

# Annual Report & Audit Report 2022 - 2023



**Kerala State Biodiversity Board**



**KSBB**

**ANNUAL REPORT 2022 - 2023**

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**Kerala State Biodiversity Board**

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Kerala Biodiversity Museum : 0471-2504750

Cover Page Picture : Indian black microhylid frog (*Melanobatrachus indicus*)

IUCN Status : Vulnerable

Endemic Status : Endemic to the Southern Western Ghats

# Kerala State Biodiversity Board

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## PREFACE

This Annual Report is a reflection of major activities undertaken by the Kerala State Biodiversity Board during the year 2022-23. We were able to complete many of the ambitious projects initiated during the previous years. During the year, KSBB has initiated several conservation activities, focusing on both ex-situ and in-situ conservation, based on the "Kerala State Biodiversity Strategy and Action Plan 2022 (SBSAP)," which guides the state's efforts in biodiversity conservation from 2022 to 2032. A two year state wide project for identification, creation of database, propagation, conservation and value addition of wild and underutilized agricultural crops was launched in association with 18 partners including agricultural universities and research institutes covering wild edible fruits, vegetables, tubers, rhizomes, legumes, millets, pulses, etc. Another important activity was the preparation of guidelines for updating Peoples Biodiversity Register (PBR Volume II) and regional trainings for BMCs. Similarly, guidelines for the preparation of Local Action Plan for Biodiversity conservation and management based on PBRs were also prepared.

A major event of the year was the conduct of Kerala State Biodiversity Congress from 18 to 20 Feb. 2023 at the Government Arts and Science College, Kozhikode with the theme "Biodiversity for livelihood". A grand exhibition has been arranged as a part of the Congress. Other major events were Technical Support Group Meet, BMC Meet, Custodian Farmers Meet, Children's Biodiversity Congress, and distribution of Biodiversity awards

One of the significant threats to biodiversity is biological invasion, and with a view to develop a policy for prevention of introduction of invasive alien species and their management in terrestrial and aquatic ecosystems of Kerala, a two-day National Seminar on Bioinvasions - Trends, Threats and Management was held from 3 to 4 Dec. 2022 at Thiruvananthapuram.

District level trainings to Biodiversity Management Committees were organized in all the districts as a part of capacity building. Other major activities included establishment of biodiversity parks, theme based biodiversity conservation projects, and various research projects.

I am extremely grateful to the honourable Chief Minister of Kerala, Sri. **Pinarayi Vijayan** under whom Kerala State Biodiversity Boards functions, for the constant support in all our programmes. I express my sincere thanks to the support given by Dr. V. Venu, Additional Chief Secretary to Government and all the other officials of the Department of Environment for their active support and co-operation. I would also like to place on record the co-operation from the Board Members and all the line departments in implementing various activities of the Board.

**Dr. C. George Thomas**  
Chairman



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# 1

## Introduction



### 1.1 Background

Kerala State Biodiversity Board (KSBB) has been constituted under the provision of the Biological Diversity Act, 2002, Rules, 2004 and Kerala State Biological Diversity Rules, 2008. It is an autonomous body of the State Government, under the Kerala State Environment Department with the headquarters at Thiruvananthapuram. The KSBB is dedicated to the conservation and sustainable utilisation of bioresources of the State and fair and equitable sharing of benefits from the use of bioresources. Empowered by Chairperson, Member Secretary and a team of expert officials, the Board contributes a series of vibrant activities to the State of Kerala.

### 1.2. The Biological Diversity Act, 2002

The Biological Diversity Act, 2002 was born out of India's attempt to realize the objectives enshrined in the United Nations Convention on Biological Diversity (CBD), 1992 which recognizes the sovereign rights of states to use their own Biological resources. The Act provides a legal framework for the conservation of biological diversity of the country, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources. The Biological Diversity Act, 2002 envisages decentralized biodiversity management with Biodiversity Management Committees (BMCs) at local level, State Biodiversity Boards at State level and National Biodiversity Authority (NBA) at National level. In accordance with the provisions of the Act of 2002, the Kerala State Biodiversity Board (KSBB) was established in 2005 and subsequently the Kerala Biological Diversity Rules were framed in 2008.

### 1.3. The National Biodiversity Authority (NBA)

The National Biodiversity Authority (NBA) was set up in the year 2003 with its headquarters in Chennai. The NBA is a statutory, autonomous body, under the Ministry of Environment, Forests and Climate change, Government of India to implement the provisions under the Biological Diversity Act.

### 1.4. Constitution of Kerala State Biodiversity Board (KSBB)

The Board was constituted on 28 February 2005 vide GO (Ms) No. 1/2005/STED dated 01 June 2005 in accordance with the provisions under section 22-25 of the Biological Diversity Act, 2002. Initially the Board was housed under Kerala State Council for Science Technology and Environment (KSCSTE).

KSBB was transferred to the Environment Department [vide order GO (Ms) No.64/2006/GAD dated 16.2.2006] February 2006, when the new Environment Department was formed in Kerala [vide order GO (Ms) No. 10/2006/GAD dated 6.1.2006]. In exercise of the power conferred by section 63 of the Biological Diversity Act, 2002, the Government of Kerala formulated the Kerala Biological Diversity Rules, 2008 (vide GO(P) No.1/2008/Envvt. dated 10th June 2008). The Rule 12 specifies the functions of the State Biodiversity Board.

### 1.5 Functions of KSBB

The major function of the State Biodiversity Board is to advise the State Government on any guidelines issued by the Central Government

on matters relating to the conservation of biodiversity. SBB also advocates for sustainable use of biological resources and equitable sharing of the benefits arising out of the utilisation of these resources.

The Board has the authority to grant approvals on requests for commercial utilisation or bio-survey and bio-utilisation of any biological

resource by Indians. The Board also performs functions necessary to carry out the provisions of the Biodiversity Act or as prescribed by the State Government.

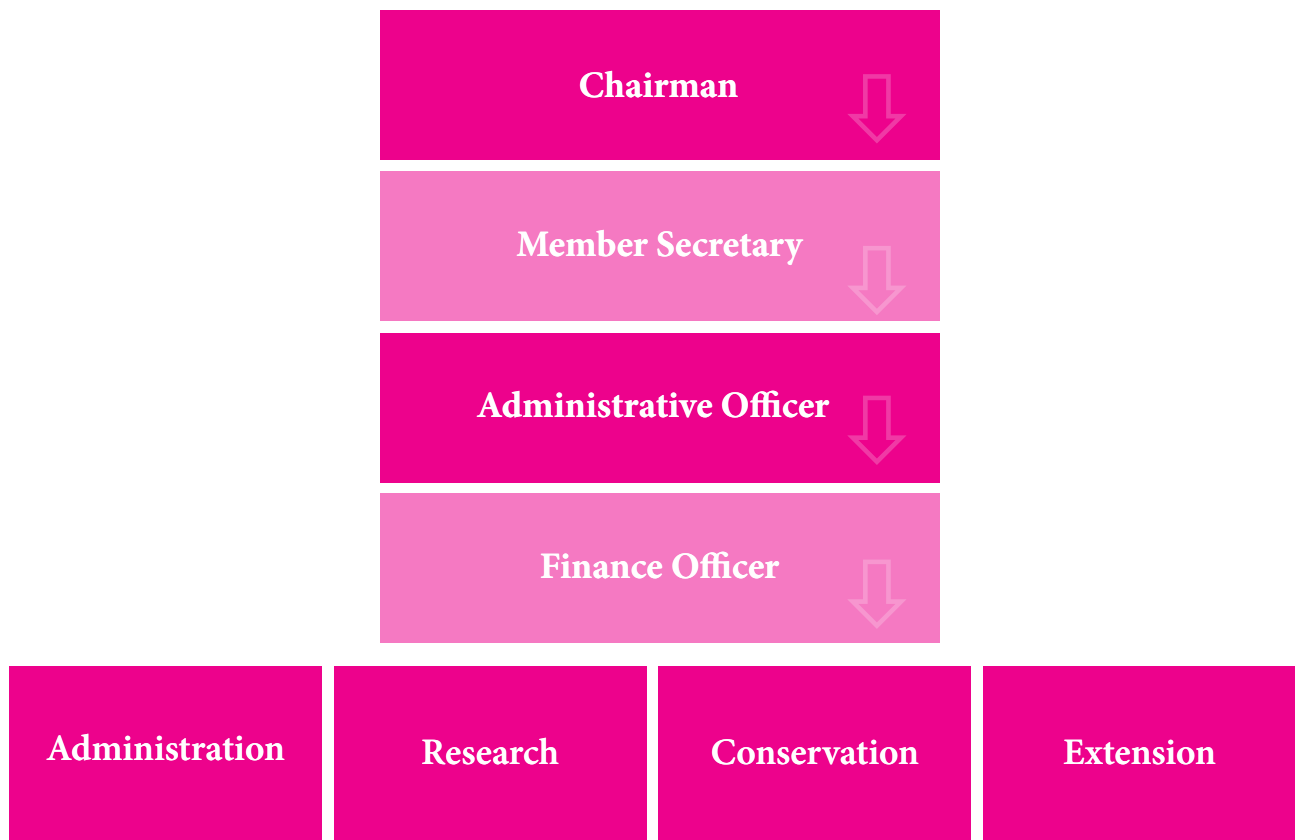
The functions, objectives and strategies of the Kerala State Biodiversity Board reflect on the recitals to the Biological Diversity Act 2002 under which the Board is constituted.

# 2

## Composition of the Board and Staff



### 2.1 Organisational structure



## 2.2. Details of Board members

The Board was reconstituted vide order No.GO (Ms) No.4/2018/Env. dated 27.07.2018.

SL.No	Name and Designation	Post
1.	<b>Chairman</b> <b>Dr. C. George Thomas</b>	01.04.22 - Continuing
2.	<b>The Executive Vice President,</b> Kerala State Council for Science, Technology and Environment, SasthraBhavan, Pattom, Thiruvanahtapuram	Ex-officio Members
3.	<b>The Principal Secretary to Govt.,</b> Forest and Wildlife Department, Government Secretariat, Thiruvananthapuram	"
4.	<b>Additional Chief Secretary to Govt.,</b> Fisheries Department, Government Secretariat, Thiruvananthapuram	"
5.	<b>The Additional Chief Secretary to Govt.,</b> Environment Department, Government Secretariat, Thiruvananthapuram	"
6.	<b>The Agriculture Production Commissioner,</b> Government Secretariat, Thiruvananthapuram	"
7.	<b>Dr. K. Satheeshkumar</b> Principal Scientist & Head (Retd.), Biotechnology, JNTBGRI, Palode	Non-official Members
8.	<b>Sri. K.V. Govindan,</b> Member, D.P.C. Kannur Madhavi Nilayam, Chuzhali P.O., Kannur-670142	"
9.	<b>Dr. T.S. Swapna</b> Associate Professor, Department of Botany, University of Kerala, Karyavattom Campus, Thiruvananthapuram	"
10.	<b>Dr. K.T. Chandramohan</b> Department of Botany, Govt. Brennan College, Thalassery, Kannur.	"
11.	<b>Dr. Pramod G Krishnan IFS,</b> Additional Chief Conservator of Forests, Vanalakshmi, Forest Headquarters, Vazhuthacaud, Trivandrum 695014 (G.O (MS) No.08/2022/Env. dt 29.11.2022)	"

### Member Secretary

**Smt. Mini V.**

Member Secretary in-charge from 01/04/2022-25/04/2022

**Dr. SanthoshKumar A. V.**

Member Secretary from 26/04/2022 –31/03/2023

### 2.3. Staff Strength of the Board

#### 2.3.1. Permanent staff (On deputation)

SL No	Designation	Sanctioned strength	No. of staff working	Mode of appointment
<b>Sanctioned staff on deputation</b>				
1	Member Secretary	1	1	Deputation
2	Administrative Officer	1	1	Deputation
3	Finance Officer	1	1	Deputation
4	Principal Scientific Officer	2	1	Deputation
5	Scientific Officer	1	1	Deputation
6	Technical Assistant	1	1	Deputation
7	Assistant cum Cashier	1	1	Deputation
8	Data Entry Operator	1	0	Deputation
9	Confidential Assistant	1	0	Deputation
10	Helper	1	1	Deputation
11	Part-time sweeper	1	1	Direct appointment through Employment Exchange

#### 2.3.2. Contract Staff

1	Research Staff	7
2	Supporting staff	9
3	District Co-ordinators	14
4	Staff funded by NBA	4

### 2.4. Board meetings conducted during 2022 - 23

During the reporting period, three board meetings were conducted as follows

- » 57<sup>th</sup> Board meeting was held on 23.05.2022 at Grand Chaithram Hotel, KTDC, Thrivananthapuram
- » 58<sup>th</sup> Board meeting was held on 11.10.2022 at Layam Hall, Secretariat Annexe –II, Thrivananthapuram
- » 59<sup>th</sup> Board meeting was held on 20.01.2023 at Layam Hall, Secretariat Annexe –II, Thrivananthapuram

# 3

## Major Achievements of KSBB

### 3.1. Major achievements under Conservation Division

- Provided financial assistance to 11 BMCs for the restoration of local specific degraded ecosystems.
- Prepared guidelines for the preparation of PBR II Volume and conducted regional trainings for BMCs who kept fund for PBR updation in their plan fund during the reporting period.
- The proposal for draft notification of Calicut University Botanical Garden BHS was submitted to the Government.
- BMC Meet was conducted on 20<sup>th</sup> February at Govt. Arts & Science College, Kozhikode. A total of 390 persons from 185 BMCs participated in the BMC Meet.
- A total of 229 local bodies convened BMC meetings.
- Provided financial assistance to 21 BMCs for the preparation of Local Action plan for Biodiversity conservation and management based on PBR.
- Prepared guidelines for the preparation of Local Action plan for Biodiversity conservation and management based on PBR.
- Provided district wise training programmes of Local Action plan for Biodiversity conservation and management based on PBR in Idukki and Kannur.
- District wise one day workshop for the PBR 2<sup>nd</sup> volume was provided to the selected BMCs at Thrivunanthapuram on 20.09.2022.
- The regional training programmes for the PBR 2<sup>nd</sup> volume were conducted in Thrissur (17.01.2023), Thiruvananthapuram (18.02.2023) and Kozhikode (16.03.2023).
- Prepared the master data for the major bioresources in the e-PBR software.
- Inaugurated biodiversity garden developed as a part of Rebuild Kerala Initiative (RKI) Project on biodiversity rejuvenation of Pampa river at Govt High School, Kozhencherry, Pathanamthitta.
- As a part of the RKI Pampa project, KSBB had imparted livelihood training to the local people from the selected BMCs based on bioresources through Krishi Vigyan Kendra in Pathanamthitta.
- KSBB had distributed saplings belonging to medicinal and native fruit plants to the local people of the selected BMCs to enhance the homestead biodiversity.
- TSG Meet was conducted on 19<sup>th</sup> February at Govt. Arts & Science College, Kozhikode. A total of 40 members including 25 TSG members attended the TSG meet programme.
- An awareness video on the importance of sea turtles was prepared for the first time in Kerala.

### 3.2. Major achievements under Access and Benefit Sharing & Legal Issues Division

- A Red Data Book of Kerala incorporating details of threatened flora and fauna of Kerala under IUCN and various schedules of Wildlife Protection Act 1972 and other legislations was prepared
- A two year state wide project for Identification, creation of database, propagation, conservation and value addition of wild and underutilized agricultural crops was launched in association with 18 partners including Agricultural universities and research

institutes covering wild edible fruits, vegetables, tubers, rhizomes, legumes, millets, pulses etc.

- Ecological restoration and Agrodiversity conservation at College of Agriculture, Vellayani : A project for state wide survey, germ plasm collection of wild relatives/ land races and farmers varieties of different crops, establishment of agrodiversity conservatory of wild relatives/ land races and farmers varieties of prioritized crops, development of Seed banks and Millet museum is ongoing
- A State Biodiversity Strategies and Action Plan giving thrust to sustainable development, livelihood security and nutritional security with an overall approach to reduce poverty especially at the local level was developed with details of major threats to biodiversity in Kerala in different sectors, policy recommendations for conservation of biodiversity, and action plan for the next ten years
- KSBB with funding support of Rebuild Kerala Initiative undertook a study of tradable bioresources with the objective of identifying various floral bioresources being traded in the State, assessing its volume and economic potential as well as inventorizing the bioresource-based industries operating in the State was undertaken. The project covered bioresources from forest, outside forest, marine and fresh water resources.
- A database of 3900 aquatic species has been generated and a consolidated checklist of 185 tradable bio-resources and products prepared after extensive consultation with about 4000 fishermen covering 138 marine landing centers
- An exhaustive inventory of the floral bioresources of the state and checklists prepared for Mushrooms (85), RET species (645), endemic plants (152), Trees of Kerala (855), Timber (161), Trees Outside the Forest (90), Bamboos & Reed species (55), Exotic fruit trees cultivated (26), Orchid (126), Orchids in forests having floricultural potential (16), Passport script data of the Non Wood Forest Produce of Kerala State has been prepared.
- The total economic value of bioresources of the state was calculated and a rough estimate of the ABS potential from, based on biological resources' purchased price by the industries or based on the raw-material cost has been worked out.
- A project for developing nurseries of rare, endangered and threatened plants and their propagation through Kudumbasree in Thiruvananthapuram district of Kerala was completed and training on different propagation techniques, setting up of nurseries, planting operations and after care and supply of quality planting materials of RET species was conducted.
- With a view to develop a policy for prevention of introduction of invasive alien species and management of invasive alien species in terrestrial and aquatic ecosystems of Kerala state, a two-day National Seminar on Bioinvasions - Trends, Threats and Management was held
- Twenty-one tribal families of Kuttichal Gramapanchayath were provided training in stingless beekeeping, dividing the colony, pure honey collection and management of the stingless bees and honeybee colonies were also distributed for sustainable livelihood of the selected tribal farmers
- Pallichal BMC initiated Sundaravanam, the medicinal plant garden project in five selected schools of the Panchayath.
- Biodiversity studies were conducted in 10 selected locations
- The Board supported 3 doctoral fellows for conducting research on various aspects of biodiversity
- During the period of 2022-2023 KSBB provided internship to 40 Students from different institutes.
- Capacity Building workshop on BD Act, 2002 and ABS was conducted for Technical Support Groups, Forest Officials, Research institutions, Line departments and Virtual

Biodiversity Cadre members

- Capacity Building workshop on BD Act, 2002 and ABS was conducted for local government bodies, BMC's, District Panchayat secretaries, Mayors of corporations, District level planning officers, Assistant Development Commissioners, Deputy Director of Panchayats, District officers of Agriculture, Animal Husbandry, Economics and statistics, and Fisheries
- *Ex situ* conservatories of red listed species: The Kerala State Biodiversity Board has successfully implemented the project titled "*Ex situ Conservatories for red listed Plant Species*" within the state.

