Master Plan is prepared only keeping in mind the island (i.e. the place of occurrence of incident on 19.01.2020), which Hon'ble National Green Tribunal has taken cognizance of. For preparing a detailed Master Plan it will be possible only during dry season after seeing how many such islands are exposed and are misutilized by miscreants. However, due to paucity of time and to abide by Hon'ble National Green Tribunal's timeline the current Master Plan is being submitted. In case, Hon'ble National Green Tribunal wants a

detailed Master Plan for protection of all the island this can be done only during dry season when water recedes in Bharath Puzha which will need sufficient time till June. This shall be brought to notice of the Hon'ble National Green Tribunal. However, as per current Master Plan the island where the previous incident has happened will be addressed this year itself. This is for your kind information.

Encl : Master Plan.

Yours faithfully,


Divisional Forest Officer
Palakkad

Copy submitted to Advocate General, Kerala, Ernakulam.

Copy with copy of Master Plan submitted to Head of Forest Force, Kerala, for kind information.

Copy submitted to Principal Chief Conservator of Forests (FM), Thiruvananthapuram.

Copy with copy of Master Plan submitted to District Collector, Palakkad, for kind information.

Copy submitted to Conservator of Forests (SA), Thiruvananthapuram.

Copy to Assistant Conservator of Forests & Liaison Officer, O/o Advocate General, for information.



**BEFORE THE HON'BLE NATIONAL
GREEN TRIBUNAL**

**(SOUTHERN ZONAL BENCH,
CHENNAI)**

Original Application No. 15 of 2020

BETWEEN

Tribunal on its own motion SUO MOTU

based on the News Item in Malayala
Manorama, Malayalam Newspaper
dated 20.01.2020, "Burning Banks of
Bharathapuzha". Anti Social elements

Continue to burn dried riparian
grassland **....Applicant**

AND

Government of Kerala and others
...Respondents

**MASTER PLAN SUBMITTED
BY THE DIVISIONAL
FOREST OFFICER,
6th Respondent**

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