

# ANNUAL REPORT 2013 - 2014



KERALA STATE BIODIVERSITY BOARD





KSBB  
ANNUAL REPORT  
2013 - 2014

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Dr. K. P. Laladhas  
Member Secretary

KERALA STATE BIODIVERSITY BOARD  
L-14, Jai Nagar, Medical College P.O., Thiruvananthapuram  
Ph: 0471-2554740, Telefax: 0471-2448234  
Email: keralabiodiversity@gmail.com  
Website: www.keralabiodiversity.org

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www.communiquetvm.tumblr.com

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Gokul R.



*Photo: Riyas Arun T.*

Purple Moorhen

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L14, Jainagar, Medical College.P.O  
Thiruvananthapuram - 695 011









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Dr.Oommen.V.Oommen  
Chairman



## Prelude

In October 2010 in Nagoya, Japan, over 190 countries around the world reached a historic global agreement to take urgent action to halt the loss of biodiversity. The international community is eagerly looking out for the 12th meeting of the Conference of the Parties to the Convention on Biological Diversity with focus on sustainable development from 6 - 17 October 2014 at Pyeongchang, South Korea. This is the time for reckoning by all committed to safeguarding the variety of life on Earth. The rich natural diversity of Kerala forms an important part of our natural heritage and is an essential economic resource. Large number of plant and animal species are endangered due to habitat loss and fragmentation of forests. Most of the rivers of Kerala have become seasonal rain drains due to the degradation of forests. The unsustainable exploitation of natural products, for timber, forest produce and medicinal plants has led to depletion of natural resources. KSBB is firmly dedicated to delivering its commitments of conserving our natural heritage through action at local level. Although achieving our aims will be a big challenge many positive steps have been taken to address these issues targeted at community involvement in management of natural resources. Government will play an important role but cannot deliver this strategy alone. Our conservation efforts, supported actively by public have already made a vital contribution in protecting biodiversity. We fully recognize the importance of people in helping to arrest the loss of biodiversity. Ultimately, conservation efforts can only truly succeed with society's support. All our efforts were thus concentrated in empowering the local Biodiversity management committees to manage their resources sustainably. KSBB has established a foundation for conserving biodiversity at grassroot level and I look forward to building on this foundation in coming years. The purpose of this annual report is to offer a glimpse into what Kerala State Biodiversity Board has accomplished during 2013-2014.





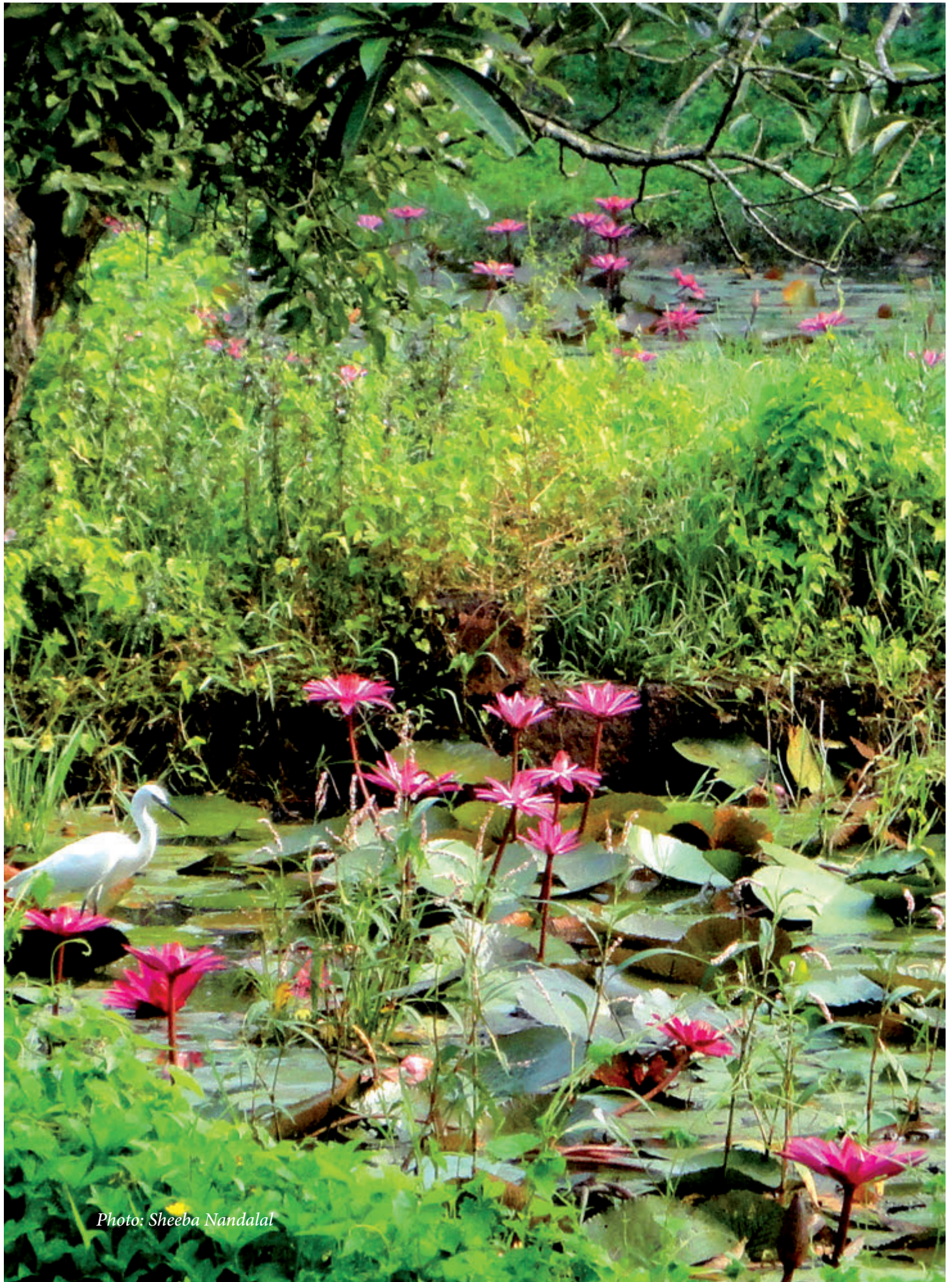
Dr. K.P. Laladhas  
Member Secretary



## Foreword

It gives me immense pleasure in presenting Kerala State Biodiversity Board's Annual report, a compilation of the institution's achievements and challenges in conserving Kerala's rich biodiversity. Notable progress has been made during the financial year, and our ambition is to ensure that the value of nature's services is better understood and to enhance people's personal connection with wildlife and nature. This year the Board has built on past investment and achievements in protecting, enhancing and restoring the condition of the region's natural resources. Having established functional BMC in all LSG's, building capacity across a range of institutions including BMC and creating awareness of the Act and rules was identified as the thrust area for 2013-2014. During the reporting period, efforts were concentrated on enhancing institutional capacity of relevant local self government by conducting BMC empowerment programme for Panchayat Presidents and Secretaries through District Panchayats. It pleases me to report a vastly improved facility for research in the form of a Biodiversity Research Centre. Our Conservation projects are gaining momentum and we implemented programmes targeted at conserving flagship endemic species, traditional varieties, farm animal diversity, marine and aquatic diversity, urban biodiversity etc. Peoples Artificial Reefs is a community based benefit sharing initiative implemented by KSBB for sustainable development. This is also an example of how knowledge related to genetic resource use can be effectively utilized to widen the economic opportunities of the communities. It is a privilege and great responsibility for KSBB to conserve this precious biodiversity which calls for collective action. I would like to thank the Hon'ble Chief Minister, Minister for Environment, the Board, the Executive team and all the field level staff for their unwavering support during the year in protection of biodiversity of Kerala.





*Photo: Sheeba Nandalal*



# DOCUMENTATION OF BIODIVERSITY THROUGH PEOPLE'S BIODIVERSITY REGISTER (PBR)

Exploration and inventorying floral and faunal diversity were undertaken by the Biodiversity Management Committee's (BMC) constituted by KSBB at LSG level, and the data were documented in the form of People's Biodiversity Register (PBR). PBR provides data on the the present status of biodiversity as well as the traditional knowledge associated with it. The technical support for preparation of PBR was provided by the Technical support group constituted in all the districts of Kerala.

## PBR Trainings

KSBB conducted PBR training sessions and consolidation workshops during 2013-2014 in 151 Grama Panchayats. PBR was successfully completed in 49 panchayats during 2013-2014. PBR works in municipalities of Kerala were initiated and training workshops were conducted in seven municipalities. Linking PBRs data to conservation and developmental agenda of panchayats, based on local issues, knowledge and available resources is underway.





## Details of BMC Constituted and PBR prepared-2013-14

1.	Total BMCs Constituted as of March 2014	1043 BMCs (978 Grama panchayats + 60 Municipalities + 5 Corporations)
2.	Total No. of reconstituted BMCs (2013-2014)	154 BMCs
3.	Total No. of District Co-ordinators	14
4.	Total No. of Project Fellows	61
5.	Total No. of PBRs completed and submitted to the Board	49
6.	Total No. of PBR Trainings given up to March 2014	151

## District wise details of PBR Trainings - 2013- 2014

Sl. No.	District	No. of BMCs where PBR training has been conducted
1	Thiruvananthapuram	14 GP +1M
2	Kollam	11 GP
3	Pathanamthitta	7 GP +2M
4	Alappuzha	7 GP + 1M
5	Kottayam	10 GP
6	Idukki	Nil
7	Ernakulam	15 GP
8	Thrissur	25 GP+1M
9	Palakkad	12 GP
10	Malappuram	17 GP
11	Kozhikode	13 GP
12	Wayanad	1M
13	Kannur	12 GP+2M
14	Kasaragod	Nil
	Total	143 GP + 8 M

(GP- Gramapanchayat, M – Municipality)





# MARINE BIODIVERSITY REGISTER (MBR)

The underwater ecology of the inshore areas (440 sq km) of a stretch of 20 km sea coast from Valiathura to Puthukurichy, Thiruvananthapuram was documented in MBR. The MBR initiated by KSBB is a pioneering work to document the traditional knowledge systems of local fishermen. It is a record of the demersal species, ecologically important reefs and rocky areas, traditional knowledge on navigation, bottom configuration of the seabed, shoreline changes, and provided indicators to overfishing and marine resource depletion. The traditional way of navigation in sea using a visual triangulation method (kanicham) to identify location of naturally occurring reefs has been illustrated. MBR is a pictorial guide to the diversity of marine resources as sponges, corals, jelly fish, molluscs, crabs, star fish, rare fishes, sea birds, sea snakes, soft corals etc. The register is expected to develop strategies for ecosystem based approaches for sustainable management of marine natural resources with community participation and will play an important role in generating awareness of conserving natural resources sustainably.