### **3.3. Major achievements under Extension Division**

- Observance of International Days (International Biodiversity Day, Environment Day, World Forest Day, World Earth Day, World Water Day and World Meteorological Day)
- Provided financial assistance to 130 selected Biodiversity clubs in the state for conservation activities
- Three Regional level trainings for selected biodiversity clubs conducted at Kozhikode (13/01/2023), Trissur (28/02/2023) and Thiruvananthapuram (8/03/2023)
- District level Children's Biodiversity Congress conducted in all 14 districts
- State level Children's Biodiversity Congress (CBC) conducted on 20<sup>th</sup> February at Govt. Arts & Science College, Kozhikode along with 2<sup>nd</sup> Kerala State Biodiversity Congress
- RKI Agrobiodiversity Project-Seed fest conducted in four districts (Wayanad, Trissur, Idukki, Ernakulam)
- KSBB Newsletters published till June 2023
- Establishment of Biodiversity Knowledge Centres - Provided financial assistance to 44 Selected Libraries in the State
- Biodiversity awareness & Extension programmes - Provided Financial Assistance to Colleges/NGOs for conducting seminars/workshops/symposia
- Kerala State Biodiversity Conservation Awards
- Kerala State Biodiversity Congress
- Online certificate course on "Data Analysis through R Programming"
- 4652 students & 1163 adults visited Biodiversity Museum at Vallakkadavu representing 82 institutions.
- Conducted Training on Mushrooms
- Kokodema training conducted



# 4

## Biodiversity Conservation

### Major achievements

- Provided financial assistance to 11 BMCs for the restoration of local specific degraded ecosystems.
- Prepared guidelines for the preparation of PBR II Volume and conducted regional trainings for BMCs who kept fund for PBR updation in their plan fund during the reporting period.
- The proposal for draft notification of Calicut University Botanical Garden BHS was submitted to the Government.
- BMC Meet was conducted on 20th February at Govt. Arts & Science College, Kozhikode. A total of 390 persons from 185 BMCs participated in the BMC Meet.
- A total of 229 local bodies convened BMC meetings.
- Provided financial assistance to 21 BMCs for the preparation of Local Action plan for Biodiversity conservation and management based on PBR.
- Prepared guidelines for the preparation of Local Action plan for Biodiversity conservation and management based on PBR.
- Provided district wise training programmes of Local Action plan for Biodiversity conservation and management based on PBR in Idukki and Kannur.
- District wise one day workshop for the PBR 2<sup>nd</sup> volume was provided to the selected BMCs at Thiruvananthapuram on 20.09.2022.
- The regional training programmes for the PBR 2<sup>nd</sup> volume were conducted in Thrissur (17.01.2023),

Thiruvananthapuram (18.02.2023) and Kozhikode (16.03.2023).

- Prepared the master data for the major bioresources in the e-PBR software.
- Inaugurated biodiversity garden developed as a part of Rebuild Kerala Initiative (RKI) Project on biodiversity rejuvenation of Pampa river at Govt High School, Kozhencherry, Pathanamthitta.
- As a part of the RKI Pampa project, KSBB had imparted livelihood training to the local people from the selected BMCs based on bioresources through Krishi Vigyan Kendra in Pathanamthitta.
- KSBB had distributed saplings belonging to medicinal and native fruit plants to the local people of the selected BMCs to enhance the homestead biodiversity.
- TSG Meet was conducted on 19th February at Govt. Arts & Science College, Kozhikode. A total of 40 members including 25 TSG members attended the TSG meet programme.
- An awareness video on the importance of sea turtles was prepared for the first time in Kerala.

### 4.1. Restoration of Degraded Ecosystems through BMCs :-

During the reporting period KSBB initiated a novel project for restoring the local specific degraded ecosystems through BMCs. As a pilot project, based on proposals received from various BMCs, the following proposals were selected and provided financial assistance to BMCs concerned for the implementation of the project.

<b>Sl. No.</b>	<b>Name of BMC and District</b>	<b>Project title and major activities</b>	<b>Sanctioned amount (In Rs.)</b>
1.	Pothencode Block Panchayat, Thiruvananthapuram	<ul style="list-style-type: none"> <li>‘Avasatheeram’ – Mangrove afforestation and management along the banks of backwater regions in Kadinamkulam, Mangalapuram, Azhoor and Andoorkonam Grama Panchayats of the Block Panchayat.</li> </ul>	5 lakh
2.	Chithara Grama Panchayat, Kollam	<ul style="list-style-type: none"> <li>Conservation of Myristica Swamps – conservation of myristica swamps spread over 10 ha area in Arippa ward, conservation of bird’s ecosystem and the conservation of tributaries of Ithikkara river for enriching its water flow.</li> </ul>	4 lakh
3.	Velliyamattom Grama Panchayat, Idukki	<ul style="list-style-type: none"> <li>Biodiversity conservation of Kulangara Sacred Grove (50 cent area)</li> </ul>	3 lakh
4.	Perumbavoor Municipality, Ernakulam	<ul style="list-style-type: none"> <li>Conservation of Periyar river bank – conservation of Periyar river bank along 1 Km stretch under the jurisdiction of the Municipality through planting Vetiver.</li> </ul>	3 lakh
5.	Sreenarayanapuram Grama Panchayat, Thrissur	<p>The Niche profile based Eco restoration and Community based Management of Coastal Ecosystems ensuring sustainable livelihood</p> <ul style="list-style-type: none"> <li>Development of nursery for niche profiled indigenous species suitable for coastal sacred groves.</li> <li>Eco restoration of niche profiled three coastal ecosystems viz., 1) Coastal sandy beaches including Pandanus thickets as a mosaic, 2) The Canoly canal backwater banks and 3) the Sacred Groves with the involvement of local community.</li> </ul>	5 lakh
6.	Vazhayur Grama Panchayat, Malappuram	<p>‘Veeram Vazhayur’ Project – Rejuvenation and management of wetland ecosystems in Vazhayur. The major activities include:</p> <ul style="list-style-type: none"> <li>Protecting the banks of Chaliyar river through planting bamboo and other suitable riparian vegetation.</li> <li>In-situ Conservation of Neelakkalan konju (an indigenous variety of prawn).</li> <li>Conservation of ecosystems of migratory birds.</li> </ul>	5 lakh
7.	Thakakkulathur Grama Panchayat, Kozhikode	<ul style="list-style-type: none"> <li>Naduthuruthy conservation – conservation of banks of Naduthuruthy island in Korappuzha through planting bamboo species and other suitable riparian vegetation.</li> </ul>	2 lakh

8.	Kayanna Grama Panchayat, Kozhikode	<ul style="list-style-type: none"> <li>Restoration of Karikandanpara, a natural pachathuruthu, which was degraded due to various natural calamities.</li> </ul>	3 lakh
9.	Kaniyambetta Grama Panchayat, Wayanad	<ul style="list-style-type: none"> <li>Biodiversity conservation of two sacred groves i.e. Sree Panankandi Kiriyathan kavu &amp; Sree Kavumuttom Kandabhadra kavu.</li> </ul>	5 lakh
10.	Bedadka Grama Panchayat, Kasaragod	<ul style="list-style-type: none"> <li>Conservation of indigenous variety of coconut i.e. Bedakam coconut.</li> </ul>	3 lakh
11.	Thiruvallur Grama Panchayat, Kozhikode	<ul style="list-style-type: none"> <li>Conservation of natural islands, riparian ecosystems, mangroves, habitats of migratory birds, etc. in the nearby wetland areas of Eranjhipuzha and Thachar puzha.</li> </ul>	6 lakh
<b>Total</b>			<b>44 lakh</b>

**4.2. Preparation of PBR II Volume:-** During the reporting period KSBB mainly focussed on developing a methodology and guidelines for the preparation of PBR (People's Biodiversity Register) II volume through the validation and updation of existing PBRs in all the Grama Panchayats, Municipalities and Corporations. In order to prepare PBR II volume through BMCs, KSBB had drafted a methodology and guidelines after reviewing the pros and cons of the existing PBRs. Before finalising the draft guidelines, KSBB conducted a series of expert level consultations on 19.07.2022, 20.07.2022, 10.08.2022. And a state level workshop was also conducted on 20.09.2022 for all the stakeholders including LSGD representatives, district level officials of line departments, State Resource Group members, BMC Chairpersons and Secretaries from selected Grama Panchayats and Municipalities, etc. Thus by incorporating the suggestions raised in the expert level consultations and stakeholder's workshop, the guidelines for PBR II Volume was finalised.

Once the guidelines were developed, KSBB identified all the local bodies who had kept fund for PBR updation in their plan fund during the reporting period with the support of District Planning Office and provided regional training to all the identified 128 local bodies throughout the state. Altogether three regional trainings were held for concerned BMCs from 16<sup>th</sup> to 18<sup>th</sup> January at Kozhikode, Thrissur and Thiruvananthapuram respectively.



**4.3. Biodiversity Heritage Sites (BHS):-** During the reporting period, based on the proposal from Calicut University and the recommendation of the BMC of Thenjhipalam Grama Panchayat in

Malappuram district, submitted the proposal for Calicut University Botanical Garden BHS to the government for draft notification.

**4.4. BMC meet:-** Kerala State Biodiversity Congress held from 18<sup>th</sup> to 20<sup>th</sup> February 2023 at Govt. Arts & Science College, Kozhikode, a BMC Meet was conducted on 20<sup>th</sup> February. The programme was meant exclusively for the Chairpersons, Secretaries and Convenors of BMCs constituted at local bodies. As part of the event, KSBB invited all the BMCs from Malappuram, Kozhikode, Kannur & Kasaragod districts and selected BMCs from rest of the districts which include the BMCs undertaking KSBB aided local biodiversity conservation activities and preparation of local biodiversity action plan and also the BMCs which have kept fund for PBR updation. The programme was organized for giving awareness among the BMCs for undertaking sustainable development projects by considering the local situations of environment, biodiversity and ecosystems, to equip them for facing the challenges of climate change at local level and to find out the scope for undertaking locally specific biodiversity conservation projects through sharing experiences and case studies of other BMCs.

The programme was inaugurated by Smt. Kanathil Jameela, Hon'ble MLA of Koyilandy Constituency and the function was presided over by Dr. C. George Thomas, Chairman, KSBB. Dr. K.T. Chandramohanam, Member of KSBB welcomed the gathering and Dr. A.V. Santhoshkumar, Member Secretary of KSBB expressed vote of thanks. In the inaugural function, the guidelines prepared by KSBB for the preparation of PBR- II Part was also released by the MLA by giving a copy to Dr. Joy Elamon, Director General of KILA.

The technical session was initiated with the presentation of Dr. Joy Elamon, Director General of KILA on the topic 'Sustainable Development Goals and Biodiversity Conservation'. Followed that, the presentation of best practices of selected invited BMCs from various districts were carried out and the whole session was moderated by Sri. K.V. Govindan, Member of KSBB. A total of 18 BMCs viz., Kallikkad GP, Chithara GP, Pandalam Municipality, Ranni- Angadi GP, Muthukulam Block Panchayat, Kandallloor GP, Arakkulam GP, Velliyamattom GP, Athirappilly GP, Sreekrishnapuram GP, Akathethara GP, Azhiyur GP, Perumanna GP, Edavaka GP, Eramam – Kuttoor GP, Kadirur GP & Kinanoor- Karinthalam GP actively participated in the presentation. Also the moderator of the session has given clarification on queries raised by the audience regarding the presentations. A total of 390 persons from 185 BMCs participated in the BMC Meet.



**4.5. Preparation of Local Action Plan for Biodiversity conservation and management based on PBR (LBSAP):** Local Biodiversity management plan incorporating long planned term and short term activities for addressing threats to biodiversity, identifying focus area, action plan for Biodiversity conservation, awareness generation, capacity building of user groups and a plan for spatial natural

resources management in 21 BMCs was planned. This is expected to help in translating international and national biodiversity policies and targets into implementable action plans at the local level. Once completed, based on the merit of the prepared plans, these will be considered for implementation in 2023-24. In this F.Y KSBB had supported Rs. 2,00,000/- to selected 21 BMCs in three districts Alappuzha, Kannur and Idukki as given in the following table:

Sl. No.	Name of the district	Name of the BMC	Released Amount
1.	Kannur	1.Anjarakandy Grama Panchayat	Rs. 2,00,000/-
		2.Vengad Grama Panchayath	Rs. 2,00,000/-
		3.Peralassery Grama Panchayat	Rs. 2,00,000/-
		4.Chembilode Grama Panchayat	Rs. 2,00,000/-
		5.Muzhappilangad Grama Panchayat	Rs. 2,00,000/-
		6.Panniyannur Grama Panchayat	Rs. 2,00,000/-
		7.Malappattam Grama Panchayat	Rs. 2,00,000/-
		8.Eramam Kuttur Grama Panchayat	Rs. 2,00,000/-
2.	Alappuzha	9.Veeyapuram Grama Panchayat	Rs. 2,00,000/-
		10.Mararikulam North Grama Panchayat	Rs. 2,00,000/-
		11.Kanjikuzhy Grama Panchayat	Rs. 2,00,000/-
		12.Kainakary Grama Panchayat	Rs. 2,00,000/-
		13.Thakazhy Grama Panchayat	Rs. 2,00,000/-
		14.Vayalar Grama Panchayat	Rs. 2,00,000/-
3.	Idukki	15.Arakulam Grama Panchayat	Rs. 2,00,000/-
		16.Karimannoor Grama Panchayat	Rs. 2,00,000/-
		17.Kodikulam Grama Panchayat	Rs. 2,00,000/-
		18.Purapuzha Grama Panchayat	Rs. 2,00,000/-
		19.Kamakshy Grama Panchayat	Rs. 2,00,000/-
		20.Udumbanoor Grama Panchayat	Rs. 2,00,000/-
		21.Velliyamattom Grama Panchayat	Rs. 2,00,000/-

KSBB had provided one day district wise trainings in Idukki (03.02.2023) and Kannur (15.02.2023). Panchayat level trainings were organized in various panchayats in Kannur. District level training will be provided in Alappuzha in the month of April. The project is planning to be completed in six months.

**4.6. PBR digitalization:** Prepared an online platform (BIOMIS) for the digitalisation of the PBRs in Kerala with the technical support of NIC Kerala. Technical trainings have been provided to the Data Entry Operators in selected LSGDs as Master trainers. KSBB had prepared the master data of the flora and fauna in the PBRs in Kerala and submitted to NBA and NIC Kerala for finalization of the data and uploading in the BIOMIS software. The data entry is progressing in all the BMCs.

**4.7. Rebuild Kerala Initiative (RKI) project on biodiversity rejuvenation of Pampa river in Pathanamthitta district.**

Under the RKI project on biodiversity rejuvenation of Pampa river, various activities are being carried out in the selected 14 sites of Pathanamthitta District. In the reporting period the following activities were carried out.

a) **Homestead Biodiversity Enhancement Programme:** In order to enhance the biodiversity of the homestead areas in the selected BMCs, KSBB had distributed saplings belonging to medicinal and native fruit plants to BMCs of Vadasserikkara Gramapanchayat (21.04.2022), Vechoochira Gramapanchayat (06.05.2022) and Cherukol Gramapanchayat (06.04.2022). Earlier we have successfully conducted the same programme in BMCs of Kozhencherry Gramapanchayat (18.03.2022), Ranni-Pazhavangadi Gramapanchayat (21.03.2022), Ranni Gramapanchayat (31.03.2022), Ranni Angadi Gramapanchayat (12.04.2022), Ayiroor Gramapanchayat (24.03.2022).



b) **Livelihood training programme:** As a part of the RKI Pampa project, KSBB had imparted livelihood training to the local people from the selected BMCs based on bioresources. This activity was accomplished through Krishi Vigyan Kendra in Pathanamthitta. The details are given below:

b (1). **Livelihood training – Nursery Techniques:** As the part of Pampa Riverine Biodiversity Rejuvenation Project of Kerala State Biodiversity Board under the Rebuild Kerala Initiative, ten selected people from Ranni Perunad Grama Panchayath were trained in Nursery techniques. The training was conducted from 18th April to 19th April 2022 at the campus of ICAR-Krishi Vigyan Kendra, Thadiyoor. This skill training comprised of both theoretical and practical sessions in Plant nursery, potting mixture, Plant propagation- cutting, Layering, Grafting & Budding, Root stock preparation, Scion selection, Cover filling and planting, Diseases and pest in nursery, Record keeping in Nursery etc.

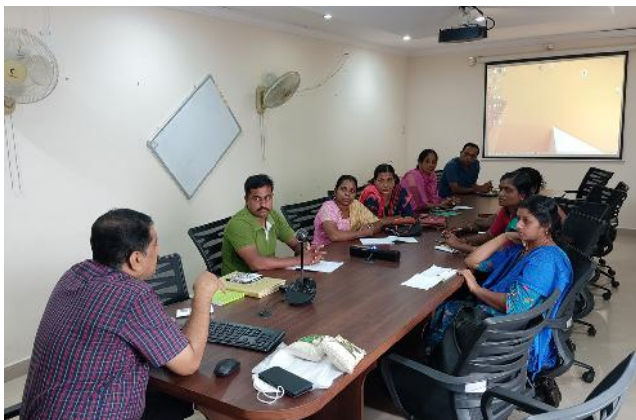


b (2). **Livelihood training – Mushroom Cultivation :** As the part of Pampa Riverine Biodiversity Rejuvenation Project of Kerala State Biodiversity Board under the Rebuild Kerala Initiative, ten selected people from various Grama Panchayaths were trained in Mushroom cultivation techniques during 17<sup>th</sup> & 18<sup>th</sup> May 2022 at the campus of ICAR-Krishi Vigyan Kendra, Thadiyoor. This skill training comprised of both theoretical and practical sessions and was handled by the experts from Krishi Vigyan Kendra, Thadiyoor.

b (3). **Livelihood training – Beekeeping:** As a part of Pampa Riverine Biodiversity Rejuvenation Project of Kerala State Biodiversity Board under the Rebuild Kerala Initiative, ten selected people from various Grama Panchayaths were trained in Beekeeping techniques at the campus of ICAR-Krishi Vigyan Kendra, Thadiyoor on 30th and 31<sup>st</sup> May 2022. The participants learned the structure of the hive, different types of bees, the cleaning method, the safety measures to be followed when treating bees, the equipment used in honey extraction, and the processing of the honey.



b (4). **Livelihood training – Medicinal plant nursery techniques:** As a part of the Pampa Riverine Biodiversity Rejuvenation Project of Kerala State Biodiversity Board under Rebuild Kerala Initiative, ten selected people from Ranni- Angadi Grama Panchayath were trained in Medicinal plant nursery techniques at the campus of ICAR-Krishi Vigyan Kendra, Thadiyoor on 27<sup>th</sup> June to 28<sup>th</sup> June 2022. This skill enhancement training consists of both theoretical and practical sessions. In the theoretical section, they took detailed classes on medicinal properties of plants, propagation methods and plants suitable for commercial cultivation. The practical section includes plant propagation techniques; stem cutting, seed germination methods, tuber cuttings, potting mixture preparation, cover filling, and planting methods. In addition, trainees shared their unique knowledge about medicinal plants with each other during the session.



c) **Development of biodiversity gardens:**

As a part of the Project we are setting up 10 Biodiversity Gardens in the project area with an agency names SUSTHIRA which was selected through EOI mechanism.

c (1). **Inauguration of planting at Thalachira Biodiversity Gardens** was conducted on 05.06.22. The biodiversity garden works were inaugurated by Sri. Raju Abraham, Pampa Monitoring team member in the presence of Smt. Latha Mohan, GP President, Smt. Komalam Anirudhan, Block Member, Ward members, HM Sri. Manoj, PTA members, students, SUSTHIRA team etc

- c (2). **Inauguration of planting at Edamury Biodiversity Gardens** was conducted on 06.06.22. The Program was inaugurated by Smt. Jessy Alex, District Panchayath Member & Smt. Beena Joby, President, Naranamoozhy GP in the presence of Vice President Sri. Rajan Neeramplackal, PTA President Sri. Prasannakumar, HSS Principal, HS HM in charge, Ward members etc
- c (3). **Inauguration of planting at Kozhencherry Biodiversity Gardens** was conducted on 22.11.22. The Kozhencherry Biodiversity Garden (Near Thanungattil Bridge) program was inaugurated by Smt. Gigi Mathew, Grama Panchayath President in the presence of Ward members, KSBB District Coordinator and BMC members, etc

The planting inauguration of the Biodiversity Garden under the RKI-Pampa Project at Kozhencherry (Near Thanungattil Bridge) of Kozhencherry Grama Panchayath was inaugurated on 22<sup>nd</sup> November 2023 by the President Smt. Jiji Varughese in the presence of Vice President, Standing Committee Chairpersons, Ward Members, BMC Convener, BMC Members, Biodiversity Board District Coordinator, and public.

No	Name of the Grama Panchayath	Name of the Location
1.	Kozhencherry	Govt. HS, Kozhencherry-
2.	Kozhencherry	Kozhencherry (Thanungattil Bridge)-
3.	Ayroor	MTHS Ayroor
4.	Cherukol	Govt.LPS Cherukol
5.	Ranni Angadi	Govt.LPS Pulloopram
6.	Ranni Pazhavangadi	SCHSS, Ranni
7.	Naranamoozhi	Govt. HS, Edamury
8.	Vadasserikkara	Govt.LPS Thalachira
9.	Vechoochira	GLPS Kunnam

- d) **Rejuvenation of tributaries of Pampa River:** The water supply to the river is through its tributaries. Hence, tributary rejuvenation has an important role in the rejuvenation of any river. Pampa River is charged by numerous small and large rivulets and streams and after the flood many of these tributaries are filled with mud, slit and waste materials which seriously affects the normal flow of water through them. In this project, 10 streams as suggested by the 7 BMCs in the project area were selected for rejuvenation after conducting field visits. The process will involve removal of mud/sludge, deposited invasive plants, plastic waste etc from the streams as well as clearing the normal flow of water through them. The funds have been transferred to the selected BMCs and the works are being implemented through local body of the BMC, MGNREGS workers and Minor irrigation department.

#### List of tributaries selected for rejuvenation

No	Name of the Grama Panchayath	Name of the tributary
1.	Ayroor	Valiyathodu (2.0 km)
		Puramannil thodu (2.00 km)
2.	Ranni	Moonnu cent colony - Pulikkappadi Kadavu thodu (2.5 km)
		Padiyarakkadavu - Aramanappadi thodu (2.00 km)



3.	Ranni-Angadi	Valiyathodu (3.00 km)
4.	Ranni-Pazhavangadi	Valiyathodu (1.00 km)
5.	Vadasserikkara	Kumplampoika - Karaykkat thodu
		Chovvoor thodu
6.	Vechoochira	Paruvathodu
7.	Ranni-Perunad	Madathil thodu (2.50 km)

#### 4.8. Technical support Group Meet

A regional meet of the Technical support Group (TSG) was organized as a part of the 2<sup>nd</sup> KSBC during 19.02.2023. In this regional meet, TSG members from Palakkad, Thrissur, Kozhikode, Malappuram, Wayand, Kannur and Kasargode were invited along with this, Range Forest officers from the North Circle were also invited. The TSG meet was organized in the 2<sup>nd</sup> venue (Karnikaram) by 12 PM onwards and concluded by 5 PM. The inaugural speech was delivered by Shri KV Govinan, Board Member KSBB. The presidential speech was delivered by Dr. KT Chandramohan, Board Member KSBB. This was followed by the technical sessions which included invited talks by subject experts. First technical session was handled by Dr. RV Verma, Former Chairman, KSBB and in his speech, Dr. Verma explained the "Salient features of Biodiversity act 2002" and the roles and responsibilities of TSG members. He also highlighted the importance of collaboration of TSG members with BMCs for better biodiversity conservation activities and the importance of People Biodiversity Register, activities of BMCs and biodiversity act and rule. This was followed by the speech by Dr. Dinesan Cheruvat (Additional director of Fisheries, MD of Matsyafed) on the topic, "Potential Threats by Invasive Alien fishes to endemic fish fauna of Kerala". In his speech Dr. Dinesan Cheruvat explained the devastating effects of invasive fish species in the fish biodiversity of Kerala by giving specific examples of Rainbow trout, Common Carp, Golden carp, Tilapia etc. He also explained the actions taken by the Govt. of India and legal regulations such as 'Kerala Inland fisheries and aqua culture act 2010', 'Kerala fish seed act 2014' etc which are very relevant to the current topic. This session was followed by the technical session by Dr. Vani Kesari (Director, Prof. N R Madhava Menon ICREP, Former Director, School of Legal Studies, CUSAT) on the topic "Relevance of Access Benefit Sharing (ABS) System". She gave information on the connection of bio theft and bio piracy to ABS and also explained how these activities will adversely affect the biodiversity.



After the technical sessions, TSG members shared their experiences and raised their suggestions to make the TSG system more effective. Following this, Dr. V Balakrishnan (Kasargod Vigilance DySp) & Mr. Pramod G Krishnan IFS (Head, Vigilance wing of Kerala Forest Department and additional

principal chief conservator of Forests) were expressed their views and replied to the comments raised by TSG members . Around 40 members including 25 TSG members attended the TSG meet programme.

#### 4.9. Preparation of an awareness video on the importance of conservation of sea turtles:

An awareness video on the importance of conservation of sea turtles was successfully prepared through an expert in the field (Shri. Sashikumar Ambalathara, PRD panel film director). The video is 30 minutes long explaining the conservation status of sea turtles, their nesting sites and challenges faced by these species in this era. The video also covers the various actions taken up by BMCs in Thrissur and Malappuram districts for the proper conservation of the eggs of these endangered species. The video was released by Shri. P. A. Mohammed Riyas, Hon'ble Minister for Public Works and Tourism during the 2<sup>nd</sup> Kerala State Biodiversity Congress held in Kozhikode on 19<sup>th</sup> February 2023.



# 5

## Major Activities Conducted in Various Districts

### 5.1. BMC meetings held in Thiruvananthapuram district

Sl.No.	Name of BMC	Date of Meeting
1	Andoorkonam GP	21.11.2022
2	Chirayinkeezhu GP	20.07.2022, 13.01.2023
3	Kalliyoor GP	16.11.2022
4	Kattakkada GP	06.10.2022
5	Kuttichal GP	19.08.2022, 19.10.2022
6	Nagaroor GP	21.01.2023
7	Nanniyode GP	30.04.2022
8	Pazhayakunnummel GP	11.08.2022, 30.01.2023

9	Peringammala GP	19.05.2022
10	Poovar GP	09.06.2022, 02.07.2022
11	Pulimath GP	04.07.2022
12	Vilappil GP	26.05.2022
13	Vithura GP	18.07.2022
14	Thiruvananthapuram Corporation	30.07.2022
15	Vellanad Block Panchayat	11.05.2022
16	Pothencode Block Panchayat	16.08.2022



BMC meeting at Chirayinkeezhu Gramapanchayath



BMC meeting at Nedumangad block BMC

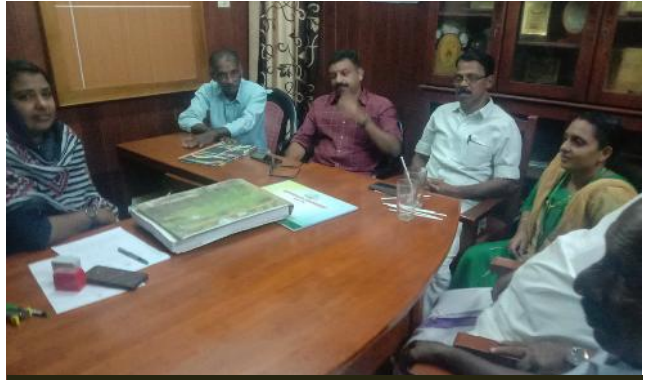
### 5.2. BMC meetings held in Kollam district

Sl.No.	Name of BMC	Date of Meeting
1	Alayamon GP	27.01.2023
2	Anchal GP	22.11.2022
3	Chithara GP	29.10.2022
4	Elamadu GP	04.11.2022
5	Ittiva GP	24.01.2023
6	Kulasekharapuram GP	09.03.2023
7	Kulathupuzha GP	25.07.2022

8	Kummil GP	04.06.2022, 28.12.2022
9	Melila GP	21.06.2022
10	Munroethuruthu GP	09.02.2023
11	Nedumpana GP	17.01.2023
12	Neendakara GP	07.04.2022
13	Nilamel GP	23.11.2022
14	Karunagappally Municipality	09.03.2023
15	Kollam Coporation	08.02.2023



BMC meeting at Karunagappalli Municipality



BMC meeting at Kulasekharapuram Gramapanchayath

### 5.3. BMC meetings held in Pathanamthitta district

Sl. No.	Name of BMC	Date of Meeting
1	Chittar GP	28.09.2022
2	Kozhencherry GP	30.06.2022, 23.08.2022, 26.08.2022
3	Mallappuzhassery GP	13.10.2022
4	Ranni GP	23.12.2022

5	Ranni Pazhavangadi GP	16.12.2022
6	Ranni Perunadu GP	13.05.2022, 24.06.2022
7	Vadasserikkara GP	07.04.2022
8	Elanthoor Block Panchayat	21.01.2023



BMC meeting at Chittar Gramapanchayath



BMC meeting at Ranni Perunad Gramapanchayath

### 5.4. BMC meetings held in Alappuzha district

Sl. No.	Name of BMC	Date of Meeting
1	Aryad GP	31.01.23
2	Chettikulangara GP	07.02.2023
3	Kandalloor GP	25.04.2022
4	Kanjikuzhy GP	22.07.2022, 25.10.22
5	Karuvatta GP	30.01.23
6	Kavalam GP	19.08.2022

7	Mararikulam North GP	22.03.2023
8	Mararikulam South GP	01.12.2022, 16.01.2023
9	Muhamma GP	12.01.2023
10	Muthukulam GP	28.04.2022
11	Purakkad GP	08.12.2022, 15.12.2022
12	Thakazhy GP	12.01.2023, 22.03.2023

13	Vallikunnam GP	23.02.23
14	Veeyapuram GP	27.04.2022, 16.12.2022

15	Alappuzha Municipality	17.06.2022
16	Muthukulam Block Panchayat	02.08.2022, 19.12.2022



BMC meeting at Aryad Gramapanchayath



BMC meeting at Muhamma Gramapanchayath

#### 5.5 BMC meetings held in Kottayam district

Sl.No.	Name of BMC	Date of Meeting
1	Kanakkary GP	10.06.2022
2	Marangattupilly GP	30.04.2022

3	Ramapuram GP	07.05.2022, 16.05.2022,
4	Ramapuram GP	16.07.2022

#### 5.6 BMC meetings held in Idukki district

Sl. No.	Name of BMC	Date of Meeting
1	Alakkode GP	12.08.2022
2	Arakkulam GP	12.05.2022, 22.05.2022, 08.11.2022, 07.02.23, 15.07.2022, 17.09.2022
3	Edavetty GP	26.04.2022, 25.06.2022, 16.01.23, 12.07.2022
4	Idukki Kanjikuzhy GP	05.06.2022
5	Kamakshy GP	07.03.2023
6	Kanchiyar GP	08.02.2023
7	Karimannoor GP	22.08.2022
8	Karimkunnam GP	11.01.2023
9	Kodikulam GP	07.04.2022, 14.07.2022, 13.09.2022

10	Kumaramangalam GP	05.05.2022
11	Kumily GP	10.11.2022
12	Manakkad GP	20.06.2022, 03.03.23, 14.03.23
13	Marayoor GP	21.11.2022
14	Mariyapuram GP	18.05.2022, 24.05.2022, 15.06.2022, 20.01.23
15	Munnar GP	24.03.2023
16	Pampadumpara GP	17.10.2022
17	Peerumede GP	24.02.2023
18	Peruvanthanam GP	13.05.2022, 23.05.2022 20.07.2022
19	Purappuzha GP	24.08.2022, 30.01.23
20	Rajakumari GP	21.04.2022

21	Santhanpara GP	17.01.23
22	Udumbannoor GP	10.10.2022
23	Vathikudy GP	16.03.2023
24	Vattavada GP	13.01.23
25	Vazhathoppu GP	21.02.2023
26	Velliyamattom GP	20.08.2022



BMC meeting at Karimannoor Gramapanchayath

27	Kattappana Municipality	15.11.2022
28	Thodupuzha Municipality	17.06.2022, 13.10.2022, 23.11.22, 04.01.23, 14.03.2023
29	Thodupuzha Block Panchayat	25.01.2023



BMC meeting at Vathikudy Gramapanchayath

### 5.7 BMC meetings held at Palakkad district

Sl.No.	Name of BMC	Date of Meeting
1	Agali GP	27.01.2023
2	Akathethara GP	12.05.2022, 05.07.2022
3	Elappully GP	08.08.2022, 09.12.2023
4	Koduvayur GP	22.02.2023
5	Kollengode GP	03.01.2023
6	Malampuzha GP	04.01.2023
7	Mankara GP	22.04.2022, 26.07.2022, 31.10.2022
8	Mathur GP	03.06.2022

9	Mundur GP	28.11.2022
10	Muthuthala GP	18.06.2022, 02.07.2022
11	Nagallassery GP	17.12.2022
12	Nenmara GP	01.09.2022, 25.11.2022
13	Pallassana GP	19.12.2023
14	Sreekrishnapuram GP	08.02.2023
15	Thachampara GP	10.05.2022
16	Vadakkenchery GP	14.07.2022, 21.11.2022
17	Vellinezhi GP	01.06.2022



BMC meeting at Koduvayur Gramapanchayath



BMC meeting at Agali Gramapanchayath

### 5.8 BMC meetings held at Ernakulam district

Sl.No.	Name of BMC	Date of Meeting
1	Edakkattuvayal GP	07.04.2022
2	Thrikkakkara Municipality	23.06.2022
3	Palakkuzha GP	13.12.2022
4	Poothrika GP	14.06.2022
5	Eloor Municipality	08.02.2023

6	Kothamangalam Municipality	24.02.2023
7	Kizhakkambalam GP	19.01.2023
8	Angamaly Block Panchayat	13.02.2023
9	Koovappady Block Panchayat	28.01.2023
10	Palluruthy Block Panchayat	27.01.2023



BMC meeting at Koovappady Block Gramapanchayath



BMC meeting at Palakkuzha Gramapanchayath

### 5.9 BMC meetings held in Malappuram district

Sl. No.	Name of BMC	Date of Meeting
1	Anakkayam GP	22.07.2022, 26.09.2022
2	Koottilangadi GP	13.05.2022
3	Kuzhimanna GP	07.06.2022
4	Makkaraparamba GP	25.04.2022, 21.07.2022
5	Mampad GP	30.03.2023
6	Moothedam GP	06.08.2022
7	Pookkottur GP	12.05.2022
8	Tavannur GP	08.04.2022, 05.07.2022, 16.08.2022
9	Thenjhippalam GP	11.10.2022
10	Vazhayur GP	31.05.2022, 07.10.2022, 28.03.2023
11	Veliyancode GP	03.12.2022
12	Malappuram Municipality	14.03.2023
13	Nilambur Municipality	24.05.2022



BMC meeting at Thenhippalam Gramapanchayath



BMC meeting at Vazhayur Gramapanchayath

### 5.10 BMC meetings held in Thrissur district

Sl. No.	Name of BMC	Date of Meeting
1	Edathiruthy GP	25.07.2022

2	Koratty GP	24.02.2023
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### 5.11 BMC meetings held in Kannur district

Sl No.	Name of BMC	Date of Meeting
1	Anjarakandy GP	19.10.2022, 20.02.2023, 28.02.2023
2	Chembilode GP	09.11.2022, 02.02.2023
3	Chirakkal GP	11.11.2022
4	Eramam Kuttoor GP	06.08.2022, 07.10.2022, 29.11.2022, 02.12.2022, 12.12.2022, 03.02.2023
5	Kadirur GP	07.12.2022, 31.01.23
6	Kankole - Alappadamba GP	16.11.2022, 22.11.2022, 12.12.2022, 30.01.2023, 09.02.2023
7	Kannapuram GP	15.12.2022
8	Kottayam GP	12.01.2023, 23.01.2023
9	Kunhimangalam GP	11.01.2023

10	Kurumathur GP	01.12.2022
11	Malappattam GP	28.10.2022, 02.02.2023
12	Mangattidam GP	08.02.2023
13	Mokeri GP	07.01.2023
14	Muzhakkunnu GP	20.10.2022, 31.10.2022
15	Narath GP	25.10.2022
16	Panniyannur GP	11.11.2022
17	Pappinisseri GP	03.02.2023
18	Pattiam GP	03.02.2023
19	Peralassery GP	26.10.2022
20	Peravoor GP	18.01.2023
21	Pinarayi GP	20.01.2023
22	Valapattanam GP	03.02.2023
23	Vengad GP	15.11.2022
24	Anthoor Municipality	16.11.2022
25	Iritty Municipality	17.02.2023
26	Kuthuparamba Municipality	28.10.2022
27	Payyannur Municipality	13.02.2023



BMC meeting at Kunjimangalam Gramapanchayath



BMC meeting at Muzhakkunnu Gramapanchayath



### 5.12 BMC meeting held in Wayanad district

Sl. No.	Name of BMC	Date of Meeting
1	Ambalavayal GP	02.12.2022
2	Edavaka GP	26.04.2022, 19.05.2022, 14.02.2023, 07.03.2023, 16.09.2022, 10.11.2022
3	Kaniyambetta GP	06.08.2022
4	Muttil GP	24.08.2022

5	Panamaram GP	12.05.2022, 22.09.2022, 03.01.2023
6	Pozhuthana GP	05.01.2023
7	Pulpally GP	23.08.2022
8	Vellamunda GP	17.03.2023
9	Mananthavady Municipality	07.02.2023
10	Wayanad District Panchayat	12.07.2023

### 5.13 BMC meeting held in Kozhikode district

Sl. No.	Name of BMC	Date of Meeting
1	Atholi GP	23.08.2022
2	Azhiyur GP	26.12.2022
3	Chelannur GP	18.05.2022, 07.11.2022, 31.01.2023, 14.03.2023
4	Chemanchery GP	04.01.2023, 24.02.2023
5	Kadalundi GP	16.09.2022
6	Kakkodi GP	31.08.2022, 28.10.2022
7	Kayanna GP	19.07.2022, 29.10.2022, 25.10.2022, 19.01.2023
8	Keezhariyur GP	05.04.2022, 01.06.2022
9	Kunnamangalam GP	31.08.2022
10	Maniyur GP	11.05.2022
11	Nadapuram GP	13.05.2022
12	Nanminda GP	08.07.2022
13	Narikkuni GP	17.05.2022, 18.11.2022
14	Olavanna GP	28.05.2022, 01.06.2022, 29.07.2022
15	Omassery GP	20.04.2022, 21.10.2022

16	Perumanna GP	12.04.2022, 07.06.2022, 16.02.2023, 27.02.2023, 27.10.2022
17	Peruvayal GP	26.05.2022, 19.10.2022, 09.11.2022, 23.02.2023, 09.06.2022
18	Purameri GP	25.10.2022
19	Thalakkulathur GP	10.06.2022
20	Thiruvallur GP	30.07.2022
21	Thurayur GP	02.07.2022
22	Valayam GP	25.05.2022, 08.11.2022
23	Vanimel GP	15.09.2022
24	Feroke Municipality	30.01.2023
25	Koyilandy Municipality	06.02.2023
26	Vadakara Municipality	04.11.2022
27	Kozhikode Corporation	31.12.2022
28	Tuneri Block Panchayat	16.08.2022, 28.03.2023
29	Melady Block Panchayat	27.01.2023
30	Kozhikode District Panchayat	06.05.2022, 24.03.2023



BMC meeting at Koyilandy Gramapanchayath



BMC meeting at Kozhikode Corporation

#### 5.14 BMC Meetings held in Kasaragod district

Sl. No.	Name of BMC	Date of Meeting
1	Ajanur GP	21.12.2022
2	Badiadka GP	31.01.2023
3	Balal GP	23.03.2023
4	Bedadka GP	10.02.2023
5	Chemnad GP	15.02.2023
6	Cheruvathur GP	09.03.2023
7	Enmakaje GP	20.12.2022
8	Kallar GP	23.03.2023
9	Karadka GP	23.07.2022, 13.03.2023
10	Kinanoor - Karinthalam GP	15.03.2023
11	Kumbadaje GP	14.02.2023
12	Kumbala GP	12.08.2022
13	Kuttikol GP	29.11.2022, 01.02.2023
14	Madhur GP	10.03.2023
15	Madikai GP	01.02.2023, 03.03.2023
16	Manjeswar GP	26.12.2022
17	Mogral Puthur GP	11.01.2023
18	Muliyar GP	07.07.2022, 24.02.2023
19	Paivalike GP	22.12.2022
20	Pallikkere GP	06.10.2022, 03.12.2022, 10.02.2023, 03.03.2023
21	Pilicode GP	24.01.2023
22	Pullur Periya GP	29.12.2022