## New Reports

A significant outcome of this study is recording of nine new species from Kerala coasts for the first time.

\* ***Sirembo jerdoni*** (Day, 1888)

Brown-banded cusk-eel

Order: Ophidiiformes (Cusk eels)

Family: Ophidiidae (Cusk-eels)

A benthic species found on the continental shelf. This is the first record of this specimen from southwest coast of India.

\* **Sand crab (*Albunea systemma*)**

First report from India

\* **Rediscovery of Indian ringed skate**

***Okamejei powelli*** (Alcock, 1898)

Order: Rajiformes (Skates and rays)

Family: Rajidae (Skates)

Very rare, small, poorly known demersal skate. First report from India

\* ***Gymnothorax meleagris*** (Shaw, 1795)

Order: Anguilliformes (Eels and morays)

Family: Muraenidae (Moray eels)

Common name: Turkey moray

First report from Kerala

\* ***Heteromycteris oculus*** (Alcock, 1889)

Common name: Eyed sole

Order: Pleuronectiformes (Flatfishes)

Family: Soleidae (Soles)

First record from Kerala coast; probably the first record from west coast of India

\* ***Hoplolatilus fronticinctus*** (Günther, 1887)

Order: Perciformes

Family: Malacanthidae (Tilefishes)

Common name: Pastel tilefish

First report from Kerala

\* Identification process for three species probably of the family Aulostomidae, Engarulidae, Zebrias sp is underway.



*Hoplolatilus fronticinctus*



*Sirembo jerdoni*



# STRENGTHENING BMC

## Capacity building programmes for BMC/LSG

KSBB constituted BMCs in all LSG's during 2011-2012 for the successful implementation of the Biological Diversity Act 2002 and Rules, 2004 and Kerala Biological Diversity Rules, 2008.

Having established functional BMC in all LSG's, building capacity across a range of institutions including BMC and creating awareness of the Act and rules was identified as the thrust area for 2013-2014. During the reporting period, efforts were concentrated on enhancing institutional capacity of relevant local self government by conducting BMC empowerment programme for Panchayat Presidents and Secretaries through District Panchayats.



*KSBB Chairman Dr.Oommen V. Oommen  
Inaugurating BMC awareness programme*



*BMC awareness programmes in various districts*

## Highlights of the Programme:

1. 21 capacity building and awareness campaigns were conducted.
2. The programme started during September 2013 and till March 2014, seven districts of Kerala namely, Malapuram, Kozhikode, Ernakulam, Kottayam, Idukki, Kasaragod and Kannur were covered.

In all the districts, the programme was led by Dr. Oommen V. Oommen, Chairman, KSBB with the support of District Co-ordinators and Project Fellows of concerned districts.

### Outcome

Increased awareness on the following aspects was achieved:

- Biological diversity act, its importance, sustainable use and its benefit.
- Structure, powers, responsibilities, funding and accountability of BMC
- Duties as Environmental watch group (Order G.O (P) No: 04/13/ Env).
- Documentation of PBR and training for the same.
- PBR and its importance
- Identification of local environmental problems and solutions

### Outputs

During the workshops following writeups in regional language were prepared and distributed.

- Roles and responsibilities of BMC based on Biodiversity management committee's operational tool kit published by National Biodiversity Authority
- Order G.O (P) No: 04/13/ Env authorizing BMC to function as environmental watch group.

## Knowledge sharing among BMC/ LSG

- For conservation of Sasthamkotta, a Ramsar site under the chairmanship of Chief Minister a meeting was convened on 14.06.2013 and KSBB was entrusted with the responsibility of ensuring protection of

biodiversity, preparation of Biodiversity register, conservation and augmentation of the indigenous fish stock of Sasthamkotta Lake. Meeting for BMC members of Sasthamkotta, Mynagapally and West Kallada was convened on 20-07-2013 at Kollam District Panchayat Office to address the environmental problems faced by Sasthamkotta Lake. The meeting was targeted at formulating conservation strategies for the fresh water ecosystem of Sasthamkotta Lake. On 30.12.2013 under the chairmanship of Additional Chief Secretary a review meeting was conducted. A Joint Biodiversity management committee consisting of BMC members of the three panchayats was constituted with Sasthamkotta block panchayat president as the chairman and the chairperson of the other two BMC as Joint convenors. A management plan was proposed to protect the watershed by massive afforestation and other measures.

- A meeting of BMC members of 3 panchayats of Koipuram, Pandanad and Mannar was organized as part of KSBB Pampa conservation project on 07/06/2013. A training programme for project fellows for conducting survey and implementation of the modules for rejuvenation of Pampa River was conducted and work has been initiated in Koipuram Panchayat. A ward level Pampa conservation committee is being formulated and actions are being taken to create awareness among the local people.
- A meeting of District coordinators was conveyed on 10/9/ 2013 and 10/02/2014 for district coordinators of all districts to review the activities being undertaken in the district, criteria for selecting best BMC, reconstitution of expired BMC and for suggesting conservation projects in each district.
- BMC meet was organized on 20.02.2014 at Institution of Engineers Hall, Vellayambalam. Around 110 BMC members participated in the meet. BMC members shared their experiences and success stories achieved in their respective panchayats. The representatives from the BMC's which have been honoured with the first Best BMC award instituted by KSBB shared experiences on conservation programmes being carried out by them.
- Annual Review meeting of DCs and PFs was conducted on 21-02-2014 to review the progress in implementing the various provisions of the Biodiversity Act, status of PBR preparation and trainings imparted and to review the conservation programmes undertaken in the different districts.

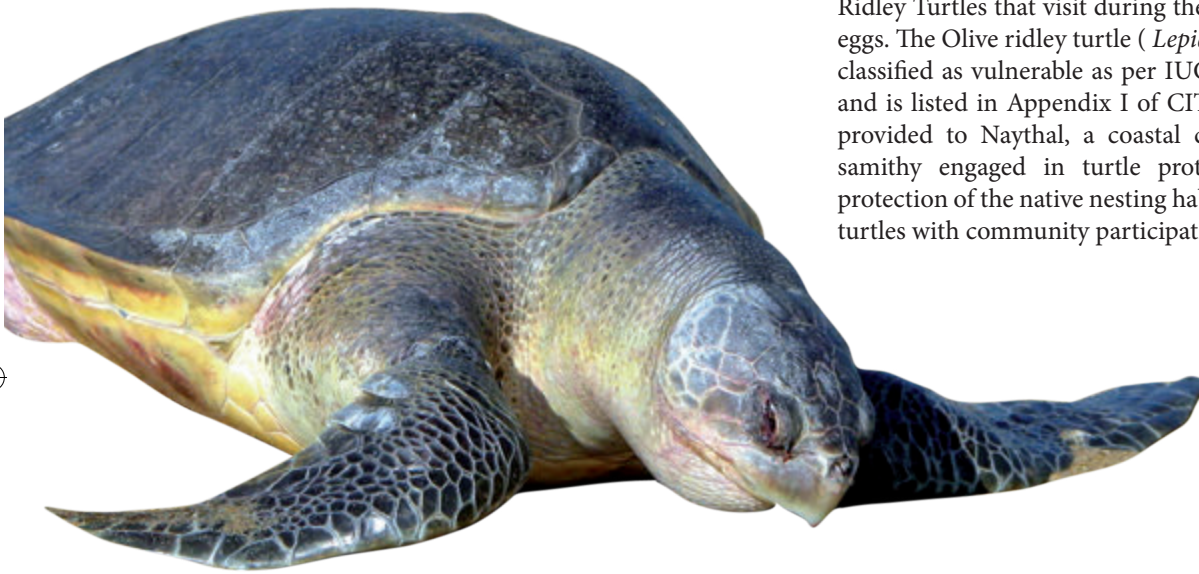


# CONSERVATION PROGRAMMES

## *IN SITU* CONSERVATION OF FLAGSHIP/ ENDEMIC SPECIES

### Conservation of Turtles

The Thaikadappuram beach near Neeleswaram in Kasaragod district in Kerala is famous for the Olive Ridley Turtles that visit during the rainy season to lay eggs. The Olive ridley turtle (*Lepidochelys olivacea*) is classified as vulnerable as per IUCN Red Data Book, and is listed in Appendix I of CITES. Assistance was provided to Naythal, a coastal conservation action samithy engaged in turtle protection activity for protection of the native nesting habitats of Olive ridley turtles with community participation.



### Highlights of the project

- The main threats identified were habitat degrading developmental activities along the coast and degradation of coastal ecosystem due to sand mining.
- A study of the decadal trend of nesting shows that during 2000- 2010 about 35 to 40 turtles visited/ year but the number came down drastically and during 2013 only 10 turtles visited the place.
- Monitoring for nesting activity conducted along 23 km stretch of seashore including Ajanur, Kanhangad, Neeleswaram and Padanna by trained volunteers taking into consideration low tide and high tide.
- The turtle eggs collected were reared in hatchery at Thaikadapuram and young ones released back to sea.
- Out of the 1079 eggs collected during 2013-2014, 657 hatched with a survivability of 83.4 %.
- With participation of forest dept, locals and school children 548 hatchlings of turtles were released to sea.
- Injured turtles rescued in Turtle rescue centre were released back to sea.