23	Thrikkarippur GP	12.07.2022, 20.08.2022, 03.12.2022, 19.09.2022
24	Udma GP	18.07.2022, 27.09.2022
25	Valiyaparamba GP	19.11.2022
26	Kanhangad Municipality	01.02.2023
27	Kasargode Municipality	12.08.2022, 03.01.2023
28	Nileshwar Municipality	11.07.2022, 30.08.2022
29	Manjeswar Block Panchayat	18.03.2023
30	Kasaragod Block Panchayat	16.03.2023
31	Kanhangad Block Panchayat	16.03.2023
32	Nileswar Block Panchayat	18.01.2023
33	Kasaragod District Panchayat	10.01.2023



BMC meeting at Pallikkara Gramapanchayath

# 6

## Access and Benefit Sharing (ABS) & Legal Issues

### Major Achievements

- A Red Data Book of Kerala incorporating details of threatened flora and fauna of Kerala under IUCN and various schedules of Wildlife Protection Act 1972 and other legislations was prepared
- A two year state wide project for Identification, creation of database, propagation, conservation and value addition of wild and underutilized agricultural crops was launched in association with 18 partners including Agricultural universities and research institutes covering wild edible fruits, vegetables, tubers, rhizomes, legumes, millets, pulses etc.
- Ecological restoration and Agrodiversity conservation at College of Agriculture, Vellayani : A project for state wide survey, germ plasm collection of wild relatives/ land races and farmers varieties of different crops, establishment of agrodiversity conservatory of wild relatives/ land races and farmers varieties of prioritized crops, development of Seed banks and Millet museum is ongoing
- A State Biodiversity Strategies and Action Plan giving thrust to sustainable development, livelihood security and nutritional security with an overall approach to reduce poverty especially at the local level was developed with details of major threats to biodiversity in Kerala in different sectors, policy recommendations for conservation of biodiversity, and action plan for the next ten years
- KSBB with funding support of Rebuild Kerala Initiative undertook a study of tradable bioresources with the objective of identifying various floral bioresources being traded in the State, assessing its volume and economic potential as well as inventorizing the bioresource-based industries operating in the State was undertaken. The project covered bioresources from forest, outside forest, marine and fresh water resources.
- A database of >3900 aquatic species has been generated and a consolidated checklist of 185 tradable bio-resources and products prepared after extensive consultation with about 4000 fishermen covering 138 marine landing centers
- An exhaustive inventory of the floral bioresources of the state and checklists prepared for Mushrooms (85), RET species (645), endemic plants (152), Trees of Kerala (855), Timber (161), Trees Outside the Forest (90), Bamboos & Reed species (55), Exotic fruit trees cultivated (26), Orchid (126), Orchids in forests having floricultural potential (16), Passport script data of the Non Wood Forest Produce of Kerala State has been prepared.
- The total economic value of bioresources of the state was calculated and a rough estimate of the ABS potential from, based on biological resources' purchased price by the industries or based on the raw-material cost has been worked out.
- A project for developing nurseries of rare, endangered and threatened plants and their propagation through Kudumbasree in Thiruvananthapuram district of Kerala was completed and training on different propagation techniques, setting up of nurseries, planting operations and after care and supply of quality planting materials of RET species was conducted.
- With a view to develop a policy for prevention of introduction of invasive alien species and management of invasive alien species in terrestrial and aquatic ecosystems of Kerala state, a two-day National Seminar on Bioinvasions - Trends, Threats and Management was held
- A three-month skill development programme for livelihood improvement of tribal youth of Marayoor panchayat has been initiated, beneficiaries identified and program is ongoing.
- Twenty-one tribal families of Kuttichal Gramapanchayath were provided training in stingless beekeeping, dividing the colony, pure honey collection and management of the stingless bees and honeybee colonies were also distributed for sustainable livelihood of the selected tribal farmers
- Pallichal BMC initiated Sundaravanam, the medicinal plant garden project in five selected schools of the Panchayath.
- Biodiversity studies were conducted in 10 selected locations
- The Board supported 3 doctoral fellows for conducting research on various aspects of biodiversity
- During the period of 2022-2023 KSBB provided internship to 40 Students from different institutes.
- Capacity Building workshop on BD Act, 2002 and ABS was conducted for Technical Support Groups, Forest Officials, Research institutions, Line departments and Virtual Biodiversity Cadre members
- Capacity Building workshop on BD Act, 2002 and ABS was conducted for local government bodies, BMC's,

District Panchayat secretaries, Mayors of corporations, District level planning officers, Assistant Development Commissioners, Deputy Director of Panchayats, District officers of Agriculture, Animal Husbandry, Economics and statistics, and Fisheries

- Ex situ conservatories of red listed species: The Kerala State Biodiversity Board has successfully implemented the project titled "Ex situ Conservatories for red listed Plant Species" within the state.

## **6.1. Plan schemes**

### **6.1.1. Preparation of Red Data Book and Assessment of Threatened Species of Kerala**

KSBB in 2020 initiated a project for listing comprehensive details of floral and faunal species under various threatened categories of IUCN, schedule species under Wildlife Protection Act 1972 and other legislations. A comprehensive document, being the first analysis of the threatened species of Kerala, according to the Global Red List criteria, was prepared by Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) Palode, with the financial support of Kerala State Biodiversity Board during the reporting period. A total of 1274 taxa, coming under various categories such as Extinct in the Wild (EW), critically endangered (CR), Endangered (EN), Vulnerable (VU), Near threatened (NT), Least Concern (LC) and Data deficient (DD) belonging to various plant groups such as Bryophytes, Pteridophytes, Gymnosperms and Angiosperms are listed within the document. The report prepared using the criteria of the International Union for Conservation of Nature (IUCN), notes that 264 species of flowering plants (angiosperms) in the State are facing threat of extinction in varying degrees. They have been categorized into 44 Critically Endangered (CR) species, 113 Endangered (EN) species and 107 Vulnerable (VU) species. Besides these, four gymnosperms, three pteridophytes and one bryophyte also have been listed as 'threatened' in the State. Most of the threatened species are exclusive endemics whose distribution is restricted to the Western Ghats region as well as to the State of Kerala.

### **6.1.2. Development of nurseries and propagation of RET species/species notified under the Biological Diversity Act 2002.**

A project for developing nurseries of rare, endangered and threatened plants and their propagation through Kudumbasree in Thiruvananthapuram district of Kerala has been initiated during 2021-22. It aims to provide livelihood opportunities to the Kudumbasree workers and ensure quality planting materials of RET species. Training was provided to selected Kudumbasree workers of Thiruvananthapuram on different propagation techniques, setting up of nurseries, planting operations and after care. Shri Shinu Madathara, President of Preningamala Gramapanchayat inaugurated the programme by distributing RET plant species to participants. Dr.C. George Thomas, Chairman of the board, presided over the function. Dr.Santhoshkumar A V, Member Secretary explained the concept and importance of the project. Dr.R.Prakash Kumar, Director and Dr.Nazarudeen Ahammed, Senior Scientist of JNTBGRI attended the event. The inaugural session followed by a technical session was attended by 50 selected Kudumbashree members from Thiruvananthapuram. KSBB Board Members K.V.Govindan and Dr.K.Satheesh Kumar delivered lectures on the necessity of conservation and establishing nurseries of RET plant species. JNTBGRI scientists disseminated awareness on different propagation techniques, setting up of nurseries, planting operations and aftercare of selected RET species. Seedlings/planting materials of different species, including RET species and indigenous variety of fruit trees were also supplied. Consequently, eight training programme were conducted on 08/06/2022, 15/06/2022, 22/06/2022, 29/06/2022, 05/07/2022, 12/07/2022, 19/07/2022 and 26/07/2022.

### 6.1.3. Identification, creation of database, propagation, conservation and value addition of wild and underutilized agricultural crops

Kerala has a unique collection of native wild edible leafy vegetables, tubers, fruits, pulses and edible mushrooms which have been neglected or underutilized. Most of them are being used by the tribal communities and are a rich source of carbohydrates, fats, proteins, energy, vitamins and minerals and dietary fibre. A two year state wide project for Identification, creation of database, propagation, conservation and value addition of wild and underutilized agricultural crops was launched in association with 18 partners including Agricultural universities and research institutes at a total outlay of Rs 159.75 lakh. These project aims to identify, create a data base, propagate, conserve, and develop value added products out of these underutilized wild edibles, with the support of various R&D institutions. Promotion of development of value added products, which have the potential to give economic and nutritional security to people, especially the tribals is targeted. The project covers wild edible fruits, vegetables, tubers, rhizomes, legumes, millets, pulses etc.

SL.No.	Name and address of Principal Investigator	Name of the project
1	<b>Dr. M. Sangeeta Kutty</b> , Department of Vegetable Science, College of Agriculture, Kerala Agricultural University, Vellanikkara	Collection, conservation and characterization of underutilized edible vegetable crops of Kerala
2	<b>Dr. Anupama T.V</b> , Assistant Professor (Horticulture) Department of Post Harvest Technology, College of Agriculture, Vellanikkara	Identification, data base creation, nutritional profiling and assessment of value addition potential of underutilized leafy vegetables of Kerala
3	<b>Dr. Sreelatha U</b> , Professor (Horticulture), Department of Floriculture & Landscape Architecture, College of Agriculture, Vellanikkara	Identification, creation of database, propagation, conservation and value addition of wild and underutilized edible flower varieties of Kerala under the scheme Biodiversity conservation 2022-23
4	<b>Dr. Asish I. Edakkalathur</b> , Assistant Professor, Department of Plant Breeding & Genetics, College of Agriculture, Kerala Agricultural University, Thrissur	Survey, collection, characterization, database creation, and conservation of underutilized legumes in Central Kerala
5	<b>Dr. Shakeela V</b> , Director, Community Agrobiodiversity Centre M S Swaminathan Research Foundation Puthurvayal, Kalpetta, Wayanad, Kerala	Prospects of Neglected and Underutilized and Cultivated Tubers in Attaining Nutrition and Livelihood Security
6	<b>Dr. Anisha S</b> , Assistant Professor Department of Botany, St.Albert's College (Autonomous), Ernakulam	Documentation of Wild and Underutilized edible varieties of leafy vegetables, tubers, fruits and pulses used by Tribes of Idukki, Ernakulam, Thrissur, Palghat and Malappuram Districts of

		Kerala and Nutritional profiling, and value addition of Selected species
7	<b>Dr. Bindhu B,</b> Assistant Professor (Horticulture), Farming System Research Station, Kerala Agricultural University Sadanandapuram	Collection and conservation of local cultivars, wild and underutilized edible varieties of fruits of Northern Kerala for creation of fruit museum
8	<b>Dr. Shyam Kumar S,</b> Assistant Professor, PG and Research department of Botany, Government College for Women, Tvpmm	Seaweed as a completely sustainable future food for Kerala
9	<b>Dr. Jose Mathew,</b> Assistant Professor, Department of Botany, Sanatana Dharma College, Alappuzha	Identification, documentation, propagation, conservation and value addition of wild edible tubers of Kerala part of South Western Ghats
10	<b>Dr. Resmi L,</b> Assistant Professor, Department of Botany, University of Calicut	Documentation, nutritional evaluation and value addition of underutilized banana varieties from Kerala
11	<b>Dr. Deepu Sivadas,</b> Scientist B Forest Ecology Department, Kerala Forest Research Institute, Peechi	Identification and database development of dye-yielding plants in Kerala with emphasis on natural food colorants
12	<b>Dr. C.K.Pradeep,</b> Principal Scientist & Head, Microbiology Division, JNTBGRI, Palode	Documentation, database and conservation of edible mushroom resources of Kerala
13	<b>Dr. Nazarudeen Ahammed,</b> Senior Scientist, Plant Systematics and Evolutionary Science Division, JNTBGRI, Palode	Survey, collection, identification, creation of database, value addition and nutritive evaluation of wild and underutilized edible fruits of Southern Kerala
14	<b>Dr. Sreekumar S,</b> Principal Scientist & Scientist-in charge, Saraswathy Thangavelu Extension Centre, KSCSTE- JNTBGRI, Puthenthope, Tvpmm	Database on anti-viral plants with emphasize on nutraceuticals in silico validation of photochemicals and formulation of a herbal products
15	<b>Dr. Rose Mary Francis,</b> Professor (Plant Breeding and Genetics), Agricultural Research Station, Kerala Agricultural University, Mannuthy P.O., Thrissur	Collection, conservation, propagation and database indexing of wild and underutilized edible leafy vegetables, tubers and pulses in northern Kerala
16	<b>Dr. Asha K.I,</b> Principal Scientist, Division of Crop Improvement, ICAR-CTCRI, Sreekariyam, Tvpmm	Collection and database creation of important named landraces of tuber crops from Southern districts of Kerala

17	<b>Dr. N.M.Krishnakumar,</b> Scientist B, Department of Biosciences, Rajagiri College of Social Sciences (Autonomous), Kalamassery, Kochi	Identification, creation of database and value addition of wild and underutilized edible varieties of leafy vegetables, tubers, fruits and pulses by the tribes of Trivandrum, Kollam and Alappuzha districts
18	<b>Dr. Poornima Yadav,</b> Assistant Professor (Agronomy) Onattukara Regional Agricultural Research Station, Kerala Agricultural University, Kayamkulam, Alappuzha district	Identification, creation of database, propagation, conservation, and value addition of wild and underutilized edible varieties of millets in Kerala

#### 6.1.4 Ecological restoration and Agrodiversity conservation at College of Agriculture, Vellayani

A Rs 125 lakh project for Ecological restoration and Agrodiversity conservation at College of Agriculture, Vellayani was initiated. State wide survey, germplasm collection of wild relatives/land races and farmers varieties of different crops and development of a digital data base of agrodiversity of Kerala is planned. Establishment of agrodiversity conservatory of wild relatives/ land races and farmers varieties of prioritized crops including rice, vegetables, fruit plants, millets, legumes, tuber crops and spices are envisaged. Seed banks and Millet museum is also planned along with this. The main objectives are:

- To collect the wild relatives/land races and farmers varieties of different crops such as rice, vegetables, fruit crops, legumes, millets, tuber crops and spices from all over Kerala and to make a digital data base of the agrobiodiversity of Kerala.
- To establish agro biodiversity at College of Agriculture, Vellayani of prioritized crops such as rice vegetables fruits plants millets legumes tuber crops and spices
- To establish seed bank for conservation of collected varieties/land races/wild relatives of prioritised crops
- To document and digitise the floristic diversity of College of Agriculture, Vellayani
- To conduct trainings/awareness campaigns for farmers and BMCs on conservation of agro biodiversity



#### 6.1.5 Invasive species

Invasive Alien Species (IAS) have been identified as one of the significant drivers of global biodiversity loss, which resulted in species and habitat loss worldwide. Globalization has resulted in greater trade,

transport, travel and tourism, all of which can facilitate the introduction and spread of species that are not native to an area. Floods and landslips caused widespread havoc all over Kerala and have also unleashed several alien invasive species of plants and fish as African muzhi (*Clarias gariepinus*) and tilapia (*Oreochromis mossambicus*) into the State's waterbodies, posing a threat to native biodiversity and the aquatic environment. Kerala State Biodiversity Board, has identified invasive species as a major threat to biodiversity of Kerala in the recently drafted State Biodiversity Strategies and Action Plan 2022-23. At the state level, the Government aims to develop a policy for prevention of introduction of invasive alien species and management of invasive alien species in terrestrial and aquatic ecosystems of Kerala state. A two-day National Seminar on Bioinvasions - Trends, Threats and Management was held on 3<sup>rd</sup> and 4<sup>th</sup> December 2022. The Conference was inaugurated by Hon'ble Chief Minister of Kerala Sri. **Pinarayi Vijayan**. Dr. Shiroma Sathypala, expert from FAO of the United Nations, Rome delivered the key note address on Biological Invasion, Global Impacts and Management. Dr. A. K. Singh, Former Director ICAR-DCFR and Emeritus Scientist, ICAR-National Bureau of Fish Genetic Resources, Lucknow and expert on Invasive Species at the National Biodiversity Authority delivered the plenary talk on Fish Invasions in India: Challenges and Containments. The conference had more than 30 invited talks from eminent scientists across the country who shared their knowledge on best practices for the effective and efficient management of invasive species in forest, aquatic and agriculture landscapes. Some of the key areas covered are biological invasion and quarantine measures in India, Impact of aquarium and pet shops in spread of invasives, and use of technological tools for invasive species mapping and management. In addition, successful models of management of invasive species in Tamil Nadu and value addition of invasive species are also presented. About 80 papers and posters were presented.



The two day conference aimed to prioritize the major invasive species in Kerala, their pathways of introduction and strategies for their management in the sectors forest, marine and freshwater ecosystem and agriculture. The sessions were followed by presentations of the key outcomes of the



Conference and a draft framework on “Status and strategies for control and management of priority invasive species in terrestrial and aquatic ecosystem” was developed.



## 6.2. ACCESS AND BENEFIT SHARING

### 6.2.1. Skill development programme for livelihood improvement

A three-month skill development programme for livelihood improvement of tribal youth of Marayoor panchayat has been initiated, beneficiaries identified and program is ongoing.

### 6.2.2. Implementation of stingless beekeeping practices for sustainable livelihood of selected tribal farmers at Kuttichal Grama Panchayath, Trivandrum District

Kerala State Biodiversity Board initiated a project entitled “Implementation of stingless beekeeping practices for sustainable livelihood of selected tribal farmers at Kuttichal Grama Panchayath Thiruvananthapuram District” under the ABS scheme. The project aims at providing additional income to the tribal people through rearing stingless honeybees (meliponiculture). Adv. G. Stephen MLA of Aruvikkara Constituency inaugurated the project on 22.06.2022 at the Interpretation Centre, Elephant Rehabilitation Centre, Kottur. Dr. C. George Thomas, Chairman, KSBB presided over the function and Member Secretary Dr. Santhoshkumar A.V. addressed the participants. President of Kutitchal Grama Panchayat, G. Manikandan, delivered the keynote address. KSBB Board members K.V. Govindan, Dr. K. Satheeshkumar and Dr. K.T Chandramohanan delivered lectures on diverse aspects of meliponiculture in connection with the workshop organized on “Sustainable Development in the Age of Climate Change”. General Secretary, Federation of Indigenous Apiculture, Dr. Stephen Devanesan, delivered a lecture on meliponiculture to the participants.



This was followed by a two day training program exclusively on 18<sup>th</sup> and 19<sup>th</sup> November in association with Federation of Indigenous Apiculturists, Malayam, Trivandrum. The training included stingless beekeeping, dividing the colony, pure honey collection and management of the stingless bees. Twenty-one tribal families of Kuttichal Gramapanchayath were benefitted from this training. After training honeybee colonies were distributed to the trainees. A whatsapp group of the beneficiaries was started and sustainability of the project is being ensured.



### 6.2.3. Sundaravanam Project

Pallichal BMC initiated Sundaravanam, the medicinal plant garden project in five selected schools of the Panchayath. MLA Adv. I.B. Satheesh of Kattakada constituency inaugurated the project by planting a medicinal plant at SRS Upper Primary School, Mukkunada on June 10<sup>th</sup> 2022. KSBB Chairman Dr. C. George Thomas gave the keynote address. Mr. A. Nizamudeen, the land use commissioner and Technical Support Group member of KSBB offered felicitations for this ABS funded project of KSBB. President T. Mallika, Ward member Sajikumar and BMC secretary K.V. Suresh participated in the event.

### 6.2.4. Approvals for access to Bioresources

During the reporting period two consultation forms in Form I were received from NBA and approval given

During the reporting period 12 applications for permission to research were received and approval given.

### 6.3. BIODIVERSITY RESEARCH

A proposal from University of Calicut, Malappuram, to declare Calicut University Herbarium, Department of Botany as a National Designated Repository (DR) for safe deposit of holotypes/ isotypes/ paratypes of new floral taxa flora was received. Recommendation that the Calicut University Herbarium, Department of Botany may be declared as a National repository as there are no national repositories for flora at present in Kerala was sent to NBA.

#### 6.3.1. Biodiversity studies

- **“Ponnakudam Kavu”, Thevakkal in Ernakulum district.**

The study recorded 400 plant species belonging to 86 families, while majority of species belongs to the Poaceae family. 272 indigenous species and 49 endemic floral species were identified. 79 exotic plant species were located in the sacred groves. Faunal diversity included 63 species of birds and 23 species of butterflies. More extensive field works during different seasons is suggested to find out the faunal diversity in study area.

- **Kallukadavu wetland areas**

Kottayam Biodiversity monitoring studies were conducted in Mudakali and Kallukadavu wetland areas of Kallara Grama Panchayath. A total number of 75 species of wetland plants, 55 species of birds including migratory birds and 14 local fish species were identified from the study area.

- **Jeerakapara(Thusharagiri), Kodenchery, Kozhikode**

During the Rapid Biodiversity Assessment, a total of 306 plant species could be enumerated. 30% of plants reported were endemic This includes 284 species of flowering plants (angiosperms), 1 gymnosperm and 21 pteridophytes. Among the 283 angiosperms, 83 species (29%) were endemics, nearly 23 species are found only in Southern Western Ghats regions only, while 13 species are found in entire Western Ghats. There were 10 angiosperm species which belonged to the Rare, Endangered and Threatened (RET) categories, Out of this 4 are endangered species and remaining 6 are vulnerable to extinction, Among the butterflies, out of the 127 species, 7 are endangered which belong to Schedule 1, 18 species belong to Schedule 2 and 115 belong to Schedule 4. One vulnerable species belong to IUCN RET categories. There are 17 endemics, out of which 1 is endemic to Southern India and 8 are restricted to Western Ghats only. Out of the 33 odonates, there is 1 vulnerable species (Blacktipped Bambootail) which belong to IUCN RET categories. Among the 8 endemics, one is endemic to India, 3 to South India, 1 to Southern Western Ghats and 3 to the entire Western Ghats. Among the Amphibians, out of the 31 species, 7 species belong to Schedule 4. There are 3 Near Threatened, 5 endangered and 1 vulnerable species which belong to IUCN RET categories. All the 12 endemics are restricted to Western Ghats. Among the 42 reptiles, there are 13 species of Geckos/ Lizards, 3 species of Skinks, 2 species of turtles, 1 tortoise and 23 snakes. Out of the 130 birds, 14 are endangered species which belong to Schedule 1 of the Wildlife Protection Act (WPA), 1972 that need rigorous protection. 115 species belong to Schedule 4. Four species belong to IUCN RET categories. There are 17 endemics, out of which 6 are Endemic to India and 11 are restricted to Western Ghats. Out of the 29 mammals, 5 are endangered species which belong to Schedule 1, 10 species belong to Schedule 2 and 4 species belong to Schedules 3 & 4. There is 1 Near Threatened, 3 endangered and 4 vulnerable species which belong to IUCN RET categories

- **Kadinamkulam lake, Thiruvananthapuram.**

The area is one of the finest brackish water lakes in the Thiruvananthapuram district of Kerala. The rapid biodiversity assessment, recorded 197 species, including plants (45 species), otter, fish

(57 species), Crustacea including shrimps, crabs (10 species), odonates (18 species), molluscs (4 species), birds (46 species) and butterflies (16 species). The aquatic weeds of the lake are represented by five species in the survey, and four species in this are exotic species and three invasive species (*Eichhornia crassipes*, *Salvinia molesta* and *Pistia stratiotes*). 45 species of flora was recorded in the marginal areas of the lake, classified under 23 families. *Avicennia officinalis*, is seen in isolated patches, and one dominant mangrove associate, *Acanthus ilicifolius* is seen. Forty-six species of water birds were observed in the lake and its marginal areas. Migratory birds such as Pavizhakkali (*Himantopus himantopus*), and Chathuppan (*Tringa stagnatilis*), and 11 species of shore birds were also recorded from the area. Fish is one of the commercially valuable resources that support the livelihood of several fishers in the locality. The survey recorded 57 species of fish and the commercially important fish commonly caught from the lake include Indo-Pacific Tarpon (*Megalops cyprinoides*), perchlets (Ambassidae), carangids (*Carangidae*), ponyfish (*Leiognathidae*), snappers (Lutjanidae), cichlids (pearl spot and tilapia), mullets (*Mugilidae*), scats (*Scatophagus argus*), rabbit fish (*Siganidae*, *Siganus* spp.), and snake heads (*Channa striata*). Four species of molluscs were reported from the lake during the survey, which include three species of bivalves and one species of gastropod. The bivalve *Tellinides sinuatus* and the gastropod *Faunus ater* are reported for the first time from the lake.

- **Karichal lake, Thiruvananthapuram.**

The study recorded 120 species, including plants (36 species), fish (25 species), shrimp, crabs and mollusc (4 species), butterflies (16 species), birds (17 species) and odonata (22 species). The only species of mollusc recorded from the lake was *Villorita cyprinoides*. There is a fishery of this species on subsistence scale, and the fishers reported a decline in the available resources due to over harvesting. The crustaceans recorded from the lake include one species of barnacle, four species each of shrimps and crabs and one species of mantis shrimp. The barnacle *Amphibalanus amphitrite cochinchinensis*, mudflat crab *Parasesarma pictum* and mantis shrimp *Miya kellanepa* are reported for the first time from the lake. Fish is one of the commercially valuable resources that support the livelihood of several fishers in the locality. The survey recorded 25 species of fish and the commercially important fish commonly caught from the lake include Indo-Pacific Tarpon (*Megalops cyprinoides*), carangids (*Carangidae*), ponyfish (*Leiognathidae*), and snappers (*Lutjanidae*). The absence of commercially valuable species such as Pearl spot (Karimeen) is a matter of concern.

- **Pazhanchira pond Chirayinkeezhu**

A total of 54 bird types are found in the locality. Among these 28 belongs to water birds. Migratory birds such as Vellakkaruppan Parunthu (*Hieraaetus pennatus*), Pavizhakkali (*Himantopus himantopus*), Chathuppan (*Tringa stagnatilis*), Pachakkali (*Tringa nebularia*), Pullikkadakokku (*Tringa glareola*), Kuruvimanaloothi (*Calidris minuta*), Karinthalayan meenkothi (*Halcyon pileate*), Valiyavelithatha (*Merops philippinus*), Indian manjakkili (*Oriolus kundoo*), Vayalkkothi Kathrikakkili (*Hirundo rustica*), Chembanarivalkokkan (*Plegadis falcinellus*), Varieranda (*Spatula querquedula*) also spotted in the locality. 19 butterfly species and 24 different species of odonates were found during the study. Indian flap shell turtle, a Vulnerable species (IUCN red list 2021) was recorded and must be conserved seriously. Floral diversity of Pazhanchira area is represented by nearly 68 species of plants, including fruit trees, medicinal plants, and other herbs, shrubs and trees.

- **Pallippuram Mangrove Regions of Alappuzha**

The total vegetation of the island includes flowering plants or angiosperms of 398 species in 122 families, pteridophytes of 14 species in 7 families and gymnosperms of only one species. Among the flowering plants 21 are Endemic. 1 pteridophyte and 1 gymnosperm are considered as endemic

to Peninsular India. Besides that, the presence of *Myristica malabarica* Lam., a Vulnerable species (IUCN Redlist) is also denoted from the study area. Of 25 taxa as identified from the study area as mangrove plants and its associates, all of them are non indigenous including naturalized plants, alien/invasive plants, transformers and weeds. Mammals of 9 species (8 genera), Reptiles of 13 species (12genera), Ambhilians of 22 species (15 genera), Odonata of 18 species (16genera), Birds of 176 species (137 genera), Butterflies of 106 species (78 genera), Fishes of 72 species (56 genera), Shrimps and Prawns of 11 species (8 genera), Molluscs-Bivalves of 8 species (7 genera) and Mussels – Oyster – Gastropods of 18 species (13 genera) are other species.

- **Perumbalam, Vembanad.**

Within 3km<sup>2</sup> area of Perumbalam Islands, more than 20 miniature sacred groves were present. Biodiversity studies of the area reveal 299 angiosperms, 6 pteridophytes and 1 gymnosperm. 25 plants (23 Angiosperms, 1 plant from pteridophytes and gymnosperms) species of the groves are considered as endemic (8 %) and among them, 6 species are coming under Vulnerable category.

- **Ramassery hill, Elapully panchayath of Palakkad district.**

Biodiversity study recorded 28 species of birds, 8 species of invertebrates and 9 species of vertebrate. The vegetation is a moist deciduous type, harbor a number of wild flora including several medicinal plants, rare and endemic species. 97 species of angiosperm could be recorded The area is aboded with trees dominated by *Diospyros melanoxylon*, *Morinda tinctoria*, *Terminalia paniculata*, *Zizyphus oenoplea*, *Ailanthus malabarica*, covered with lianas like *Callicopteris floribunda*, *Cyclea peltata*, *Passiflora foetida*, *Aristolochia indica*, *Mukia madraspatna*, *Dendrocalamus strictus*, rare species like *Santalum album*, *Phoenix lourerii*, medicinal plants like *Cyclea peltata*, *Adathoda vasika*, *Aristolochia indica*, shrubs and herbs.

#### 6.4. DOCTORAL FELLOWSHIPS

Kerala State Biodiversity Board is an approved research centre under Kerala University. The Board is supporting 3 doctoral fellows for conducting research on various aspects of biodiversity. The topics are as follows

- a. Biology and Management of Cassava Mealy bug *Phenacoccus manihoti* Matlle-Fexero (*Hemiptera: Pseudococcidae*)
- b. Systematics, population genetics and developmental biology of the critically endangered red Canarese barb, *Hypselo barbuis* Thomassi (Day1874)
- c. Propagation and Conservation of *Madhuca balakrishmanii* E.S.S Kumar, Shailaja kumara & Sherief, an endemic species Western Ghats India.

#### 6.5. KSBB- Internship Scheme

Kerala State Biodiversity Board is providing Internship for Post Graduate Students to enhance their skills for Biodiversity conservation. Interns shall present a report of the work carried out at the end of their internship. A certificate regarding successful completion of internship is being issued. During the period of 2022-2023 KSBB provided internship to 40 Students from different institutes.

#### 6.6. Ex situ conservatories of red listed species

The Kerala State Biodiversity Board has successfully implemented the project titled "Ex situ Conservatories for red listed Plant Species" within the state. The specialized Red list of plant species unique to Kerala, previously formulated by the KSBB, has served as a basis for the establishment of these conservatories. These ex situ conservatories function as secure havens for plant species facing the threat of extinction. In this endeavor, the Kerala State Biodiversity Board extended financial support of

Rs. 27 lakh to 11 institutions, facilitating the commencement of ex situ conservatories across various locations within Kerala.

## 6.7. EXTERNALLY FUNDED PROJECTS

### 6.7.1. State Biodiversity Strategies and Action Plan

Kerala State Biodiversity Board (KSBB) under an initiative of the Ministry of Environment, Forest & Climate Change and the United Nations Development Programme (UNDP), through funding from Global Environment Facility (GEF) has updated the Kerala State Biodiversity Strategies and Action Plan 2022-32. The major threats to biodiversity in Kerala state in different sectors were identified and policy recommendations for conservation of biodiversity, and action plan for the next ten years is detailed. Restoration of degraded forest ecosystem, acceleration of carbon sink potential of forests, enhancing resilience to combat climate extremes like flood, drought, landslides, forest fire, natural calamities etc; managing human wildlife conflicts, forest plantation productivity, ecorestoration of river banks, landscape approach for conservation, tribal development and education etc are some of the prioritized areas. The strategies also included documentation of TK/folk practices associated with bioresources, sustainable collection of NWFP, supply chain and value chain analysis of tradable bioresources, developing entrepreneurship programme among the tribal communities, and biodiversity education among students and youth and also awareness creation for various stakeholders. SBSAP promotes the documentation and use of underutilised crops, tubers and leafy vegetables. Preparing people at local level to face the impacts of climate change has been given a thrust in the action plans. The document has further given thrust to attain sustainable development, livelihood security and nutritional security with an overall approach to reduce poverty especially at the local level. The English and Malayalam version were released during the Kerala State Biodiversity Congress by Hon'ble Chief Minister of Kerala.



Nava Kerala Mission & IHRML organized a two -day dissemination workshop and exhibition of GOI- GEFUNDP India High Range Mountain Landscape (IHRML) project at Kerala Arts & Crafts Village, Vellar, Kovalam, Thiruvananthapuram on June 29<sup>th</sup> & 30<sup>th</sup>, 2022. KSBB had conducted two studies as part of the project. The dissemination workshop shared knowledge on the various activities spearheaded through the IHRML project. The officials of KSBB attended the function and participated in the exhibition where various knowledge products like awareness panels, books, booklets and brochures developed by KSBB as part of the projects were showcased.

### 6.7.2. Database of Tradable bioresources and Economic valuation :

KSBB with funding support of Rebuild Kerala Initiative undertook a study of tradable bioresources with the objective of identifying various floral bioresources being traded in the State, assessing its

volume and economic potential as well as inventorizing the bioresource-based industries operating in the State was undertaken. The project covered bioresources from forest, outside forest, marine and fresh water resources.

- Attempts at consolidation of data on current status of aquatic resources, present utilization of resources, state of depletion, revival necessities, conservation initiatives, alternate uses of resources, regeneration of resources, employment generation, developing eco-friendly technologies, climate change mitigation and policy formulation. A database of >3900 aquatic species has been generated and a consolidated checklist of 185 tradable bio-resources and products prepared are presented in the report. The report was prepared after extensive consultation with the fisherman community and covered 138 marine landing centers and 4000 fishermen.
- The major recommendations include utilization of the areas of waters resources which are unutilized at present for aquaculture for which sustainable incentives must be announced; purposeful elimination of unwanted exotic fishes (species like *Clarias gariepinus*) from aquaculture in the state; stressfully protect native species for aquaculture (like pearl spot, giant freshwater prawn, naaran chemmeen, kaara chemmeen, red snapper, mud crabs and so on); actions for bringing a number of hill stream fishes for domestication and bringing them under cultivation at least in hilly areas and cage culture in reservoirs; establishing proper storage facilities throughout the state; proper supply chain development for marketing and economic development.
- The marine fish diversity of Kerala is reported to be around 1020 species of marine fin fishes. IUCN Red List Assessment of 975 species occurring in Kerala showed that 20 species are in the Critically Endangered, 53 in the Endangered, 47 in the Vulnerable, 37 in the Near Threatened, 59 Data Deficient, 198 Not Evaluated and 561 under Least Concerned categories. The Biological Diversity Act has provision to notify threatened species for regulation of trade under Section 38. A total of 30 species has been suggested for inclusion under Section 38 of Biological Diversity Act for Inland water bodies of Kerala which includes Reptiles – 5, Frogs- 8, Fishes 17, Odonates 2, Fresh water crabs- 4, Fresh water prawns- 7 species
- As part of the Tradable floral bioresources of Kerala an exhaustive inventory of the bioresources of the state and checklists prepared for Mushrooms (85), RET species (645), endemic plants (152), Trees of Kerala (855), Timber (161), Trees Outside the Forest (90), Bamboos & Reed species (55), Exotic fruit trees cultivated (26), Orchid (126), Orchids in forests having floricultural potential (16). Passport script data of the Non Wood Forest Produce of Kerala State has also been prepared.
- A Total 121 Ayurvedic industries were sampled as part of this study of which 10 were major, 21 were medium scale and 90 were small scale. About 578 medicinal plants are utilized and the total quantity of raw material requirement has been estimated as 25,516.6 MT. The total quantity estimated is 25,516.6 MT. Out of top 100 with regard to quantity 60 species are consumed above 100 MT annually. Rest of 40 species is between 96.3 and 60.6 MT consumed by the manufacturing units growth. Out of the 189 species with codified threat status, 68 species are classified under threatened status (CR-4, EN-30, VU-31, R-3) and the other 111 species are classified under NT (12) and LC (99). Some of the conservation concern species have a projected demand of greater than 50 MT. These include Critically endangered species as *Saussurea costus* (67.5 MT), *Coscinium fenestratum* (79.2 MT) vulnerable species as *Bacopa monnieri* (410 MT), *Niligirianthus ciliatus* (230 MT), *Woodfordia fruticosa* (186 MT). Endangered species as *Oroxylum indicus* (152 MT), *Acorus calamus* (137 MT).
- Kerala State Biodiversity Board (KSBB) initiated a study of the trade of raw drug through Raw drug shops in Kerala where raw drugs both dry & fresh medicinal spices, value added products, and also base materials like various oils, clarified butter (ghee), honey etc are sold. One of the

important recommendation based on the study is Angadi pachamarunnu shops need improvement in terms of its hygiene, storage conditions, introduction of good collection, processing, storage and selling practise. It is also highly essential to introduce a registration and license to the raw materials shop keepers, under the local administration. Total Angadikkada identified in the state is approximately 1100 a total number of Angadikkada selected for the survey was 235 A total of 657.8 tonnes is being traded with Rs 13.3 crores value.

- The nursery survey was conducted in 760 plant nurseries in all the 14 districts of Kerala with the help of 14 NCC cadets from one college of each district, the project fellows and 14 district coordinators of KSBB. The survey focused on the economic status, available plant resources, their cultivation, trade, supply chain and also the constraints and challenges faced in the industry. Woody plants (plantation, shade) (30%), annuals (22%), perennials (12%), aquatic plants (7%), Special green house plants (5%), High decorative plants bonsai (6%), Lower plants like ferns, pine (6%), Special plants like orchid, Anthurium (12%) are the main categories. Approximate income generated was between Rs 3 – 5 crores.
- The average revenue from forest of Kerala is about Rs 255 crore of which Marayoor sandal alone generated a revenue of Rs 49.75 crore (2015-20). The value of NWFP sourced from forests of Kerala is Rs 423 lakh. As per the estimation of KSBB, the ABS Potential of Timber both from the forests and outside (Based on Auction Value) is Rs 1319 Lakh per year. While, the ABS potentials of the NTFPs of Kerala amount to Rs. 6.35 Lakh per year. KSBB has estimated that a revenue of Rs 8316.66 crore is generated through marine fisheries while an amount of Rs 3840 crore is generated from inland fisheries in Kerala. ABS potential estimation took into consideration that a large volume of fish in the State is used for domestic or local (non commercial) consumption, accordingly, the total ABS potential of fisheries sector in the State was worked out as Rs.3039 Lakh per year, which includes Rs Rs.2079 lakh from marine and Rs.960 lakh from inland sectors. There are 52,388 bioresources based manufacturing (industrial) units in the State, which generate an annual turnover to the tune of Rs. 1,04,014 Crore. A rough estimate of the ABS potential from, based on biological resources' purchased price by the industries or based on the raw-material cost and this has been worked out to Rs 105 crore.