## Awareness programmes

- Kasragode was declared as Turtle conservation zone.
- A two day Sea viewing camp was organized in which 11 schools participated.
- Awareness campaign for teachers of 40 schools and two day nature study camps were conducted for children.
- Mass awareness campaigns were organized for fisher-folk and local community through educational institutions and religious institutions from Chittari to Thaikadapuram.
- Photography panel exhibition.
- 5000 notices, 5000 pamphlets and activity book for children were distributed as part of the programme.

## Conservation of native inland fishes

Native inland fishes in Pampa River have drastically reduced in numbers and many of them are likely to face extinction in the near future. Most fish species use flood plain canal system as corridors to spawning grounds during high water flow and juvenile fishes utilise nutrient rich flood plains and their associated complex habits as nursery grounds. Excessive fishing takes place during migration of fishes from the river and low land to the upland paddy fields for pairing and egg laying. KSBB project aims to conserve the migrating fishes during monsoon flood plain fishery thereby enhancing fish population in Pampa River, its tributaries and allied water bodies. The project is implemented in Pandanad and Mannar Gramapanchayats of Alappuzha district and Koippuram Grama Panchayat of Pathanamthitta district.



## Distribution and mapping of endemic trees of Edavaka Gramapanchayat, Wayanad

KSBB is undertaking a survey at Edavaka Gramapanchayat of Wayanad district to assess the status of endemic tree species. The basic details were compiled from the People's Biodiversity Register prepared by Edavaka Panchayat and based on this a project on GIS based biodiversity information system for biodiversity assessment was formulated. The project aims at mapping the distribution pattern, and conservation of endemic species through people's participation. An extensive field survey was carried out at Edavaka GP from November 2013 to March 2014 for locating endemic species and its transformation to GIS platform and further analysis and mapping.

The area harbors more than 25 species from different families including Dipterocarpaceae, Apocynaceae, Anacardiaceae, Malvaceae, Euphorbiaceae, Elaeocarpaceae, Tiliaceae, Oleaceae, Combretaceae which includes 8 species endemic to Western Ghats and 2 vulnerable species.



# PROTECTION OF TRADITIONAL VARIETIES:

## Conservation of Tuber Crop Diversity of Wayanad

To conserve indigenous tuber crop varieties of Wayanad, the project 'Conservation of tuber crop diversity in Wayanad and its popularization among the villagers of the district' was implemented at Edavaka Gramapanchayat through the Biodiversity Management Committee. The project aims to conserve genetic diversity of neglected and underutilized root and tuber crops through germplasm conservation.

### Highlights of the project

- Community level germplasm centre in one acre in Edavaka Gramapanchayat.
- Fifty two varieties of different tuber crops collected and raised, of which seven are wild ones, procured from forests with the help of tribal people.
- Germplasm centres were established in two schools at Edavaka Gramapanchayat and one each at Mananthavady and Vellamunda Gramapanchayats.
- Germplasm of 13 varieties of Greater yam, 11 varieties of tapioca, 5 varieties of sweet potato, 3 varieties each of arrowroot and Elephant foot Yam, 7 varieties of wild tuber and 11 varieties of colcosia are conserved.



## Conservation of Rice varieties of Wayanad

Kerala is home to diverse varieties of rice such as Onamottan, Chennellu, Chomaala, Adukkkan, Velumbala, Njavara etc with beneficial characters as rich aroma, resistance to diseases and pests, drought and flood tolerance, medicinal value etc. Cheruvayal Raman, a member of Kurichiya tribal community has been identified as saviour of traditional varieties of rice. Financial assistance was provided for establishing a community seed bank and field level germplasm conservation centre for 41 local varieties of rice.



# CONSERVATION OF FARM ANIMAL DIVERSITY

## Conservation of Cheruvally and Vechur Cattle

The native breeds of Kerala have low feed requirements, high resistance to foot and mouth disease and mastitis and are strong and well adapted for the hot, humid tropical climate of Kerala. The Vechur cattle and Cheruvally cattle of Kerala, once popular and known for their dwarf size and high adaptability had become almost extinct by 1980's. This was due to cross breeding policies coupled with farmer's preference for hybrid cows yielding more milk. Conservation and genetic improvement of Vechur and Cheruvalli cattle was implemented by the Vechur Conservation Trust with the financial support of KSBB.

- Production and processing of semen of Vechur and Cheruvally bulls for conservation of the variety was undertaken.
- A germplasm centre is maintained at Neendoor and assistance in pure breeding is being provided.
- Birth of pure bred calves and multiplication of animals in farmer's herds were achieved.

## Conservation of High range Dwarf cattle

The High Range Dwarf cow is an endemic breed of Western Ghats. It is small in size and yields milk up to two litres. This breed has more lifespan also. The project for conservation of these cattle was entrusted to BMC of Elappully Grama Panchayat by KSBB. Arrangement of infrastructure for rearing the cattle has been completed under the project.



*Vechur Cow*



*Highrange dwarf cattle*



# MARINE & AQUATIC BIODIVERSITY



Launching of PAR

## People's Artificial Reef through community participation (PAR)

The concept of PAR has its roots in traditional knowledge documented in Marine Biodiversity Register, that, naturally available reef areas are swarming with fishes. Fishermen use traditional knowledge to identify reefs. They use a visual triangulation method to navigate the location. PAR project funded by KSBB deployed two artificial reefs along the inshore region off the Kannanthura and Valiathura coasts of Thiruvananthapuram, Kerala. The position for deposition of reefs and the raw materials to be used were decided by fisherman based on their time tested knowledge. The reefs were manually built by fisherman using natural materials (wooden boats). An artificial reef emulates a natural ecosystem and provides living space and shelter from predators and a suitable substratum for attachment of eggs serving as spawning ground and feeding ground. The main beneficiaries were two groups of selected fisherman from Valiathura. South Indian Fishermen Development society, an NGO actively involved in the welfare of fisher folks was assigned the implementation part. The boats were sunk along with coconut peduncles and sand bags for attracting spawning fishes. As the artificial

reefs were deposited in the near shore areas about 2 to 3.5 km from the shore at a depth of 20 to 30 fathoms, fishermen need to spend less fuel and resources for fishing. An increased biological productivity as a result of aggregation was indicated by a daily catch from the area where the artificial reefs were installed.

## Highlights of the project

- Against an initial investment of only Rs 30,000/- the revenue realized during one month alone was worth Rs.50,000/- A short payback period was achieved due to utilization of locally available materials and community participation.
- Diversity of fishes includes *Megalaspis cordyla*, *Rastralliger kanangurta*, *Atula mate*, *Terapon jarbua*, *Caranx sexfasciatus* and *Stolephorus indicus*.
- Monitoring is done by local people and the resources are exclusively managed by fishermen ensuring equitable sharing of benefits to the real custodians of bioresources.





*Artificial reef with fish eggs*



*Cabomba*

## Management of Aquatic Invasive Species in Pampa Riverine System with special emphasis to *Cabomba*

The once biodiversity rich Pampa basin is now degraded and remains in a semi natural condition. Degradation of wetland habitats and hydrological regimes of the river system cause real threat to the viability of the biodiversity. The project envisaged to study alarming growth of different invasive weeds like, *Cabomba*, *Lymnocharis*, *Cyperus*, *Utricularia*, *Vallisneria*, *Limnophila heterophylla* and *Hydrilla verticillata* along different regions of river Pampa. The project concluded suggesting physical and mechanical measures as control methods to check the growth of invasive species in Pampa river.

# ECO-RESTORATION PROGRAMMES



## Eco-Restoration and Water harvesting in abandoned quarries –Ambalappara Quarry

First phase of the pilot project ‘Eco-restoration and rainwater harvesting in abandoned quarries’ was completed at Ambalappara Quarry by the BMC of Thrikkakara Municipality. ‘This was a pilot scheme for developing abandoned quarries into rain water harvesting areas and eco-restoration of degraded land. Ambalappara quarry, in Kakanad is spread over an area of more than 12 hectares with a depth of about 200 feet. The water holding capacity of the quarry is about 15180 million litres. Developing abandoned quarries into rain water harvesting areas and eco-restoration of degraded land was taken up with community participation by BMC. This is a flagship replicable model for sustainable management of degraded ecosystem, providing enhanced land use options for future in urban areas. As per the decisions taken at BMC meetings, any revenue generated will be deposited in Local Biodiversity Fund which will be utilized for conservation of biodiversity of the area and maintaining the ecosystem services provided by biodiversity.

## Highlights of the project

- Around 2000 vetiver plantlets and 2000 saplings of 150 different species were planted at the site.
- A butterfly garden, medicinal plants garden, birth star plants garden was established.
- Medicinal plants for the garden was procured from Kerala Ayurveda Pharmacy and included climbers as *Asparagus racemosus*, *Tylophora indica*, herbs as *Curcuma aromatica*, *Desmodium gangeticum*, *Rauvolfia serpentina*, Shrubs as *Bauhinia variegata* and trees as *Terminalia arjuna*, *Sapindus tripholiates*
- Vetiver plants were planted along the quarry periphery which forms a permanent “bio-dam”
- Critically endangered species like *Vatreria indica*, endangered species as *Hopea parviflora*, and vulnerable species as *Myristica malabarica*, *Saraca asoka* are conserved in the area.
- Bio fencing along the Edapally canal was carried out by planting around 1200 riparian plants like *Acrosticum aureum*
- Birth star garden was instituted in association with the Social Forestry Division of Forest department and included plants like *Strychnos nuxvomica*, *Mesua ferrea*, *Ficus bengalensis*, *Vateria indica* etc.