#### **6.8. Capacity Building workshop on BD Act, 2002 and ABS**

- A Capacity Building workshop on BD Act, 2002 and ABS funded by National Biodiversity Authority for Technical Support Groups, Forest Officials, Research institutions, Line departments and Virtual Biodiversity Cadre members was held on 27/02/2023 at Institute of Management in Government. The inaugural session of the workshop was chaired by Dr. C George Thomas, Chairman KSBB and the meeting was inaugurated by Shri. Puneet Kumar IAS, Member Secretary, Kerala State Planning Board. The technical sessions started with an introductory session on “Convention on Biological Diversity and biological Diversity Act 2002 and Rules 2004” by Dr. C. George Thomas, Chairman KSBB. The session focused on the Biological Diversity Act, 2002, its genesis, and its implementation in India and other related institutional mechanisms. The next session was “Role of Forest Officers in implementing BD Act” by Shri. Pramod G Krishnan IFS, Member of KSBB and Add. Principal Chief Conservator of Forests. TSG and Biodiversity Conservation at local level by Shri. K. V. Govindan, Member KSBB. on “Access to Bioresources and Benefit Sharing” by Dr. R V Varma, Former chairman, KSBB “Role of Researchers and line Department in ensuring compliance with Biological Diversity Act” by Dr.V.Balakrishnan, Dy. Supdt of Police, Kasargode, and Former member Secretary of KSBB “Implementation of SBSAP and need for convergence” by



Dr. A.V. Santhoshkumar, Member Secretary of KSBB were the other sessions. A group discussion was conducted. The moderators of the discussion were Dr. K Satheeshkumar, Dr. Swapna T.S and Dr. K. T. Chandramohan.



- The Capacity Building workshop on BD Act, 2002 and ABS funded by National Biodiversity Authority meant for local government bodies, BMC's, District Panchayat secretaries, Mayors of corporations, District level planning officers, Assistant Development Commissioners, Deputy Director of Panchayats, District officers of Agriculture, Animal Husbandry, Economics and statistics, and Fisheries was held on 28/2/2023. The inaugural session of the workshop was chaired by Smt P. P Divya, President, Kannur District Panchayath. The meeting was inaugurated by Prof. (Dr) Jiju P Alex, Member, Kerala State Planning Board. The technical sessions started with the session on “Biodiversity Conservation and Local Action Plan by Shri. K.V Govindan, Member, KSBB. This was followed by sessions on “Biological Diversity Act and Local governments” by Shri A.V.Santhoshkumar, Member Secretary, KSBB, “Examples of ABS Models at National level” by Dr. R V Varma, Former Chairman, KSBB, “Kani Model of ABS” by Dr.S. Rajasekharan, Former Director Grade Scientist and head, JNTBGRI. A group discussion was conducted between the participants dividing them into four groups. The moderators of the discussion were Shri. Vinodkumar Kodakkal, Dr. K. Satheeshkumar, DR.R V Varma, and Shri. K.V. Govindan.



## 6.9. Traditional Knowledge write-shops

In a pioneering effort to safeguard biodiversity and promote sustainable development, the Kerala State Biodiversity Board (KSBB) has initiated the preparation of comprehensive guidelines related to Traditional Knowledge to empower Biodiversity Management Committees (BMCs) across the state. The primary aim of these guidelines is to equip BMCs with the knowledge and tools necessary to conduct comprehensive studies on the current status, collection, conservation, and sustainable utilization of

Traditional Knowledge (TK) associated with biodiversity, while also facilitating the implementation of Access and Benefit Sharing of TK. Emphasizing the pivotal role of traditional knowledge holders, tribal healers, researchers, and scientists, the initiative seeks to raise public awareness and explore opportunities for incorporating TK into state and Gramapanchayat level planning processes. A landmark one-day workshop on "Traditional Knowledge" was held on July 7, 2022, at the conference hall of the Kerala State Medicinal Plant Board. Renowned experts in the field participated, sharing valuable insights and experiences regarding the importance of traditional knowledge in biodiversity conservation and sustainable utilization. Building on the workshop's success, five write-shops were organized in association with BMCs in five gramapanchayats (Vithura on 02.08.2022, Purakkad on 03/01/2023, Vattavada on 25/01/2023, Kankol-Alappadambu on 27.2.2023 and Edavaka on 28.2.2023) fostering interactions between stakeholders and experts from diverse sectors. These write-shops facilitated constructive discussions on the systematic documentation of TK related to biodiversity, ensuring equitable access and benefit-sharing, and identifying possibilities for integrating TK in the development processes of local self-governments. The wealth of ideas and knowledge gathered during these events will form the bedrock of the comprehensive guidelines, designed to empower BMCs for the efficient collection, conservation, sustainable utilization, access, and benefit-sharing of traditional knowledge associated with biodiversity. The guidelines will pave the way for the seamless integration of traditional knowledge into the Gramapanchayat level planning process, promoting innovation and collaboration with research institutions in the development of new herbal drugs, nutraceuticals, and plant-based products. By envisioning a unique model to harness Kerala's traditional knowledge for the socio-economic upliftment of its people, the initiative aims to empower local self-governing institutions in their duty to safeguard natural resources and preserve the invaluable traditional knowledge intertwined with biodiversity.



## 6.10. LEGAL ISSUES

1. OA No. 157 of 2021 (SZ) The case regarding large scale felling of valuable trees which otherwise could not have been felled without getting necessary permission from the Forest Department. has been SuoMotu registered by National Green Tribunal on the basis of the newspaper report. The Hon'ble NGT in its final judgement has directed that 30,000 seedlings of indigenous species which is 10 times the number of felled tree in order to compensate the environmental loss caused due to tree felling. Biodiversity Board was entrusted the job of tree planting through BMC with the assistance of LSG. KSBB with active participation of BMC and Kerala Forest department has planted about 66,680 saplings in various district of Kerala
2. Petition before Hon'ble NGT on OA 122 of 2022 (SZ) demolition of M's. Kapico Kerala Resorts Pvt Ltd- KSBB conducted site inspection and submitted report to NGT, the case has been disposed off.
3. WP (C) No. 27142/2021 filed by Kerala Sarpakkavu Samrakshana Samithi- Case closed with

certain directions including the direction of the state and the Board to ensure declaration of serpent groves identified as BHS by BMCs within three months.

4. W.P (C) No.7444/2022- Mango Meadows Agricultural Pleasure Land (Pvt Ltd)- Statement of facts submitted.
5. O.A.No.15/2020- Burning banks of Bharathapuzha- Status of the action taken submitted to Govt.
6. Court cases related to ABS
  - W.P. (C) No. 40132/18- Arjuna Natural Ltd, Ernakulam
  - W.P. (C) No. 41622/18- Pankaja Kasturi Herbals India Ltd.
  - W.P. (C) No. 41903/18- VaidyaratnamOushadasala Ltd.
  - W.P. (C) No. 35855/18- Synthite Industries Pvt. Ltd.
  - W.P. (C) No. 41976/18- Arya Vaidyasala, Kottakkal
  - W.P. (C) No. 42017/18- Nagarjuna Herbal Concentrates Limited
7. W.P (C) No. 3549/2023 filed by Shri. P.K.Sasi- Statement of facts submitted
8. W.P (C) No.3645/2023- filed by Smt. Sindhu, Ettumaannur Municipality Statement of facts submitted
9. W.P (C) No.3320/2023 filed by Shri.Viswam Koothupara Statement of facts submitted
10. W.P (C) No.1981 of 2018 filed by Pollution Control club & Nature Club Statement of facts submitted
11. W.P (C) No.8237/2023 filed by Muhammed Ali Statement of facts submitted

## 6.11. PUBLICATIONS

1. Balakrishnan V, Sudheesh NP , Preetha Nilayangode 2023 Microbial Diversity and conservation of local Biodiversity Heritage Sites in Western Ghats with community participation-a novel conservation effort of Kerala in Microbial Biodiversity, Biotechnology and Ecosystem Sustainability. Springer Nature pp 57-71
2. Preetha Nilayangode, Laladhas K P Oommen V. Oommen 2022 Strengthening ABS implementation in India in Biodiversity in Conservation through Access and Benefit Sharing (ABS) eds Oommen V oommen, Laladhas KP, Prakash Nellyat and Balakrishna Pisupati Springer Nature pp 249-261
3. Tradable/ Commercially Potential Bioresources Of Kerala and Economic Valuation : Executive Summary Eds : Dr George Thomas C, Dr Satheeshkumar K, Dr Swapna TS, Dr K T Chandramohan, Shri Govindan KV, Dr Santhoshkumar AV and Dr Preetha N 2022 Database Of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala
4. Tradable/ Commercially Potential Bioresources of Kerala and Economic Valuation Dr Prakash Nellyat, Dr Preetha N, 2022, Database Of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala
5. Tradable/ Commercially Potential Aquatic Bioresources of Kerala Dr K V Jayachandran, Dr Preetha N 2022 Database Of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala
6. Tradable/ Commercially Potential Floral Bioresources Of Kerala Dr S Rajasekaran, Dr K Murugan, and Dr Preetha N 2022 Database Of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala
7. Case Studies of Sustainable Use of Biodiversity Dr K Murugan, Dr Preetha N, 2022 Database Of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala
8. Checklist Of Floral Bioresources and Bioresources Based Manufacturing Industries Dr. S Rajasekaran, Dr. K Murugan, Dr. Preetha N, 2022 Database of Tradable / Commercially Potential Bioresources And Economic Valuation In Kerala, Rebuild Kerala Initiative, Government Of Kerala

# 7

## Extension and Training

### Major achievements under Extension Division

- Provided financial assistance to 130 selected Biodiversity clubs in the state for conservation activities
- 3 Regional level trainings for selected biodiversity clubs conducted at Kozhikode (13/01/2023), Trissur (28/02/2023) and Thiruvananthapuram (8/03/2023)
- District level Children's Biodiversity Congress conducted in all 14 districts
- State level Children's Biodiversity Congress (CBC) conducted on 20<sup>th</sup> February at Govt. Arts & Science College, Kozhikode along with 2<sup>nd</sup> Kerala State Biodiversity Congress
- RKI Agrobiodiversity Project-Seed fest conducted in four districts (Wayanad, Trissur, Idukki, Ernakulam)
- KSBB Newsletters published 7 issues till March 2023
- Establishment of Biodiversity Knowledge Centres - Provided financial assistance to 44 Selected Libraries in the State
- Biodiversity awareness & Extension programmes - Provided Financial Assistance to Colleges/NGOs for conducting seminars/workshops/symposia
- Kerala State Biodiversity Conservation Awards
- Kerala State Biodiversity Congress
- Observance of International Days (International Biodiversity Day, Environment Day, World Forest Day, World Earth Day, World Water Day and World Meteorological Day)
- Online certificate course on "Data Analysis through R Programming"
- 4652 students & 1163 adults visited Biodiversity Museum at Vallakkadavu representing 82 institutions.
- Conducted Training on Mushrooms
- Kokodema training conducted

### 7.1 Commemorative day celebrations

#### 7.1.1 International Biodiversity Day Celebrated

Deputy Mayor of Thiruvananthapuram Corporation PK Raju inaugurated the construction of a biodiversity park with fruit trees and medicinal plants at the premises of Government LP school Pangode on 22<sup>nd</sup> May 2022. Medicinal plants from Medicinal Plant board were procured and distributed to students. A biodiversity club is also allotted to the school for maintenance of the park and to carry out activities related to conservation. Planning Board

Vice Chairman VK Ramachandran, School Headmistress L Shailaja, Corporation Health Officer Dr. Gopakumar, Medicinal Plant Board member Dr. P Sajeew were participated in the function. Board members K. V. Govindan, Dr. Satheeshkumar, Dr. K. Chandramohan offered short lectures for the students on the urgency in need for biodiversity conservation. Member Secretary of the board Dr. Santoshkumar A.V. presided over the function. Administrative officer Smt. V.Mini, staff members of KSBB and about 60 students attended the programme at the school.



**7.1.2 Environment Day Celebration:**

KSBB celebrated World Environment day at the Deaf and Dumb school in Jagathy, Thiruvananthapuram on June 5<sup>th</sup>, 2022. Ward Counsellor Adv. Rakhi Ravikumar planted fruit plant seedlings at school premises and inaugurated the event. She pinpointed the need for preserving indigenous breeds of animals, birds and plant species for the coming generations. Competitions in Pencil and crayon drawing were conducted for lower primary and upper primary, high school and vocational higher secondary students. The books published by KSBB on various topics related to biodiversity were donated to the school library. Chairman, Dr. C. George Thomas distributed the awards to winners. Board member Dr. Satheeskumar, Administrative officer Smt. Mini V., Vocational Higher Secondary Principal Manju Mathew, Sreekumari.V and Headmistress Sujatha George attended the function along with other staff and students.





### 7.1.3. Observance of International Days (World Forest Day, World Water Day and World Meteorological Day) - (Online):

Kerala State Biodiversity Board organized lecture series to commemorate International Day of Forests, World Water Day and World Meteorological Day on March 21<sup>st</sup>, March 22<sup>nd</sup> and March 23<sup>rd</sup> respectively. Dr. A. V. Raghu, Principal Scientist, Kerala Forest Research Institute (KFRI), Thrissur, Dr. Manoj P. Samuel, Executive Director, Centre for Water Resources Development and Management (CWRDM) and Dr. Shalini Pillai P., Professor and Head, Department of Agronomy, Kerala Agriculture University delivered lectures on related topics.

Dr. A.V. Raghu, Principal Scientist, Kerala Forest Research Institute (KFRI) Thrissur delivered a lecture on “Forests and Health – Healthy Forest for Healthy People” in connection with the International Day of Forests 2023, organised by the Kerala State Biodiversity Board on March 21<sup>st</sup>, 2023.

Dr. Manoj P. Samuel, Executive Director, Centre for Water Resources Development and Management, Govt. of Kerala for delivered a lecture on 'Accelerating Change to Solve the Water and Sanitation Crisis' in connection with the World Water Day 2023 organised by the Kerala State Biodiversity Board on March 22<sup>nd</sup>, 2023.

Dr. Salini Pillai P., Professor and Head, Department of Agronomy, College of Agriculture, Vellayani delivered a lecture on “The Future of Weather, Climate and Water across Generations” in connection with the World Meteorological Day organised by the Kerala State Biodiversity Board on March 23<sup>rd</sup> 2023.

Scientists from various Research and Development Centres, Lecturers, Students & Researchers from different universities in Kerala, Officials of Kerala State Biodiversity Board, District Coordinators of Biodiversity Board, Members of Biodiversity Management Committees, Technical Support Groups (TSG's) and Biodiversity Club members from Kerala were participated in the lecture series held on March 21<sup>st</sup> - 23<sup>rd</sup>.

Dr. C. George Thomas, Chairman Kerala State Biodiversity Board delivered the welcome address. Dr. C. S. Vimalkumar (Principal Scientific Officer), Dr. Sudheesh N(Scientific Officer), Dr. Akhila S. Nair (Senior Research Officer) and Dr. K. Sreedharan (Research Officer) led the programme. Dr. A. V. Santhoshkumar, Member Secretary, Kerala State Biodiversity Board delivered vote of thanks.

## 7.2. Financial assistance to Biodiversity Clubs:

KSBB has selected 130 leading biodiversity clubs across the state, based on their performances in the biodiversity conservation activities. KSBB has also provided a financial support of Rs. 5000 each to the selected Biodiversity clubs. The clubs have to establish a name board in stipulated format and to organize various biodiversity conservation activities such as field visits, training programs, awareness programs, biodiversity studies etc by using the money.

## 7.3. Regional level training programs for selected Biodiversity Clubs:

Kerala State Biodiversity board has selected 130 active biodiversity clubs across Kerala for financial support during 2022-2023. In order to strengthen the activities of biodiversity clubs, Kerala State Biodiversity board has organized three regional level workshops for the selected biodiversity clubs at Kozhikode (13/01/2023), Thrissur (2/02/2023) and Thiruvananthapuram (8/03/2023). Teacher coordinators of the 130 Biodiversity clubs and district coordinators of Kerala State Biodiversity Board participated in the workshops. The northern regional Biodiversity club training at Kozhikode was inaugurated by Sri. K. V. Govindan (Board member, KSBB). The central regional workshop conducted at Thrissur was inaugurated by Smt. Latha Chandran, Vice President of Thrissur District Panchayath. Dr. C. George Thomas, Chairman, Kerala State Biodiversity Board inaugurated the southern regional workshop conducted at Thiruvananthapuram. Sri. K. V. Govindan (Board member, KSBB), Dr. K. Satheesh kumar (Board member, KSBB) and Dr. Akhila S. Nair (Senior Research officer, KSBB) took technical sessions during the regional workshops. Technical sessions were followed by group discussions and interactive sessions. Promising biodiversity club activities presented by teacher coordinators representing each district also carried out as part of the workshops. Dr. A.V. Santhoshkumar, Member Secretary, Kerala State Biodiversity Board offered concluding remarks about the 3 regional workshops during the southern regional training program conducted at Thiruvananthapuram on 08/03/2023.



## 7.4. State level Children's Biodiversity Congress (CBC):

15<sup>th</sup> Children's Biodiversity Congress (CBC): As a part of second Kerala State Biodiversity congress, fifteenth Children's Biodiversity congress was also conducted on 20<sup>th</sup> February 2023. 'Biodiversity and future of human beings' was the main theme of the 15<sup>th</sup> children's biodiversity congress. There were three invited talks during the inaugural session offered by Dr. Manoj P. Samuel (Director, CWRDM, Kozhikode), Dr. T.S. Swapna (Board Member, KSBB) and Dr. Retheesh Krishna (Assistant Professor, Govt. College, Karyavattom) on significant topics related to Biodiversity conservation and future generations. The program was presided over by Mr. Pramod G. Krishnan I.F.S. (Board member, KSBB) and greeted by Dr. A.V. Santhoshkumar (Member Secretary, KSBB). Dr. Sudheesh N. (Scientific Officer, KSBB) welcomed the audience and Mrs. Mini V. (Administrative Officer, KSBB)

offered formal vote of thanks. Followed by the inaugural session, senior and junior category Project presentation competitions were conducted for selected students across the state. More than 120 students from all the districts participated in the event. The winners of the competitions were awarded with memento and certificates during the valedictory session of 2<sup>nd</sup> Kerala State Biodiversity Congress. Prize distribution to winners of other state level competitions such as essay writing, painting, pencil drawing and online photography also were carried out during the concluding session of the Kerala State Biodiversity Congress 2023.



### 7.5. Seed fests:

In order to enhance agrobiodiversity conservation, the genetic resources available with the custodian farmers must reach to a maximum number of growers. With this intention, as part of Rebuild Kerala Initiative- Agro biodiversity project, seed fests were conducted in selected districts such as Ernakulam (05/04/22), Idukki (06/04/22), Trissur (11/04/22) and Wayanad (13/04/22) with huge number of farmer participants. The seed fest provided a platform for the custodian farmers and the public to exchange planting materials and breeds of animals and birds among the public. There are farmers having certain unique agricultural practices, conserve rare varieties and have technology worth popularising. In order to make the public aware of the existence of such rare and endangered species, a one day seed fest was organized in the above mentioned districts during the reporting period. Financial and technical supports were provided by Kerala State Biodiversity Board for the successful conduction of the event. Cash prize First Prize: Rs. 10,000/-, Second Prize: Rs. 5000/-, Third Prize: Rs. 3000/- and a certificate was distributed to Winners.



### 7.6. Establishment of Biodiversity Knowledge Centres

Expression of Interest is invited from Libraries affiliated to the Kerala Library Council, those Govt./



Aided School, College, University Libraries and Govt. Libraries to establish Biodiversity Knowledge centres throughout the State for generating awareness and enthusiasm towards the conservation of biodiversity among public. Financial assistance was given to selected Libraries for developing a Biodiversity Knowledge Centre and to organise Biodiversity Awareness & Extension Programme like one day Seminar/ Workshops for Public and Students. The objective of the scheme is to promote biodiversity education & awareness among Public & Students.