- 500 saplings of various species were distributed to public.
- Intercultural operations of the existing coconut trees were done to increase productivity.
- Sixty coconut seedlings procured from Coconut development Board were planted along the riverside.
- A bird survey was conducted and the team spotted and identified 30 different species of birds.
- Birds and Butterfly survey and fish diversity study is being conducted to identify key local flagship species and umbrella species based on stakeholders perception.
- A documentary on Birds frequenting the place has been produced which is being screened to generate awareness about the need for conserving the biodiversity.

Construction of eco friendly bunds, provision of clean drinking water through rain water harvesting

in quarry, water purification through reverse osmosis, value added products from weeds, such as drying and shredding weeds to be used as a substitute for coir pith in horticulture and floriculture is planned as also cage culture of native fishes is being promoted in the next phase of project.

## Urban Biodiversity Conservation Programme

Conservation of urban natural ecosystem, ponds and other water bodies, and bringing eco friendly approaches for planned green development in urban areas through BMCs of Corporation/Municipalities and Resident's Associations were undertaken. Under this programme 14 ponds were renovated in Thiruvananthapuram. The renovation work involved cleaning of the pond, solid waste management, landscaping, planting medicinal Plants, biofencing by vetiver, release of fingerlings of native fishes etc.







## Organic Farming Project at Vattavada

Vattavada is popularly known as vegetable market of Kerala, because they are in the fore front of vegetable production in Kerala. Conservation and greater use of local varieties, organic farming, revival of agro ecosystems, integrated farming systems, conservation of high altitude fishes, ecological restoration of areas under monoculture plantations and prevention of forest fragmentation is necessary for the sustainable development of the area. As an initial step towards implementing an integrated development programme KSBB has initiated a scheme to promote organic cultivation of vegetables in the area.

- a) Livestock for green manure and for land ploughing was provided under the scheme.
- b) Infrastructure for rearing the cattle
- c) Promotion of organic farming in 10 acres

## Organic Village

In Pinarayi Panchayat of Kannur KSBB has initiated a programme to promote organic farming. Awareness programmes on the hazards of chemical farming and benefits of organic farming were conducted as part of the programme.



*KSBB Chairman and Member Secretary during their visit to Vattavada*

## Inventory of organic farmers of Kerala

This project aims to conduct survey of organic farmers of Kerala, study their socio economic status and explore the potential for expansion of area under organic farming.





## BIODIVERSITY RESEARCH CENTRE

Kerala State Biodiversity Board has proposed a Biodiversity Research centre (Approval by Kerala University under process), which will function as a centre for applied research for conservation of Kerala's biological diversity. The centre is being established for collection, collation, management, analysis and dissemination of data on Kerala's biological diversity. The research centre will provide scientific support to Kerala State Biodiversity Board in decision making on matters related to biodiversity, so as to enable the Board to advise the State Government on salient environmental and conservation issues. The centre will also enable the Board for translating the knowledge generated through PBR for sustainable development.

## EX SITU CONSERVATION

A seed germplasm conservation facility (i.e. a base collection and active collection) of diverse varieties, a vital facility for ex-situ biodiversity conservation programs has been initiated as part of the research centre. Landraces and traditional cultivars of agricultural crops hold a rich genetic diversity which harbours an important gene pool for crop improvement. Establishment of a seed bank for the long term and medium-term storage of seeds for conserving the wild relatives of priority crops, rare, endangered and threatened plants, landraces within species, wild crop relatives and farmers varieties have been recognized as a field of utmost importance by KSBB. Seed storage facility at sub zero temperatures up to  $-20^{\circ}\text{C}$  and infrastructure for entomology studies were developed. Traditional varieties of paddy collected from Idukki, Palakkad, Alappuzha, Kottayam, Kozhikode, Kannur and Kollam districts are being stored. The varieties include Rakthapokkali, Etchipporu, Peruvazha, Gundumani, Jeerakashala, Ponnaryan, Chitteni, Vellapokkali, Kannumkulamban, Paalthoni, Thavalakannan, Njavara, Virippu, Mundakan, Etchipporu, Chettivirippu, Vellaponmani, Pokkali, Kootumundakan, Thekkancheera etc. This facility is expected to complement the *in situ* conservation project of paddy land races at Wayanad.

# REGULATIONS AND NOTIFICATIONS

## Notification authorizing Biodiversity Management Committee to prevent Local environmental depletion - G.O (P) No: 04/13/ Envvt

Biodiversity Management Committee has been authorized to deal with environmental issues at Gram Panchayat level and to function as “Environmental watch group” and work for incorporating Primary environmental protection programmes in the schemes of the panchayat, present them in the Grama sabha and take actions to include them in the development schemes of the panchayat. At the grass root level primary environmental protection will be the responsibility of the BMC of respective panchayat. The respective BMC will be responsible to inform the concerned authorities for taking immediate action against all activities violating environmental rules, acts, notifications, as also environmental depletion, general public health problems and circumstances which leads to/ or may lead to threat for human life. Formulation of directions for environmental conservation of Panchayat and their implementation through the Panchayat committee are also entrusted to BMC.

## Amendment to the Kerala Biological Diversity Rules 2008

Kerala Biological Diversity Rules were officially notified in Kerala Gazette extraordinary No 1175 dated 10th June 2008. National Biodiversity Authority has pointed out certain necessary amendments in the said rules to be in accordance with the Biological Diversity Rules 2004. Certain amendments were proposed in the said rules and the same is under scrutiny by Government of Kerala

## Guidelines for Identification, notification and Management of Biodiversity Heritage Sites (BHS)

To strengthen the biodiversity conservation in traditionally managed areas and to stem the rapid loss of biodiversity in such areas, there is a need for identification and notification of these areas of significance as BHS. To effectively conserve and manage the BHS, the “Guidelines for identification, notification and management of the BHS” was developed and issued by KSBB. The creation of BHS will be a positive step in the development of conservation practices in society and prevention of overexploitation of biological resources.

## Guidelines for ecorestoration of urban ponds

One of the major activities of the Board is Urban Biodiversity Conservation Programme targeted at promoting the conservation of urban natural ecosystem, ponds and other water bodies, and bringing eco friendly approaches for planned green development in urban and rural areas through Resident's Associations. The Guidelines developed by KSBB has the objective to assist in setting up a mechanism for ecorestoration of urban ponds. Guidelines also include specific actions that LSG/ resident associations might draw upon in designing locally applicable practices to prevent their further degradation and ensure their wise use for the benefit of local communities for recreational purposes.



# POLICY ISSUES AND ADVICE TO GOVERNMENT



*Expert Committee Convener Dr. Oommen V. Oommen submitting the report to Chief Minister Oommen Chandy*

KSBB enabled discussions on environmental issues with policy makers, implementing agencies, BMC, LSG, NGO's etc, by creating forums for policy dialogues with different stakeholders, by providing strategic environmental policy perspectives aimed towards improved natural resource governance.

## Expert Committee to evaluate HLWG Report in Kerala Perspective

The MoEF had constituted the High Level Working Group (HLWG) under the Chairmanship of Dr. K. Kasthurirangan vide Office Order dated 17.08.2012 in order to study and make recommendations on how to protect, preserve and nurture the rich biodiversity and environmental integrity of the Western Ghats. The ministry accepted the report in principle and a draft notification declaring the identified regions of Western Ghats as Ecologically sensitive area was put up for input of stakeholders. A three member expert committee was constituted by Kerala Government as per order no 162/13/Env dt 29/10/2013. Dr Oommen V Oommen, Chairman Kerala State Biodiversity Board as the convener of the expert committee and Prof V.N.Rajasekharan Pillai, Executive Vice President, Kerala State Council for Science, Technology & Environment and Dr P C Syriac (IAS, Retd.) are Members. The committee was asked to submit its report within one month.

The mandate of the committee was to study the draft Office Memorandum of MoEF in detail, seek the opinions of people from all walks of life and submit their opinions and suggestions to the State Government. The committee conducted sittings at various places and about 30,000 people expressed their views directly and in writing before the Committee. The committee also had discussions with Chief Minister, Ministers, MP's, MLA's, other people's representatives, NGOs and farmer's organisations.

The officials of Kerala State Biodiversity Board translated parts of the report relevant to Kerala and posted it in the website; [keralabiodiversity.org](http://keralabiodiversity.org). About one lakh persons visited the site. Other than this, 10,000 copies of the Malayalam book prepared on Kasthuri Rangan Committee Report by the Board was distributed free of cost.

A 24 hour helpline with 4 telephone numbers also functioned through which about 4,000 persons contacted the Board for clarifications on the report. This helpline was operated by the employees of KSBB.

KSBB gave wide publicity regarding the report through print media, so as to eliminate the apprehensions of people in this regard. Publicity regarding sittings of the Committee, convening of the sittings, compilation of opinions raised during the sittings and assistance for preparation of the final report were done by the Kerala State Biodiversity Board. Huge public participation was observed in all the sittings and people from all sorts of life expressed their grievances and suggestions.

## Physical verification maps of 123 villages

The committee proposed physical verification to assess the exact boundaries of ESA's. Accordingly, Government appointed a committee to each of the 123 villages comprising of Panchayat president, Revenue officer, Agricultural officer and Forest officer. Village level committee submitted its physical verification data which was validated with Cadastral maps. An expert team including experts from KSBB, Kerala State Remote sensing and Environment centre and Forest department further refined the maps. This map was submitted to MoEF. This detailed village wise map of 123 villages, clearly depicts the physical boundaries of ESA differentiating forests and other Ecologically Sensitive areas like water bodies and hilly areas from human inhabited areas, Agricultural lands and plantations

## Incorporating Biodiversity Education in School Curriculum

The board has mooted an across-the-curriculum strategy for biodiversity education, with the thrust on orienting textbooks on different subjects like science, geography and languages to deal with the scientific and aesthetic aspects of biodiversity. The proposal stresses the need for a bottom-up approach to biodiversity education, with the panchayat as a classroom and Biodiversity Register (PBR) as a reference book. The expert committee for revision of school curriculum on the basis of this recommended the introduction of biodiversity education from primary to higher secondary classes. The State School Curriculum

Steering Committee, approved the decision taken by the State Council for Educational Research and Training (SCERT) for a comprehensive revision of curriculum and textbooks from primary to the Higher Secondary levels and the process is underway.

## Environmental Issues

1. Setting up of sewage treatment plant at Karimpanapala and associated environmental problems at Kottully wetland and Cannolly canal, Kozhikode district: A preliminary enquiry was made by the expert committee and urgent intervention by the line department was recommended. It was recommended that all destructive activities should be stopped and wetlands saved from further degradation and Wetland Conservation and Management Rules strictly adhered to.
2. Pesticide pollution of river systems in and around Koilandy, Kozhikode district. An expert committee was constituted and enquiry report has been submitted. A meeting was conducted by BMC and public were made aware of potential health hazards due to contamination of water bodies with pesticides and other chemicals. The meeting resolved to implement schemes to check chemical pollution.
3. Construction of Bio wall instead of sea wall: Expert committee noted that due to high density of population, anthropological activity is high near the coasts. Construction activities affect the coastal ecosystem and growth of mangroves becomes stunted. It was recommended that in order to prevent upland erosion and storm surge flooding, bio walls may be promoted as an ecofriendly measure.





4. Encroachments into Govt land at Kodukuthimala at Idukki district : The encroachments have adverse effect on biodiversity of the region. KSBB District coordinator along with TSG member's visited the place and interacted with LSG. The authorities took a decision to construct a wall for preventing encroachments into Govt.land.
5. Complaints about LG gas godowns, Idukki. The issue was forwarded to Pollution control board. In the study report it is stated that the institution is functioning as per the laws and rules. No irregularities were observed.
6. Pollution due to prawn peeling sheds in Alapuzha district: According to study no solid waste is dumped into the Puthenthode kayal and the waste water is discharged through lengthy drainage pipes. About half lakh labourers depend upon the peeling units for their livelihood. So closing down of these peeling units is not feasible. Immediate rejuvenation of Kayal was recommended. The report was submitted to Govt.
7. Government authorized KSBB to evaluate and furnish remarks regarding the project report prepared by AHADS, Palakkad about Comprehensive tribal development at Attapady with Japanese assistance. KSBB submitted the report to Govt.
8. Construction of flat in Chowara, Thiruvananthapuram by Artech Company. The flat construction is near the coast. In order to assess for violation of CRZ rules, a report was called for from BMC.
9. Quarries in Kadaplamattom, Kottayam. The President, Kadaplamattom grama panchayat had requested for a study report on environmental problems due to functioning of quarries in the panchayat. The request was forwarded to the Director of Environment and climate change for necessary action.
10. Irregular construction of ponds in Chithara, Kollam dist: KSBB authorized Dist coordinator and TSG members to prepare an investigation report. It was observed that these were only rain water reservoirs.
11. Govt called for report about the destruction of medicinal plants on the sides of public roads by the MNRG scheme and use of explosives for fishing: It was reported that BMC in every panchayat will be empowered to identify such issues and take action.



12. Complaint of secretary Residents association, Kattappna, Idukki district about the destroying of natural ponds by authorities for construction of hostel: Chairman KSBB visited the site and found that the complaint has no authenticity.
13. Construction of river walls and canal walls in Thodupuzha by minor irrigation department: Requested the Govt for reviewing the project.
14. Unauthorized quarrying in Sreekantapuram panchayat (Kannur): The Panchayat submitted a petition regarding unauthorized quarrying without explosive licence and flouting Panchayat order. KSBB forwarded the list of such quarries to Environment dept for necessary action.
15. Unauthorized quarrying in Kayyoor, Cheemeni, West Eleri, Beloor, Balaal, Kinanoor, Karinthalam, Bedadukka panchayat in Kasargode district: There are more than 200 unauthorized quarries in Kasargode district as per Kasargode dist environmental council. This was forwarded to Environment department for necessary action.
16. Unscientific cultivation of Pineapple in Kottayam and Ernakulam: The cultivation of Pine apple is being undertaken using prohibited chemical pesticides and overdose of fertilizers. The report was sent to Agriculture department through Pollution control board for necessary action.
17. Conversion of paddy fields and pollution of Ashatamudi kayal by dumping waste: There are more than 200 quarries in Kareepra, Elamadu, Velinalloor, Pathanapuram, Thrikkadavoor, Thrikkaruva, Sasthamkotta, Kunnathoor, Pavithreswaram panchayats. This was reported to Environment department for necessary action.

# NATURE EDUCATION

## A. Environment Related Observances:

### International day for Biological diversity – May 22<sup>nd</sup> 2013

Kerala State Biodiversity Board organized the International Day for Biological diversity celebration at Kanakakunnu Palace, Thiruvananthapuram on 22<sup>nd</sup> May 2013. Hon'ble Chief Minister Shri Oommen Chandy inaugurated the function and distributed the State Biodiversity awards to individuals, environmental organizations and educational institutions for their exemplary activities in biodiversity conservation. Chief Minister also released "Green Life", the newsletter of KSBB and books on organic farming and Butterflies of Kerala published by KSBB. Dr.Oommen.V.Oommen, Chairman, Kerala State Biodiversity Board delivered the keynote address on this year's International Biodiversity Day Theme-'Water and Biodiversity". KSBB, Member Secretary, Dr.K.P.Laladhas welcomed the gathering. Dr.B.S.Corrie IFS, PCCF, Social Forestry, Rajesh Agarwal, Divisional Manager, Indian Railways and Dr.K.G.SreeKumar, CEO, Medicinal Plant Board gave felicitations and Dr.C.Anil Kumar expressed vote of thanks. The day was celebrated in all districts of Kerala with various competitions as pencil drawing, essay writing, quiz and seminars.

## Environment Day Celebrations 2013

KSBB in association with Forest department and Indian railways organized an exhibition of photos on flora and fauna at Thiruvananthapuram central railway station. The exhibition was inaugurated by Mr Rajesh Agarwal, Divisional Manager, Railways and Dr Oommen V Oommen. Dr B S Corrie , PCCF, Social Forestry and Chairman and Member secretary of KSBB planted saplings at railway station premises. More than 100 photos focused on the ecological diversity of Kerala, vital environmental issues and the unique life forms of Kerala were exhibited. The exhibition was widely viewed by public.

## B. Sixth Children's Biodiversity Congress

The 6th Children's Biodiversity Congress was held at Kanakakunnu Palace on 15th and 16th November 2013. 291 students and 137 teachers from 75 schools of various districts of Kerala participated in the congress.

The Hon'ble Chief Minister of Kerala, Shri.Oommen Chandy inaugurated the Congress and the meeting was presided by MLA, Shri K.Muraleedharan, Welcome address was given by Shri.P.K.Mohanthy, the Additional Chief Secretary of Environment Department, Govt. of Kerala. Dr. Oommen V Oommen, Chairman of Biodiversity Board gave the keynote address. Felicitations were given by Shri.C.P.John, Member, State Planning Board and Shri.V.Gopinathan, Principal Chief Conservator of Forest.



*Chief Minsiter Oommen Chandy Inaugurating Biodiversity Day Celebration*





*Chief Minister Oommen Chandy Inaugurating Children's Biodiversity congress*

The Chief Minister in his inaugural address said that environment conservation is not something that threatens people's livelihood; the two in fact go hand in hand, and School students are to be encouraged to maintain local ecosystems.

## Activities

- Project, paintings, poster, cartoon and elocution competitions were held on topics related to biodiversity conservation.
- Project presentations on diverse topics as wetlands, agricultural biodiversity and biodiversity our wealth, heritage and responsibility was the highlight of the congress. Out of the 71 projects received, 23 projects were selected for presentation at the three levels. 9 projects were presented in the UP section based on wetland biodiversity, 8 projects were presented at high school section on the topic agricultural biodiversity and 6 projects were presented at higher secondary on the topic "Biodiversity our wealth, heritage and responsibility".
- The programmes included poster and cartoon making for high school students on the topic nature and environment conservation. Elocution competition for UP, High School and Higher Secondary on the topic Environment and me, Man is of earth not earth of man and Environment friendly life and development elicited good response.
- Quiz competitions were held on the topic of environment and biodiversity.
- Documentaries on Poisonous snakes of Kerala and Attapadi Black Goat were screened which attracted much attention.
- The students and teachers gave their opinions regarding the congress. The valedictory function was presided over by Dr. K.G.Sreekumar, Chief Executive Officer, Medicinal Plants Board. The prize distribution was done by the dignitaries. St. Anthony's G.H.S, Kozhikode bagged the overall trophy.

## C. Biodiversity Club and Shanthisthal

Kerala State Biodiversity Board established 'Biodiversity Clubs' in 43 educational institutions to implement programs to create interest in conservation of biodiversity in students. KSBB implemented "Shanthisthal" programme aimed at the conservation of trees at college campus. Shanthisthal, is envisaged as a man made forest ecosystem, where at least 10 cents of land would be made available for making a grove with RET( Rare, Endangered and Threatened) species. This protected area "Shanthisthal" maintained by the Biodiversity club is expected to become a biodiversity rich area of rare and endangered plant and animal species in due course of time. The progress of the work was monitored by research fellows and district co-ordinators of each district with the help of an evaluation format prepared by KSBB . During 2013-2014 assistance for establishing Shanthisthal at the rate of Rs 1000/ per cent was given to ten institutions covering a total area of 3.1 acres.