In connection with the establishment of Biodiversity Knowledge Centres in registered libraries in Kerala, a total of 44 libraries were selected and an amount of Rs. 4,40,000/- was credited to the concerned libraries.

### **7.7. Biodiversity awareness & Extension programmes**

In connection with the Biodiversity Awareness and Extension programmes for conducting seminars/workshops/symposia/training programmes, total 32 institutions were selected and an amount of Rs. 6,00,000/- was credited to the concerned institutions.

### **7.8. Online certificate course on "Data Analysis through R Programming**

The Kerala State Biodiversity Board (KSBB) successfully conducted an online certificate course titled "Data Analysis through R Programming," aimed to equip participants with essential data analysis skills, particularly in biodiversity research. It emphasized the importance of "R"-programming and its role in data science. Participants also benefited from the course, gaining insights into the future prospects of data science in biodiversity research. The course delivered through a virtual classroom environment, powered by the Moodle Learning Management System, proved to be highly effective in fostering an interactive and engaging learning experience for the participants. The course materials included a rich collection of 47 lecture videos, totaling 770.68 minutes, along with supplementary notes, source code for hands-on practice, and sample data for data analysis. Regular evaluation through tests and assignments provided continuous feedback on participants' progress. A final exam served as a comprehensive assessment of their proficiency in data analysis and "R"-programming. Out of 82 participants, 62 successfully completed the course. By fostering a data-driven approach and providing in-depth training in "R"-programming, the course has contributed significantly to empowering researchers and scientists to make data-informed decisions and promote sustainable practices in biodiversity conservation.

### **7.9. Training on Mushrooms**

The Kerala State Biodiversity Board conducted a certificate course on "Mushroom Identification and the Need for their Conservation in Natural Habitats" from July 1<sup>st</sup> to September 10<sup>th</sup>, 2022. The primary objective of this course was to instill awareness and appreciation among the younger generation for the world of mushrooms and to sensitize students to the vast array of ecosystem services provided by these often-overlooked yet remarkable life forms. The course aimed to inspire students to establish a deeper connection with nature, encouraging them to explore and study the rich species diversity within the fungal kingdom. 33 participants attended the course, with 29 successfully completed it. The course contributed to nurturing a sense of stewardship for this lesser-known yet integral component of our ecosystems among the students, fostering a commitment to the conservation of fungal biodiversity and the broader environment.



### 7.10. Training on Kokodama

The Kerala State Biodiversity Board conducted a comprehensive state-level training program for biodiversity clubs in schools across Kerala. The primary objective of this program was to augment the activities of biodiversity clubs and to stimulate their active involvement in various biodiversity conservation activities. The official launch of this training program at the state level was inaugurated by Dr. K. Satish Kumar, Member, KSBB on 5.11.2022 at 10 AM at Biodiversity Museum, Vallakadavu. Mr. K V Govindan, Dr. T S Swapna, and Dr. K Satish Kumar, Members, KSBB along with Dr. C S Vimal Kumar, Principal Scientific Officer, KSBB, handled classes for Biodiversity Club members on various topics related to biodiversity. Throughout the day, classes and interactive sessions were conducted to engage students on various facets of biodiversity and to motivate them to actively participate in biodiversity conservation efforts. One of the unique features of this training program was the practical training provided to Biodiversity Club members in Kokedama making. This engaging session was led by Ms. Lakshmi Suresh, Research Scholar, Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI). Notably, the Kokedama were created using natural materials such as soil, cow dung, and coco peat, introducing the students to a creative and environmentally friendly approach. This not only led to beautiful Kokedama creations but also ignited the students' curiosity and wonder, highlighting how nature provides ample materials for creative and eco-friendly projects. Moreover, the program encouraged the idea of making lovely items from natural materials and cutting down on the use of plastic plant containers at the same time. The initiative underscored the principles of simplicity and self-sufficiency, aligning perfectly with the essence of biodiversity conservation.



**7.11. Kerala State Biodiversity Conservation Awards:** Kerala State Biodiversity Board declares its prestigious Kerala State Biodiversity Conservation Award for the year 2021–2022. This award is

mainly for the recognition of environmental conservation and biodiversity assessment and awareness programmes. The main goal of this award is to recognise individuals, non-governmental organisations, educational institutions, and members of the press / media for their efforts to protect the environment. Total 10 categories are selected for the award such as Haritha Vyakthi, Best Custodian Farmer (Plants), Best Custodian Farmer (Animal/Bird), Best Journalist, Best Biodiversity Management Committee (BMC), Best Biodiversity Conservation School, Best Biodiversity Conservation College, Biodiversity Conservation Institute (Government, Co-operative Sector, Public Sector) and Biodiversity Conservation Institute (Private Sector) are the major categories for the awards. The auspicious function in connection with the Kerala State Biodiversity Congress 2023 held at Govt. Arts and Science College, Kozhikode on 19<sup>th</sup> and 20<sup>th</sup> February 2023. Hon'ble Chief Minister of Kerala Shri. Pinarayi Vijayan distributed the awards to the winners.



**7.12. Newsletter :**

KSBB newsletter EKAA April, May, June, July, January, February, March 2023 issues published

**7.13. Kerala State Biodiversity Congress**

The second Kerala State Biodiversity Congress was conducted from 18<sup>th</sup> to 20<sup>th</sup> February 2023 in collaboration with Government Arts and Science College (GASC), Kozhikode. The theme of the 2<sup>nd</sup> KSBC was 'Biodiversity and livelihood'. The Hon'ble Chief Minister of Kerala, Shri. Pinarayi Vijayan, inaugurated the 2<sup>nd</sup> KSBC on 19/02/2023 in a grand function presided over by Shri. Ahammad Devarkovil, Hon'ble Minister for Ports, Museums and Archaeology with Shri. P. A. Mohammed Riyas, Hon'ble Minister for Public Works and Tourism as the Key note speaker. Dr. C. George Thomas, Chairman, KSBB delivered the welcome speech.







It was one of the largest conclave of scientists, conservationists, environmentalists, civil society groups, Biodiversity Management Committees, Entrepreneurs, students, and local communities concerned with conservation of biodiversity. The 2<sup>nd</sup> KSBC included various programmes such as Biodiversity exhibition consisting of more than 120 stalls, A workshop for the Local Self Government Institutions based on the topic ‘Women empowerment and biodiversity conservation’, Technical Support Group Regional Meet, Biodiversity Management Committee Meet, 15<sup>th</sup> Children’s Biodiversity Congress, and Custodian Farmers Meet and the Distribution of State Biodiversity Conservation Awards. During the Congress, the Hon’ble Chief Minister of Kerala **Shri. Pinarayi Vijayan** distributed the Kerala State Biodiversity Conservation Award 2021 awards to the winners during the inaugural session of the Congress. During the inaugural function, Hon’ble Chief Minister released the various publications such as Kerala State level Biodiversity Strategy and Action Plan (SBSAP), Report of project conservation of agrobiodiversity funded by RKI, and The book entitled ‘Conservation and Sustainable Utilization of Bioresources’ authored by Dr. Swapna T. S. and Dr. Keerthi T, published by Springer. The Kerala State Biodiversity Board organized Biodiversity Exhibition (“Jaivavaividhya Pradarshanam”) from 18<sup>th</sup> to 20<sup>th</sup> February 2023 at Government Arts and Science College, Kozhikode in connection with Kerala State Biodiversity Congress 2023. The exhibition was inaugurated on February 18<sup>th</sup> 2023 by Sri. A. K. Saseendran, Hon'ble Minister for Forest and Wildlife.



## **7.14 Biodiversity Museum**

Kerala Biodiversity Museum is an initiative under the auspices of Kerala State Biodiversity Board. Main objective of the museum is to create the awareness about the importance of biodiversity and its conservations, to different level of people and students.

### **7.14.1. Major activities done in the Museum.**

Number of students visited during this period	– 4652
Number of adults visited during this period	– 1163
Educational institute	– 82

### **7.14.2. Other Activities / Celebrations conducted In Museum**

- Celebrated World Earth day
- KSBB Award evaluation
- Kokedama training
- Teachers training- Biodiversity club
- KSBB Publications sale

### **7.14.3. Internship program**

- Kerala university Karyavattom- 11 students
- St.Johns college Anchal, Kollam-5 students
- St.Gregorious College, Kottarakkara, Kollam-10 Students

### **7.14.4. Publicity work for Museum Promotion**

- Kerala vision visual media
- Mathrbhoomi –print media
- Marunadan malayalee- Online media
- Whatsaround thiruvananthapuram- online media
- Contacted various schools and colleges through telephone
- We had conducted meeting with Soil Museum and Wax Museum Trivandrum, and discussed for the distribution of our brochures from their museum.

### **7.14.5. Works done in the Museum**

- Maintenance works carried out regularly to keep the equipments clean.
- Repotting Gardan plants
- AC Maintenance
- Kiosk repairing
- Roof tile maintenance
- KADCO- Marine specimen shelf, Panel and models (marine)
- Water purifier Maintenance

## **7.15. Expert Committee representation and major meeting attended**

### **Travel details of the Chairman, Dr. C. George Thomas for the financial year 2022-23**

- 21.05.2022- International Biological Day Celebration at Chennai

- 07.07.2022- Inauguration and keynote address of special biodiversity Gramasabha, Perumanna Grama Panchayath, Kozhikode
- 27.07.2022- Presented paper on Food Security of Kerala and Problems in the field of Agriculture, Chalakkudy. Visited Information Centre, Mannuthy
- 22.10.2022- Inauguration of Collaborative biodiversity project with Appollo Tyres at Kotakara.
- 25.10.2022- V.T Bhattathiripad College, Sreekrishna Puram Ist Anniversary of KSBB sponsored Food Forest Chief Guest, Keynote address.
- 26.11.2022- Talk on 'Agroecology', Alathur Biodiversity Site Visit
- 13.12.2022- Chief Guest at the function of Biodiversity Quiz of Appollo Tyres, Ernakulam
- 15.01.2023- People's Biodiversity Register II<sup>nd</sup> Volume – Training Programme
- 17.02.2023-2<sup>nd</sup> Kerala State Biodiversity Congress – at Government Arts & Science College, Meenchanda, Kozhikode

#### **Tour details of the Member Secretary Dr. Santhoshkumar A.V.for the financial year 2022-23**

- 02.05.2022 – Participated in Mango Meet 2022 at Kannur
- 19.06.2022 – Participated National workshop on Bird Monitoring through Citizen Science at KAU, Thrissur
- 17.08.2022 – Visited BMC Aathirapally and Eriad, Thrissur for monitoring progress of BMC Project
- 07.12.2022 – Attended District level Childrens Biodiversity Congress at Thrissur
- 27.12.2022 – Attended One day workshop on Nattarivu Ezhuthusala – Alapadambe, Kannur
- 17.12.2022 – Attended District level Childrens Biodiversity Congress at Palakkad
- 16.01.2023 – Participated in Regional Training - PBR 2<sup>nd</sup> Volume at Calicut
- 25.01.2023 – Attended One day workshop on Nattarivu Ezhuthusala at Vattavada
- 03.02.2023 – Talk on Role of BMC on Local Governance KILA, Thrissur
- 18.02.2023 – 20.02.2023 – KSBC, College of Arts & Science College, Meenchanda at Kozhikode District
- 13.03.2023 – Class given to tribal group at KIRTADS, Kozhikode

#### **7.16. Publications during the year**

- Ressources Mobilization Strategies For Kerala State Biodiversity Strategies Action Plan, Reetha Pandey
- Kerala State Biodiversity Strategies And Action Plan 2022-2023,(SBSAP) (English)  
Dr. C.George Thomas, Dr. Varma, Dr. Satheesh kumar K, Dr. T.S. Swapna, Shri. Govindan KV, Dr. K.T. Chandhramohan, Dr.Preetha N.
- Kerala State Biodiversity Strategies And Action Plan 2022-2023,(SBSAP) (Malayalam)  
Dr. C.George Thomas, Dr. Varma, Dr. Satheesh kumar K, Dr. T.S. Swapna, Shri. Govindan KV, Dr. K.T. Chandhramohan, Dr.Preetha N.
- RKI Agro Biodiversity Project
- 'Conservation and Sustainable utilization of Bio resource'
- PBR 2<sup>nd</sup> Marggarekha Volume (relased of KSBC 2<sup>nd</sup> Congress)

### 7.16.1. Details of sales made during year (2022-23)

Sl.No	Publications	Total numbers sold during April 2022 to march 2023
1	Common Trees Of Kerala	105
2	Keralathile Oushada Sasya Vaividhyam	109
3	Kerala Theerathe Kadal jeevikal	103
4	Keralathile Chitrashalabangal	116
5	Invasive Plants Of Kerala	501
6	Keralathile Sudha Jala Maltsyangal	127
7	Jaiva Krishi Oru Prayogika Padam	136
8	Mushrooms of Kerala	110
9	Caecilian Diversity Of Kerala	97
10	Prakrithi Geetangal	171
11	Paristhithi Vijnhanavum Jaivavaividhya Naattarivum	138
12	Marine Gastropods Of Kerala	94
13	Mangroves & Mangrove Associates Of Kerala	115
14	Common Amphibians Of Kerala	106
15	Feathers Of Vellayani	165
16	Snakes Of Kerala	113
17	Vrikshayurveda	134
18	Biodiversity Richness Of Kerala	157
19	Flying Colours of Vembanad	132
20	Jaivavaividhya Samrekshena Paripalanam Jenangaliloode	615

- Total KSBB publications sold from April 2022 to March 2023 from KSBB library for an amount of Rs.407975 (Four lakh seven thousand nine hundred seventy five)

### 7.16.2. The books printed for KSBB during 2022 April to 2023 March

- Guidelines for Range Forest Officers to enforce regulatory provision of Biological Diversity Act 2002 in Kerala (150 nos )
- Compendium of Government orders and notifications issued under The Biological Diversity Act 2002 and Rules 2004 and Kerala Biological Diversity rules 2008 (150)
- Pamba nadhi theera jaivavaividhya punarujeevanam (3000 nos)
- Annual Report 2021-2022 (Malayalam) (15 nos)
- Annual Report 2021-2022 (English) (35 Nos)
- Kerala State Biodiversity Board Brochure (Pravarthana Samvidhanam) (Malayalam) (3000 nos)
- Kerala State Biodiversity Board Museum Brochure catalogue (3000 nos)
- Kerala State Biodiversity Board Museum Brochure (1000 nos)
- Kerala State Biodiversity Board ABS Brochure (300 nos)



### 7.16.3. Distributed booklets & brochures in different events during 2022 April -2023 March

1	Kerala State Biological Diversity Rules 2008.( Kerala Gazette Extra Ordinary )	85 Nos Distributed Major events
2	Jaivavaividhyam Mukyadharayilekku (Malayalam)	110 Nos (Distributed Exhibitions & Environmental Day Calibrations & Expo 2022
3	Oorga Samrakshanam	2200 Nos Distributed NBA & Major Events
4	Biodiversity Act and Rules 2002 and 2004	1265 Distributed NBA & KSBB 2nd Biodiversity Congress & Major Events
5	Hand Book On BMC ( Malayalam) 2 <sup>nd</sup> Version JAIVA VAIVIDHYA PARIPALANA SAMITHI	9 Nos Distributed NBA Meet & Goi-GEF UNDP Expo
6	Hand Book Of BMC Anubhava Padangal (Kalum Vikendrikriha Jaiva Vaividhya Samrekshnavum: Anubavangal (Malayalam)	118 Nos Distributed NBA & Goi-GEF UNDP Expo & Major Evnts
7	KSBB Brochure On Pravarthana Samvidhanam	2180 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress & Major Events
8	Jaivavaividhya Club Manual	286 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress & Majar events
9	Kerala Biodiversity Museum	3430 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress & Majaor Events
10	Booklet On Jaivavidhyam Mukyadaranayilku	130 Nos Distributed Goi-GEF UNDP Expo & Major Events
11	Thanneer Thadangal	1350 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress & Major Events
12	Booklet On Kerala State Biodiversity Board	1540 Nos Distributed NBA Meet & KSBB Major Evnts
13	Key Achievement 2016 To 2020	430 Nos Distributed NBA Meet & Major Events
14	Karshika Jaivavaividhya Samrakshanm	1570 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress & Major Events
15	Theeradesha Niyanthranangal / Kadal Jaivavaividhyathinta Kalavara	13500 Nos Distributed NBA Meet & Major Events
16	Book On Oushadha Sugandha Sasyangal Thadi Itara Vana Vibhavangal Susthira Shekranam	26 Nos Distributed NBA Meet & Goi-GEF UNDP Expo & Major Events
17	Jaivavaividhya Prapthikulla Niyatranangal	583 Nos Distributed NBA Meet & Goi-GEF UNDP Expo & ABS Workshop & Major Events

18	Experiences Of Decentralized Biodiversity Management	27 Nos Distributed Major Events
19	WILD EDIBLE PLANTS (Immuno Boosting ) Jaiva Vaividhyathile Akakazhchakal Roga Prathirodha Neera Sajamakkan Vanya Oushada Sasyangal	370 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress
20	WILD MEDICAL PLANTS (Immuno Boosting) Jaiva Vaividhyathile Akakazhchakal Roga Prathirodha Neera Sajamakkan Vanya Oushada Sasyangal	344 Nos 370 Nos Distributed NBA Meet & KSBB 2 <sup>nd</sup> Biodiversity Congress
21	Jaiva Vaividhya Paadasala	1020 Distributed To District Co-Ordinates
22	Pamba Nadhi Theera Jaivavidhya Punarujeevanm	2942 Nos Distributed KSBB 2 <sup>nd</sup> Biodiversity Congress & Major Events
23	Bio Resources And Commercial Utilisation Trends, Market, Supply Chain & Sustainability	48 Nos Distributed Major Events
24	National Conference Bio Invasion Trends, Threats And Management Abstract Book	147 Nos Distributed National Conference
25	Guideline For Range Forest Officers To Enforce Regulatory Provision Of Biological Diversity Act 2002 In Kerala	90 Nos Distributed ABS Meet
26	Compendium Of Government Orders and Notifications Issued Under The Biological Diversity Act 2002 and Rules 2004 and Kerala Biological Diversity Rules 2008	62 Nos Distributed ABS Meet
27	Kerala State Biodiversity Board ABS Brochure	283 Nos Distributed ABS Meet
28	PBR 2 <sup>nd</sup> Marggarekha	1217 Distributed KSBB 2 <sup>nd</sup> Biodiversity Congress & ABS Meet & District Coordinates & Major Events
29	Resources Mobilization Strategies For Kerala State Biodiversity Strategies Action Plan,	20 Nos Distributed KSBB 2 <sup>nd</sup> Biodiversity Congress & KSBB major events
30	Kerala State Biodiversity Strategies and Action Plan 2022-2023 ,(SBSAP) (English)	11 Nos Distributed KSBB 2 <sup>nd</sup> Biodiversity Congress & KSBB major events
31	Kerala State Biodiversity Strategies and Action Plan 2022-2023 ,(SBSAP) (Malayalam)	3 Nos Distributed KSBB 2 <sup>nd</sup> Biodiversity Congress
32	Guidelines on roll of district co-ordinates and project fellows	10 nos Distributed To District Co-Ordinates

**Implementation of Right to Information Act**  
**Officers In- charge**

Name & Designation of Officer (s)	Designated post
<b>Dr. C. George Thomas</b> Chairman 01.04.2022 - Continuing	Appellate Authority
<b>Smt. Mini V.</b> Member Secretary (in-charge) 01.04.2022 -25.04.22 <b>Dr. AV. Santhoshkumar</b> Member Secretary 26.04.2022 - 31.03.23	State Public Information Officer
<b>Dr. Sereena J</b> Technical Assistant 01.04.2022 - Continuing	State Assistant Public Information Officer