## D. Exhibitions

### Biodiversity Expo in association with Indian Railways

Rajesh Agarwal, Divisional Manager, Indian Railways inaugurated the Biodiversity awareness Exhibition organized by Kerala State Biodiversity Board in

association with Indian Railways and Social Forestry Wing of Forest Department. Dr.Oommen.V.Oommen, Chairman, Kerala State Biodiversity Board, Member Secretary, Dr.K.P.Laladhas and Dr. P Pugazhenthil IFS, DCF (Social Forestry) attended the function. The Exhibition conducted at Platform 1 of Thiruvananthapuram Central Railway Station from 22-5-2013 (International Biodiversity Day) to 5-6-2013(World Environment Day) was viewed by thousands of people.

### Biodiversity Rural Expo at Nedumangadu

A Biodiversity Rural Expo was conducted by KSBB at Municipal Hall, Nedumangadu as part of "Thirucharivu" an awareness programme. The exhibition was viewed by numerous people from Nedumangadu and surrounding areas including students from various schools.

### Biodiversity Expo in Educational Institutions

Biodiversity Expos were conducted at St.John's College,Kollam on 11th and 12th of February 2014 and from 27th to 29th of January 2014 at St.Stephen's College, Pathanapuram. Apart from display of panels and distribution of brochures various documentaries produced by KSBB were shown during these exhibitions.



*Biodiversity Expo at Thiruvananthapuram Railway Platform*





*Minister for Education P.K. Abdu Rabb Inaugurating Biodiversity awareness programme*

## Awareness and familiarisation on biodiversity conservation and sustainable use based on PBR

State level launching and inauguration of the project was held at Govt. Higher Secondary School, Peruvallur, Malappuram district on 26th January 2014 by Minister for Education Sri. P.K. Abdu Rabb. The function was presided over by MLA Sri. K.N.A. Khader and felicitated by Minister for LSG, Dr MK Muneer.

One day orientation programme was organised in each of the 25 Grama Panchayats under the leadership of concerned BMCs. All BMC members, Ward members of the GP, Student volunteer leaders (20 Nos), Teacher co-ordinator(s), representative of Parent Teacher Association of the School, NGO representatives, Head Master/ Principal of the school, Agricultural Officer of the GP, District Co-ordinator and Project Fellows (PBR) participated in this meeting.

District level orientation workshops were conducted for teacher co-ordinators in 5 districts to generate

awareness of activities to be undertaken for the successful implementation of the project at schools.

In the twenty seven selected schools one day training was arranged to train the student volunteers in data collection process. Simplified formats have been prepared for the purpose and distributed to them. They were taught how to collect biodiversity information on agro biodiversity, homestead biodiversity and wild biodiversity from their surrounding area. The importance of collection of Traditional Knowledge from older generations is said to be imperative. The list of species already included in the PBR was prepared and distributed to the volunteers to avoid duplication of information being collected.



## Traditional meet of eco friendly farmers

A meet of eco-friendly farmers was organized at Thiruvananthapuram on 20th February 2014. Farmers from different parts of the state attended the programme and shared their views and experiences. Dr.K.P.Laladhas, Member Secretary, KSBB inaugurated the function.. Dr.R.Gopimony, Former Professor and Head, Kerala Agricultural University was the moderator. Dr.S.Leena Kumari, Dr.N.Sudhodanan and Dr.P.Kamalasanan Pillai delivered presentations on traditional varieties and breeds and interacted with the farmers. This was followed by a session in which farmers shared their views and experiences in eco-friendly farming. Prominent farmers were honoured with mementos. About 300 farmers attended the event. This was the second time that KSBB conducted a traditional meet of eco friendly farmers, which is one of its kind event in the State.



*Traditional Meet*



*Performance of Tribal artists during Traditional meet*



# WORKSHOP/ SEMINARS

## Expert level meeting

### Expert level meeting on monsoon fishery (Ootha) and invasive and threatened fresh water fishes of Kerala

An expert level meeting on monsoon fishery (ootha), invasive and threatened fresh water fishes of Kerala was conducted on 31<sup>st</sup> May 2013 at the Conference Hall, Govt Guest House, Thiruvananthapuram. Dr. Oommen V Oommen gave a brief introduction on Ootha and the recommendations of the research report submitted to the Govt. of Kerala on monsoon fishery were presented. Dr. K P Laladhas stressed the need for updation of the Notification of Threatened fresh water fishes. Suggestions of the research report on Monsoon fishery and a compiled database of information from various sources on Invasive and Threatened fresh water fishes of Kerala prepared by KSBB was presented for review.

### Expert level meeting on Invasive Alien and Threatened species (Flora and Fauna) of Kerala

An expert level meeting on Invasive Alien and Threatened species (Flora and Fauna) of Kerala was conducted on 13<sup>th</sup> June 2013 at the Conference Hall, Govt Guest House, Thiruvananthapuram. Dr. Oommen V Oommen gave an overview of the Invasive alien species ( flora and fauna) and Threatened species ( flora and fauna ) of Kerala. Dr. K P Laladhas stressed the need for updation of Notification of Threatened species of Plants and Animals under section 38 of The Biological Diversity Act 2002. The experts included scientists from various institutions of Kerala. A compiled database on Invasive species, Rare, Endangered and Threatened (RET) flora and fauna of Kerala prepared by KSBB was presented for review.

## Seminars

### Workshop on “Crowd sourcing of *in situ* Data for Remote Sensing and Modeling of Environment”



Kerala state biodiversity board organized a workshop on “Crowd Sourcing of *in situ* Data for Remote sensing and Modeling of Environment” on 7<sup>th</sup> August 2013 at Hotel SP Grand Days, Thiruvananthapuram sponsored by Department of Environment and Climate Change (DoECC) in collaboration with Department of Computational Biology and Bioinformatics (DCBB), University of Kerala and University of Alabama, Huntsville, United States. Remote sensing and modeling analysis for ecological research, monitoring and assessment often require *in situ* ground truth data. Traditional methods for collection of such ground-based information are through field surveys that can be expensive depending upon the accessibility and amount of information needed. However, the increasing availability of mobile devices with global positioning and photographic capabilities provides unprecedented opportunities for the utilization of crowd sourcing to develop extensive, dynamic datasets for ecological research and applications. The workshop explored viability, opportunities, technological and scientific requirements for Crowd Sourcing for ecological research in Western Ghats Region. The one day workshop included presentations followed by discussion about the potential framework for crowd sourcing of relevant information for ecological research and application in Western Ghats. The workshop discussed ways to the use of smart

phones to acquire data for studying how the landscape is changing due to human activities. The workshop included brain storming lectures by Dr. Oommen V. Oommen, Chairman, KSBB, Renowned climate change expert, Dr. Udayasankar S. Nair, Dept. of Atmospheric Science, University of Alabama, USA; Dr. Suresh Raju, Vikram Sarabhai Space Centre and Dr. T.K. Sabu, St. Joseph College, Calicut.

### Lecture on “Biodiversity conservation gap analysis and prioritization”

A lecture was organized by KSBB and Kerala Academy of Sciences at Department of Botany, University College, Thiruvananthapuram on 6<sup>th</sup> September 2013. Dr Viswambaran Sarasan, Head, Conservation Biotechnology, Royal Botanic Gardens, KEW, England gave a talk on conservation strategies being adopted at KEW gardens, England. The talk was attended by staff of KSBB, staff and students of University College.

### National Seminar on Biodiversity and Food security

Kerala State Biodiversity Board organised National Seminar on Biodiversity and Food security in collaboration with Centre for Social Excellence and Development on 21.01.2014 at Mascot Hotel, Trivandrum. Prof K.V.Thomas was awarded Excellence award 2013. Former minister Mr Jairam Ramesh participated in the programme.

### Kerala Environment Congress 2013

Kerala environment congress was organised at Thiruvananthapuram by KSBB and Centre for Environment and Development with focal theme- Culture and Heritage for Environment management. Dr Oommen V Oommen gave a presentation on Culture, Heritage and Biodiversity Register. The role of PBR which serves to document the cultural and natural landscapes and heritage of locality was stressed upon. The activities of KSBB in trying to document the cultural and natural heritage of Kerala for the next generation was highlighted.

**Environmental summit** was organized at Kodungallur on May 4<sup>th</sup> and 5<sup>th</sup> 2013 as part of the educational programme of Kodunallur constituency. Renowned Malayalam poet and environmentalist, Sugatha Kumari inaugurated the summit. T N Prathapan MLA presided over the function. Bhoomiyude Pachakkudakal brochure published by KSBB was released during the summit





## Financial support provided for the conduct of Workshops/ Seminars/Awareness programmes:

KSBB supported various organisations for conducting biodiversity related programmes.