SUO MOTO DISCLOSURE UNDER SECTION 4(1) (b)

Reporting Year: 2022-23

Sl. No.	Department	No. of Public Authorities	No. of Public Authorities which published the 17 manuals under section 4(1) (b)	No. of public authorities which updated the 17 manuals during the year	No. of public authorities which displayed the 17 manuals online
(1)	(2)	(3)	(4)	(5)	(6)
	Kerala State Biodiversity Board	1	1	1	1

DESIGNATION OF PUBLIC INFORMATION OFFICERS/ APPELLATE AUTHORITIES

Reporting Year: 2022-23

Sl. No.	Department	No. of Public Authorities	No. of Public Information Officers designated	No. of Assistant Public Information officers Designated	No. of Appellate Authorities Designated
(1)	(2)	(3)	(4)	(5)	(6)
	Kerala State Biodiversity Board	1	1	1	1

DISPOSAL OF INFORMATION REQUESTS BY PUBLIC INFORMATION OFFICERS

Reporting Year: 2022-23

Name of the Department	No. of requests pending at end of last year	No. of requests received during the year	Total No. of requests	No. of requests disposed	No. of requests rejected	No. of requests deemed to be refused under section 7(2)	% of cases access to information denied
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Kerala State Biodiversity Board	Nil	18	18	17	NIL	NIL	0%

INFORMATION REQUESTS REJECTED BY PUBLIC INFORMATION OFFICERS

Reporting Year: 2022-23

Name of the Department	Total no. of requests rejected	No. of requests rejected under section 8	No. of requests rejected under section 9	No. of requests rejected under section 11	No. of requests rejected under section 24	No. of requests rejected other sections
(1)	(2)	(3)	(4)	(5)	(6)	(7)
KSBB	NIL	NIL	NIL	NIL	NIL	NIL

**DISPOSAL OF FIRST APPEALS BY DESIGNATED APPELLATE AUTHORITIES**

Reporting Year: 2022-23

Name of the Department	No. of first appeals pending with appellate authorities on 1.4.2019	No. of first appeals preferred during the year	Total no. of first appeals with appellate authorities (2+3)	No. of first appeals disposed	No. of first appeals rejected	% of first appeals rejected	No. of first appeals pending for more than 45 days
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Kerala State Biodiversity Board	NIL	NIL	NIL	NIL	NIL	0%	NIL

**PENALTIES IMPOSED & COLLECTED**

Reporting Year: 2022-23

Name of department	Penalties imposed in previous year pending for collection	Details of penalties imposed by information commission under section 20 (1)	Total	Details of penalties collected
(1)	(2)	(3)	(4)	(5)
Kerala State Biodiversity Board	NIL	NIL	NIL	NIL

**DISCIPLINARY ACTION TAKEN AGAINST OFFICERS IN RESPECT OF ADMINISTRATION OF RTI ACT**

Reporting Year: 2022-23

Name of department	Details of disciplinary action recommended by information commission under section 20 (2)	Details of disciplinary action taken based on recommendation of information commission	Other disciplinary actions taken (other than those recommended by information commission)
(1)	(2)	(3)	(4)
Kerala State Biodiversity Board	NIL	NIL	NIL

**SUMMARY OF COSTS, FEES & CHARGES COLLECTED BY PUBLIC AUTHORITIES REPORTING YEAR: 2022-23**

Name of the Department	Cost collected section 4 (4)	Fee collected section 6 (1)	Fee collected section 7 (1)	Fees Collected Section 7 (6)	Other charges collected (specify)	Total collection
(1)	(2)	(3)	(4)	(5)	(6)	(7)
KSBB	NIL	₹ 190	₹ 2232	NIL	NIL	2422

**Kerala State Biodiversity Board**

(A Government of Kerala Undertaking)  
Kowdiar Thiruvananthapuram Kerala  
Statement of Affairs as at 31/03/2023

Particulars	Note	INR	
		As at 31 Mar	
		2023	2022
<b>I Source of Funds</b>		<b>1,72,92,128</b>	<b>99,48,415</b>
<b>1 Own Funds</b>			
Capital Reserve	1	97	91
Surplus	2	-1,09,526	-7,73,245
<b>2 Current liabilities</b>		<b>1,74,01,557</b>	<b>1,07,21,569</b>
Government Grant balances	3	1,11,47,647	31,33,750
Funded Projects	4	46,16,737	72,47,464
Other current liabilities	5	16,37,173	3,40,355
<b>II Application of Funds</b>		<b>1,72,92,128</b>	<b>99,48,415</b>
<b>1 Long Term Assets</b>		<b>37,097</b>	<b>37,091</b>
Fixed Assets		97	91
Tangible Assets	6	97	91
Long Terms Loans and Advances		37,000	37,000
Deposits	7	37,000	37,000
<b>2 Current Assets</b>		<b>1,72,55,031</b>	<b>99,11,324</b>
Cash and cash equivalents	8	1,70,99,031	98,96,324
Short-term loans and advances	9	1,56,000	15,000

The accompanying Notes form an integral part of these Financial Statements

**Auditor's Report**




As per our Report of even date

  
CA Gautham Sreekumar

Mem No: 237284  
Designated Partner  
G S P and Company LLP (FRN: 0181845/S000048)  
UDIN: 24237284BKAHDA8165

Thiruvananthapuram  
27th May 2024

**For and on behalf of the Board**

 Finance officer  
 Administrative officer  
 Member Secretary

**Dr. V. Balakrishnan**  
Member Secretary  
Kerala State Biodiversity Board  
Kowdiar, Thiruvananthapuram



## Kerala State Biodiversity Board

(A Government of Kerala Undertaking)

Kowdiar Thiruvananthapuram Kerala

Income and Expenditure Account for the year ended 31/03/2023

Particulars	Note	for the year ended 31 Mar	
		2023	2022
<b>I Income</b>		<b>1,56,84,079</b>	<b>82,23,798</b>
1 Grant from GoK			
GoK 2406-02-110-59-31 (NP) Salary		1,35,62,501	64,94,697
GoK 2406-02-110-59-36 (NP) Non Salary		13,84,374	13,00,000
2 Other Income	10	7,16,636	2,52,040
3 Nominal value of grant funded assets		-	-
4 Interest Received	11	20,568	1,77,061
<b>II Expenditure</b>		<b>1,50,20,361</b>	<b>1,14,67,718</b>
Employee Expenses	12	1,39,26,013	1,20,00,824
Repairs and Maintenance, Upkeep	13	2,36,162	1,15,840
Utilities	14	4,90,333	1,15,899
Other Expenses	15	3,66,584	3,87,076
Finance Costs	16	1,269	920
Exceptional Items	17	0	-11,52,840
Round Off		-	-1
<b>III Surplus/ Deficit</b>		<b>6,63,719</b>	<b>-32,43,920</b>
<b>IV Allocation</b>		<b>6,63,719</b>	<b>-32,43,920</b>
Transfer to Accumulated surplus/deficit		6,63,719	-32,43,920

The accompanying Notes form an integral part of these Financial Statements

### Auditor's Report

As per our Report of even date

CA Gautham Sreekumar

Mem No: 237284

Designated Partner

G S P and Company LLP (FRN: 018184S/S000048)

UDIN: 24237284BKAHDA8165

Thiruvananthapuram

27th May 2024

### For and on behalf of the Board

Finance officer

Administrative officer

Member Secretary

**Dr. V. Balakrishnan**  
Member Secretary  
Kerala State Biodiversity Board  
Kowdiar, Thiruvananthapuram



Kerala State Biodiversity Board  
Kowdiar Thiruvananthapuram Kerala  
Annexures to Accounts for the year ended 31/03/2023  
Annexure 1 - Grant Accounts

Particulars	As at 01-04-2022		Receipt		Transfer		Payment			As at 31-03-2023	
	Grants	Others	Reallotted Resumed fund	Total	Trf of balance	Trf (InterHead)	Utilized Revenue	Utilized Assets	unutilized grant refunded	Total	
<b>Total</b>	31,33,750	-	1,16,09,501	6,67,59,501	-	-1,49,46,875	-4,11,86,988	-9,28,328	-22,83,413	-4,34,19,440	1,11,47,647
<b>1</b> GoK 3435-03-101-99 (Plan)	-1,31,75,351	4,00,00,000	-	4,00,00,000	-	2,39,11,708	-3,71,82,666	-2,21,996	-	-3,74,04,662	1,33,31,695
Non-moving prior balances	4,15,495	-	-	-	-	-	-	-	-	-	4,15,495
unidentified project balance	2,55,355	-	-	-	-	-	-	-	-	-	2,55,355
Agrobiodiversity conservation	9,305	-	-	-	-	-	-	-	-	-	9,305
Coastline conservation	65,600	-	-	-	-	-	-	-	-	-	65,600
unidentified credits	-	-	-	-	-	-	-	-	-	-	-
19-03-2015	14,300	-	-	-	-	-	-	-	-	-	14,300
25-03-2015	7,162	-	-	-	-	-	-	-	-	-	7,162
15-06-2015	36,025	-	-	-	-	-	-	-	-	-	36,025
Interest accrued	27,748	-	-	-	-	-	-	-	-	-	27,748
GoK Plan 2018 - 2019	-14,78,697	-	-	-	-	-	-	-	-	-	-14,78,697
GoK Plan 2019 - 2020	-73,48,126	-	-	-	-	59,76,630	-	-	-	-	-13,71,496
GoK Plan 2020 - 2021	-74,76,273	-	-	-	-	2,28,18,175	-	-	-	-	1,53,39,902
GoK Plan 2021-2022	27,14,250	-	-	-	-	-	-	-	-	-	27,14,250
GoK plan 2022-23	4,00,00,000	-	-	4,00,00,000	-	-	-3,71,82,666	-2,21,996	-	-3,74,04,662	25,95,338
expenditure of earlier years resumed by government	-	-	-	-	-	-48,83,097	-	-	-	-	-48,83,097
<b>2</b> State Biodiversity Fund	70,69,010	-	1,12,12,952	1,12,12,952	-	-1,76,55,999	-36,25,033	-	-	-36,25,033	-29,99,070
2011 - 2012 to 2013 - 2014	3,10,300	-	-	-	-	-	-	-	-	-	3,10,300
2014 - 2015	5,01,188	-	-	-	-	-	-	-	-	-	5,01,188
2015-2016	5,04,265	-	-	-	-	-	-	-	-	-	5,04,265
2016-2017	4,83,558	-	-	-	-	-	-	-	-	-	4,83,558
2017-2018	3,61,258	-	-	-	-	-	-	-	-	-	3,61,258
2018 - 2019	-14,89,606	-	-	-	-	-	-	-	-	-	-14,89,606
2019-2020	-45,000	-	-	-	-	-	-	-	-	-	-45,000
2020-2021	-	-	-	-	-	-	-	-	-	-	0
2022-2023	-	-	-	-	-	-	-	-	-	-	-
Resumed by Government	64,43,047	-	1,12,12,952	1,12,12,952	-	-1,76,55,999	-	-	-	-36,25,033	-36,25,033





3	GoK 2406-02-110-59-31 (NP) Salary Trf to I&E Account	-	1,36,50,000	-	1,36,50,000	-	-1,35,62,501	-	-	-	-	-	87,499
4	GoK 2406-02-110-59-36 (NP) Non Salary Trf to I&E Account	-	15,00,000	-	15,00,000	-	-13,84,374	-	-1,06,332	-	-1,06,332	-	9,294
5	Resumed by Government (NP)	11,10,812	-	-	3,96,549	-	-15,07,361	-	-22,83,413	-	-22,83,413	-	-22,83,413
6	Resumed by Government - Gok Non Plan Rkl Scheme	11,10,812	-	-	3,96,549	-	-15,07,361	-	-22,83,413	-	-22,83,413	-	-22,83,413
	Rkl 2020 Scheme - H/A 5475-00-115-94	81,29,279	-	-	-	-	-47,48,348	-	-3,79,289	-	-	-	30,01,642
	Conservation of Agro Biodiversity	4,47,48,348	-	-	-	-	-47,48,348	-	-	-	-	-	4,00,00,000
	Dubassa Tradable/Commercial Potential Res	-1,54,19,006	-	-	-	-	-2,85,530	-	-2,85,530	-	-2,85,530	-	-1,57,04,536
	Institutional changes	-69,01,998	-	-	-	-	-79,860	-	-79,860	-	-79,860	-	-69,81,858
	Pampa Riverine Biodiversity Rejuvenation	-1,42,98,065	-	-	-	-	-13,899	-	-13,899	-	-13,899	-	-1,43,11,964



**Kerala State Biodiversity Board**  
**Kowdiar Thiruvananthapuram, Kerala**  
**Annexure 2 - Funded Projects**

Particulars	As at 01-04-2022						As at 31-03-2023					
	Funds received	Interest	Refund in	Others	Total	Trf (Intra Head)	Trf (Inter Head)	Utilised	Assets	Refund OUT	Others	Total
<b>1 DoECC</b>	25,43,606	96,500	-	-	24,40,106	-	-	50,70,853	-	-	-	50,70,853
Canal Works 2015 - 2016	27,20,000	-	-	-	-	-	-	-	-	-	-	46,16,737
Gmal Works 2015 - 2016	25,00,000	-	-	-	-	-	-	-	-	-	-	27,20,000
Gmal Works 2013 - 2014	2,20,000	-	-	-	-	-	-	-	-	-	-	2,20,000
<b>2 UNDP</b>	8,86,589	23,324	-	-	2,42,944	-	-	3,76,946	-	-	-	3,76,946
GEF Munnar Landscape Project 2014 - 2015	-71,107	-	-	-	-	-	-	-	-	-	-	-71,107
GEF Munnar Landscape Project 2015 - 2016	2,23,952	-	-	-	-	-	-	-	-	-	-	2,23,952
GEF Munnar Landscape Project 2018 - 2019	-4,10,863	-	-	-	-	-	-	-	-	-	-	-4,10,863
GEF Munnar Landscape Project 2019 - 2020	7,99,520	-	-	-	-	-	-	-	-	-	-	7,99,520
Updating State Biodiversity Strategies & Action Plan 2021-2022	1,50,070	23,324	-	-	2,19,620	-	-	3,76,946	-	-	-	3,76,946
Interest Received	1,90,617	23,324	-	-	23,324	-	-	-	-	-	-	2,17,941
<b>3 National Biodiversity Authority (NBA)</b>	95,22,833	73,176	-	-	21,97,162	-	-	46,93,887	-	-	-	46,93,887
Component Training Material and Printing (14 - 15)	-	-	-	-	-	-	-	-	-	-	-	-
Developing and Revamping of Website (14-15)	-	-	-	-	-	-	-	-	-	-	-	-
Peer to Peer Learning (14-15)	-250	-	-	-	-	-	-	-	-	-	-	-250
Plan Fund from NBA	14,04,919	-	-	-	-	-	-	-	-	-	-	14,04,919
Thematic Expert Committee (14-15)	4,242	-	-	-	-	-	-	-	-	-	-	4,242
Printing of BMC Reports (14-15)	1,14,701	1,95,000	-	-	1,95,000	-	-	3,02,452	-	-	-	3,02,452
Benefit Sharing Component to Concerned BMC	15,46,721	-	-	-	-	-	-	14,83,861	-	-	-	14,83,861
NBA - Capacity Building	-11,49,600	-	-	-	-	-	-	-	-	-	-	-11,49,600
NBA Func (COP 11 engagement)-2018-19	-	-	-	-	-	-	-	-	-	-	-	-
NBA Func (COP 11 engagement)-2020-21	57,344	-	-	-	-	-	-	-	-	-	-	57,344
NBA Func (COP 11 engagement)-2021-22	4,99,054	-	-	-	-	-	-	-	-	-	-	4,99,054
NBC 2017 Fund from NBA	-	-	-	-	-	-	-	-	-	-	-	-
NBA - Exposure Visit of PCCF & MS of APFSBB	-	-	-	-	-	-	-	-	-	-	-	-
E-PBR - National Informatics Centre NBA	-	-	-	-	-	-	-	-	-	-	-	-
PBR Monitoring Committee - Second Meeting	-	-	-	-	-	-	-	-	-	-	-	-
LSG Biodiversity Conservation and Development	-	-	-	-	-	-	-	-	-	-	-	-
NBA - Updation Quality Improvement of PBR	10,00,000	-	-	-	-	-	-	3,63,059	-	-	-	3,63,059
International Biodiversity Day	3,511	-	-	-	-	-	-	-	-	-	-	3,511
International Biodiversity Day 2021	-	-	-	-	-	-	-	-	-	-	-	-
Integrating Biodiversity Conservation Biodiversity Award	-18,000	-	-	-	-	-	-	-	-	-	-	-18,000
State level workshop on biodiversity action plan	-73,694	-	-	-	-	-	-	-	-	-	-	-73,694
Interest received	1,32,085	73,176	-	-	73,176	-	-	-	-	-	-	1,32,085
Grand in aid outsourcing /contract personal 2022-23	8,28,986	-	-	-	8,28,986	-	-	13,28,360	-	-	-	13,28,360
International Day for biological diversity 2022	1,00,000	-	-	-	1,00,000	-	-	1,30,212	-	-	-	1,30,212
NBA Biodiversity awards 2023	-	-	-	-	-	-	-	56,385	-	-	-	56,385
NBA Project strengthening and capacity program	10,00,000	-	-	-	10,00,000	-	-	9,89,578	-	-	-	9,89,578



Particulars	As at		Receipt				Transfer		Payment				As at	
	01-04-2022		Funds received	Interest	Refund In	Others	Total	Trf (Intra Head)	Trf (Inter Head)	Utilised	Assets	Refund OUT	Others	Total
4 Coastal Ecosystem Conservation 2011 - 2012	43,215		-	-	-	-	-	-	-	-	-	-	-	43,215
	43,215													43,215
5 Plan Fund EMA	31,907		-	-	-	-	-	-	-	-	-	-	-	31,907
	31,907													31,907
6 MoEF	23,631		-	-	-	-	-	-	-	-	-	-	-	23,631
WGEEP	23,631													23,631
7 National Medicinal Plants Board (NMPB)	1,02,239		-	-	-	-	-	-	-	-	-	-	-	1,02,239
NMPB 2014 - 2015	9,05,343													9,05,343
NMPB 2018 - 2019	-1,19,148													-1,19,148
Resource Augmentation, Sustainable Harvesting and Value addition of medicinal plant resources through BMC	11,26,730		-	-	-	-	-	-	-	-	-	-	-	11,26,730
8 National Centre for Sustainable Coastal Mts (NCSCM)			-	-	-	-	-	-	-	-	-	-	-	
Preparation of DPR for Conservation of Sacred Grove														
9 PCC 2020-21	-82,950		-	-	-	-	-	-	-	-	-	-	-	-82,950
Project Coordination Cell	-82,950													-82,950





**22 MAY**  
INTERNATIONAL DAY FOR BIODIVERSITY

**From Agreement to Action:  
Build Back Biodiversity**

## From agreement to action: build back biodiversity

As the global community is called to re-examine our relationship with the natural world, one thing is certain: despite all our technological advances, we are completely dependent on healthy and vibrant ecosystems for our water, food, medicines, clothes, fuel, shelter, and energy, just to name a few. This involves respecting, protecting, and repairing our biological wealth. Undoubtedly, 2023 is special in terms of biodiversity conservation. We now have a renewed sense of hope with the adoption of the Kunming-Montreal Global Biodiversity Framework, a historic agreement signed in December 2022 that sets goals and concrete measures to stop and reverse the loss of nature by 2050. That is why the theme of the International Day for Biological Diversity 2023 is 'From agreement to action: build back biodiversity'. The slogan promotes the idea that we have an action plan agreed upon at a global level, and we must implement all the measures that the agreement contemplates before 2030. Only in this way will we be able to obtain protected and sustainable biological diversity by 2050.



**Kerala State Biodiversity Board**