Sl.No	Institutions	Programme	Amount
1	Director, WWF	World Migratory Bird Day, 2013 on 11-12 May 2013 at Kumarakam, Kottayam	Rs.20,000
2	Director, Santhigram, Thiruvananthapuram	'Jaivakarshaka Sangamam' on 21December 2013 at Govt. Vocational Higher Secondary School, Poovar	Rs.15,000
3	Proprietor, Creative Media Advertisers & Promoters	Creative Media Programme on 07.12.2013 at Band Stand Museum, Trivandrum	Rs.10,000
4	Centre for Environment and Development	Kerala Environment Congress 2013 at Co-Bank Towers Auditorium, Palayam from 9-11 October 2013	Rs.25,000
5	Thiruvananthapuram - 13	Biodiversity related advertisement given in the Souhridam Varshikapathippu 2013	Rs.3,500
6	The Secretary	Workshop on Thannerthada Samrakshanam – Velluvilikalum Pariharangalum held at Regional Science Centre & Planetarium, Kozhikode	Rs.12,000
7	Collegiate Education Dept. Elders' Forum, Peroorkada, Thiruvananthapuram-5	5th Balasasthra Congress from 31st December 2013 to 5th January 2014 at Kanakakunnu	Rs.10,000
8	The Secretary	Biodiversity Day Celebration 2013 on 22nd, 23rd May 2013	Rs.20,000
9	SAM Scientists' Association of Malabar, Kozhikode – 673 011	7 days workshop on Zero Budget Natural Farming technology in Pathanamtitta district for farmers from 6 districts of south Kerala from 1-7 Feb. 14 at Marthoma Youth Center, Adoor	Rs.30,000
10	The President	National level students meet 'think Green & Go Green' on 14-15 March 2014	Rs.20,000
11	Agrifriends Krishi Sam-skarika Vedi, Pattoor P.O, Thiruvananthapuram	National workshop on Marine Zooplankton Identification on 27-28 March 2014	Rs.25,000
12	The Chairman	Financial assistance to S.N.College, Cherthala for the conduct of National 'Role of plant systematic in Biodiversity and its conservation' on 4,5 March 2014	Rs.10,000
13	Rajiv Gandhi Centre	Financial assistance to ATREE for the conduct of Vembanad Fish Count 2013 on 23rd, 24th May 2013 at Alappuzha	Rs.10,000
14	University P.O, Trivandrum	Kapila Fest 2014 held on 23-26 February 2014	Rs.20,000
		<b>TOTAL</b>	<b>Rs.2,30,500</b>

# AWARDS/ RECOGNITIONS

## Recognitions Received

1. Chairman, KSBB, **Dr. Oommen V. Oommen** was awarded H.G. Philipose Mar Eusebins memorial Best Scientist Award 2014 for contributions towards life science and research by Catholicate College, Pathanamthitta, Kerala
2. The KSBB documentary “Mangroves – Forests of the Tide” directed by **Suresh Elamon** received special Jury mention in category Biodiversity of CMS Vatavaran Awards, 2014
3. KSBB documentary “The Black Beauties of Attappadi” directed by **G. S. Unnikrishnan** was screened in the Rashtriya Vigyan Chalachitra Mela organised by Vigyan Prasara at Bangalore on January 29th, 2014.
4. Biodiversity Management Committee, Thrikkakara Municipality was selected in the first round of assessment for the Second GoI - UNDP India Biodiversity Awards, 2014
5. **Dr Laladhas** was nominated as Fellow of Kerala Academy of Sciences.
6. **G.S.Unnikrishnan** received Indian Medical Association Media award for scripting the health drama serial broadcast through AIR.

## Biodiversity Awards for the year 2012-13

Biodiversity awards were constituted to recognize the best individual, journalist, NGO and, organization, that have made valuable contribution to the protection of biodiversity, ecological systems and sustainable management of natural resources.

## Best Biodiversity Management Committee

Best BMC award was instituted by KSBB to recognize outstanding models of biodiversity governance by local self government. Development works best by example and it is contagious, and honoring the achievements of BMC sends a positive signal. Activities of BMC were assessed based on the environmental impact and other factors by an expert committee. The initial recipients of Best BMC award BMCs of Edavaka Grama Panchayat of Wayanad district and Eraviperoor Grama Panchayat of Pathanamthitta district represent good practices of biodiversity conservation from across the state.



*Award Distribution by Thiruvanchoor Radhakrishnan, Minister for Forest & wild Life*



## 1. BMC of Eraviperoor Grama panchayat

The BMC of the panchayat has effectively built up cross sectoral partnerships among line departments and ensured that the concerns of environmental conservation are duly met within the plans/ schemes of different sectors. With the support of Farm information centre, training in modern techniques of organic farming was given for vegetable and banana cultivation in homesteads and terrace farming in grow bags. Work is underway to provide training to selected farmers in poly house technology and develop viable market for the produce. The programmes were included in rural employment guarantee scheme and additional 20 acres were brought under banana cultivation. The panchayat has been selected as model Haritha village. With support of Kudumbasree upland rice cultivation has been taken up in 18 acres. Utilizing the labour force available in Panchayat 60 acres of abandoned paddy fields have been reclaimed and 5 acres has been brought under Njavara cultivation.

To increase fish stock with the support of Fisheries department, 50,000 fish fingerlings were released into canals and streams. With community participation in public areas, fodder crops were planted. Along roadside and highways with cooperation of plantation corporation, 200 avenue and shade providing trees were planted. Eco clubs have been formulated in all the schools in the panchayat and training has been imparted for organic vegetable farming and paddy cultivation. More than 8000 saplings of different tree species were distributed to children and through rural employment guarantee scheme medicinal plants garden were established in government schools. Along with social forestry department, saplings of 500 each of Nelli, Veppu etc were distributed.

Purva Pampa and tributary Varattar is dying due to lack of sufficient water flow and is facing environmental degradation. Varattar-Purva Pampa rejuvenation programme is being promoted for preventing encroachments and generating awareness through gramasabhas, seminars and by enlisting community support. Varattar punarjani a facebook account was opened with the express purpose of providing a platform for discussions.

As Environmental watch groups the BMC is taking action against cutting of trees in public places, environmental pollution, cleaning of pond and canals for irrigation and drinking water purposes. The BMC has an ambitious plan to install one lakh rainwater

harvesting structures. By the initiative of Environmental grama sabha, 35,000 rain water harvesting pits of length 1.5 mt, width 0.5 mt and depth 1 mt has been installed. Total waste management is being aimed at by installing Haritha plastic unit collection points at schools and anganwadis where plastics are collected at rate of Rs 10/kg and given for tarring works. The panchayat has effectively utilized funds allocated by Suchitwa mission by setting up of Biogas plants (183 biogas plants) and 58 composting pits. The award was granted for their efforts in mainstreaming biodiversity issues at local level planning by local bodies and prioritizing the issues within the panchayat which requires greater focus.

## 2. BMC of Edavaka Grama Panchayat

has the proud distinction of being the first to complete People's Biodiversity Register in Kerala which was prepared with the help of students, environmentalists, farmers and peoples from different sectors of the society. Various biodiversity conservation activities were planned and put into action by Edavaka BMC. 1.5 lakh trees were planted and one lakh fish fingerlings were released in Kabani river in association with Fisheries department. They have addressed several local issues and brought it into the attention of concerned officials such as reclamation of paddy fields, sand mining, conversion of sacred groves etc. They set the pace for afforestation in the panchayat by supplying seedlings of medicinal plants, Teak, Mahogany etc and promoted organic farming in schools. To conserve indigenous tuber crop varieties of Wayanad, the project 'Conservation of tuber crop diversity in Wayanad and its popularization among the villagers of the district' is being implemented at Edavaka Gramapanchayat through the Biodiversity Management Committee. The project aims to conserve genetic diversity of neglected and underutilized root and tuber crops through germplasm conservation. They have also conducted several awareness programmes in schools, colleges, and visits to sacred groves.

## Best Environmental Conservators

A.V.Balakrishnan popularly called Kalloor Balan is a native of Palakkad district. Since school days, he had an ambition to plant one lakh trees all over Palakkad district as a natural defence against global warming and climate change. Travelling all

over Kerala in a bike with seedlings he has planted hundreds of tree saplings near highways, schools and other institutions. Kerala State Biodiversity Board honoured him with the Biodiversity Award for 2013 for his noble environment protection service.

**Late Veerammal Vaidhyar** of Attappadi, Sholayur, was a well known tribal healer and traditional knowledge holder. She used to collect rare medicinal plants from the forest and prepare medicines, which was used for the treatment of cancer, infertility, snake bite etc. Considering her prolonged activities in rural health care Veerammal Vaidyar was given the biodiversity award posthumously.

**A.V.Purushothama Kamath** residing at the heart of Kochi city was given award for conservation of medicinal plants. His homestead spread over one acre, is home to a rich collection of thousands of rare medicinal plants.

**C. Narendranath**, Perumkulam in Kottarakkara is an active crusader of organic farming. Narendranath has prepared number of organic inputs on his own and popularised them among farmers. The produce, especially vegetables is marketed under organic banner through his mobile sales units.

**M.Brahmadathan**, Njakattol, Palakkad a National breed saviour awardee (2010) was selected for the Biodiversity Award considering his commendable efforts for the last two decades in conservation of local animal breeds. His farm is home to about 17 Vechoor cows, the indigenous breed of Kerala in addition to other traditional breeds like Kapila.

## Best Educational Institution

**Government HSS, Kottila, Kannur** spread over 2.5 acres, has many varieties of plants including medicinal plants growing in the school compound. Conservation of local mango varieties, construction of bio-fence, paddy cultivation, afforestation, conservation of indigenous vegetable are some of the biodiversity conservation activities taken up by the school.



## Best Journalist In Print Media

**Sasidharan Mankathil** Chief Sub Editor, Mathrubhoomi has published many articles on topics related to environment and biodiversity conservation. His expertise in dealing with environmental issues in simple language, which is easily understood by common man, is commendable and he has contributed a lot in generating environmental awareness among public.

**G.Prabhakaran** working as the principal correspondent of Hindu in Palakkad has written articles on various key environmental issues like biodiversity of Bharathapuzha, protection of Silent Valley, genetic erosion of Attappadi goats, Human-wild conflict, etc.

## Best Journalist in Electronic Media

**Shri. E. V. Unnikrishnan** Chief Reporter, Mathrubhoomi News Channel, Kozhikode was selected for the Best Biodiversity Journalist in Electronic Media for his news clipping 'Karakanathe Kadalamakal'. The clipping covers the migration of turtles for laying eggs on the sea shore and conservation efforts.

## Best NGO

**Santhigri Ashram** is a legend in various activities like environment conservation, organic farming, conservation of local breeds of cattle and rare medicinal plants etc. 'Ente Oushadha Gramam' is a popular scheme implemented by them in which farmers are involved in medicinal plant cultivation. 107 cattle including indigenous breeds are grown here.

## Best Government Institution

**Periyar Tiger Conservation Foundation & Malabar Botanical Garden**

Periyar Tiger Conservation Foundation and Malabar Botanical Garden are the two institutions selected as the best Government Institutions involved in Biodiversity Conservation.



# PUBLICATIONS

## Handbook for identification of species in the field

During 2013-14 two books were published by KSBB, Mangrove and Mangrove Associates of Kerala written by P. Sujanapal and N.Sasidharan and "Marine Gastropods" written by Benjamin Franklin and K.P.Laladhas.

KSBB published 2 illustrated handbooks for assisting field level researchers in the accurate identification of the flora and fauna of Kerala.

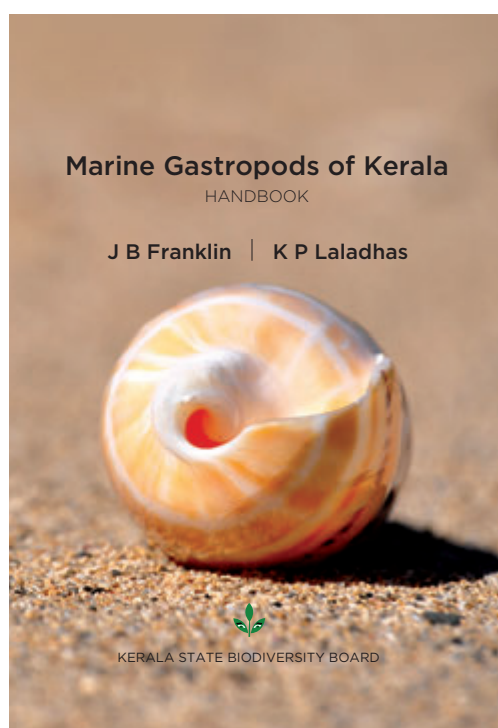
1. Marine Gastropods of Kerala
2. Mangroves and Mangroves associates of Kerala

In Mangroves and Mangrove associates 18 True mangroves and 54 mangrove associates are described. Description, flowering and fruiting, occurrence and uses of each are detailed. The book on Marine Gastropods is a pictorial presentation of the diversity of Gastropods of Kerala with their description, photographs and geographical occurrence. The objective is to help identification of species of Kerala for facilitating PBR preparation.



## KSBB Newsletter – Green life

Three issues of "Green Life" highlighting the activities of the Board and developments in Biodiversity conversation has been published.



## Information Brochures in Malayalam, Reports

depicting the rich biodiversity of Kerala were prepared. KSBB published a set of 8 Malayalam brochures on various subjects related to biodiversity. These brochures were written in a simple language with attractive lay out so that common men and students could read and understand them. This will further result in creating interest towards biodiversity conservation. Around 3000 copies of brochures were distributed free of cost during the Exhibitions, Awareness programmes and Children's Biodiversity Congress held during 2013-2014 and they were much appreciated by the public. The brochures prepared included

1. Sacred Groves
2. Forests of Kerala
3. Mangroves - Biodiversity treasures
4. Wetlands of Virtue
5. When Seas get Polluted
6. Inheritors of Seeds
7. When Frogs Perish
8. Dragonflies – Wonders of Nature

1. Western Ghats Environment Expert Panel (WGEEP) Report – An Overview – Dr. Oommen. V. Oommen, Dr. K.P. Laladhas
2. Western Ghats Environment Expert Panel (WGEEP) Report - Perspectives of Kerala – KSBB
3. Western Ghats High Level Working Group (HLWG) Report – An Overview, KSBB

## Biodiversity Manual

KSBB has published biodiversity manual 2014 with support of NBA emphasizing the significance of India as one of the 17 mega diverse countries of the world. The major mandate of National Biodiversity Authority and responsibilities of State Biodiversity Boards, and BMC are presented in a manner comprehensible to common man. The hot spots of India, ecosystems and habitats of India with particular reference to Kerala, diverse flora and fauna unique to Kerala, the ecosystem services rendered by forest, wetlands, oceans and coral reefs, diversity in cultural landscapes such as sacred groves, agrodiversity and traditional breeds are depicted in the manual. The manual will enhance awareness regarding the need for preserving the natural resources of the state and will also serve as a handbook for nature conservation.





## RESEARCH PUBLICATIONS

1. Culture, Heritage and Biodiversity Register (2013), **Laladhas K.P., Preetha N. and Oommen V. Oommen**, Kerala Environment Congress 2013, Thiruvananthapuram, Proceedings, PP 15-22.
2. Water for Life, Life for Water (2013), **Preetha N. and Laladhas K.P.**, Scientia September 2013, Pg 8.
3. In situ conservation of Crop Wild Relatives and Landraces (2013), **Oommen V. Oommen**, ICAR – Funded Short Course on Recent Advances in Conservation of Genetic Resources and Plantation Crops, Kasaragod, October 2013, PP 1-2.
4. Multifariousness in the structure and fabrication of 'KOODU' – A Traditional Fish Trap of Kerala (2013)– **Shaji C.P, K. P. Laladhas** – Journal of Aquatic Biology and Fisheries Vol 1, N0 1 and 2 .
5. Region-specific biodiversity education – the role of People's Biodiversity Register (2013), **Laladhas K.P., Preetha N., Baijulal B. and Oommen V. Oommen**, Current Science, Vol. 105, No. 12, 25 December 2013, p. 1653
6. People's Biodiversity Register – A Tool for Natural Resource Management (2014), **Laladhas K.P., Preetha N. and Oommen V. Oommen**, National Conference on Biodiversity (NCB 2014) – Issues, Concern and Future Strategies, Science City, Kolkata, Programme and Abstracts, p 42.
7. Strategies for Biodiversity Governance – Kerala Perspectives (2014), **Laladhas K.P., Preetha N., Baijulal B. and Oommen V. Oommen**, International Conference on Environmental Biology and Ecological Modelling (ICEBEM 2014), Santiniketan, Programme Abstracts, p. 28.
8. Building Synergies Between Science and Local Knowledge for Conservation of Biodiversity – People's Biodiversity Register, (2014), **Laladhas K.P., Preetha N., Baijulal B. and Oommen V. Oommen**, 26th Kerala Science Congress 28-31 January, 2014, Wayanad, Kerala, Compendium – Traditional Knowledge, p 122-142.
9. Parambaragatha Matsyathozhilalikalude Sahakaranathode Kadalinte Jaivavaividhya Register Thayyarakkuvanulla Noothanashramam (2014), **Robert Panipilla, Aneesha Ani Benedict, Bijukumar A, Laladhas K.P. and Oommen V. Oommen**, 26th Kerala Science Congress 28-31 January, 2014, Wayanad, Kerala, Abstracts, p. 351.
10. Traditional Drug Recipes for Snake venom: Aristolochia indica and Ophiorrhiza mungos show the way (2014), **Anaswara Krishnan S, Dileep Kumar R. and Oommen V. Oommen**, 26th Kerala Science Congress 28-31 January, 2014, Wayanad, Kerala, Abstracts, p. 243.
11. Venomics reveals the plausible underlying mechanisms inherent to Oecophylla smaragdina (Asian Weaver Ant) as a Biocontrol Agent (2014), **Priya Das, Dileepkumar R., Anaswara Krishnan S, Achuthsankar S. Nair and Oommen V. Oommen**, 26th Kerala Science Congress 28-31 January, 2014, Wayanad, Kerala, Abstracts, p. 321.
12. Biodiversity conservation – An Indian initiative (2014), **Oommen V. Oommen, Laladhas K.P., Preetha N.**, National Seminar Contemporary Techniques in Environmental Research and Conservation, 13th & 14th March, 2014, Thiruvananthapuram.
13. Vernacular names of fresh water fishes of Kerala (2014) **Biju Kumar A, Shaji CP and Laladhas KP** Journal of Aquatic Biology and Fisheries Vol 2 No 1

## POPULAR ARTICLES

1. Dheseeya Jaiva Vivydhyha Congress 2012 review (2013)- **Oommen V. Oommen, K. P. Laladhas** Yojana ( Govt. of India ) 2013 (41) PP 50-52
2. "Kuttanad – Our Heritage Our Wealth"(2013)- **G S Unnikrishnan Nair**, Kerala Calling, September
3. "Grandma's Forest" (2013)- **G S Unnikrishnan Nair**, Kerala Calling, December
4. "Think, Eat, Save" (2013)- **G S Unnikrishnan Nair**, Kerala Calling, June
5. Therapeutic Significance of Minor Fruits (2013)- **G S Unnikrishnan Nair**, Scientia, September
6. "Writing Science for Children" (2014)- **G S Unnikrishnan Nair**, Plenary speaker, Third International Conference on World Science Fiction in India, St. Therassus College. Cochin
7. The Poor Man's Cow (2014)- **G S Unnikrishnan Nair**, Kerala Calling, March

# REPRESENTATION IN EXPERT COMMITTEES AND OUTREACH PROGRAMMES

## KSBB Representation in Expert Committees

### Dr.Oommen V Oommen, Chairman

1. Vice Chairman of State Expert Appraisal Committee (SEAC)
2. State Level Committee on Conservation of Water resources
3. Expert Committee on curriculum revision (SCERT), Kerala
4. Research Committee – Department of Environment and Climate Change (DoECC)
5. State Level Committee on Paddy and Wetland Conservation
6. Task Force on Biodiversity Management Committee, National Biodiversity Authority, Chennai
7. Hon. Director, Centre for Venom Informatics, Karyavattom, University of Kerala
8. Expert member, Science Board, Indira Gandhi National Open University (IGNOU), New Delhi
9. President, Kerala Academy of Sciences

### Dr.K.P.Laladhas, Member Secretary

1. National Level Expert Committee on Access and Benefit Sharing, National Biodiversity Authority, Chennai
2. Member Expert Committee- International Inter University Centre for Biology, University of Kannur
3. Member Faculty of Technology, Kannur University
4. Convener, Kerala State Biodiversity Board – Staff Recruitment Rules –Adhoc Committee
5. Member – Board of Studies in Aqua Culture (Single Board), University of Calicut(2008-2018)
6. Member – Board of Studies in Forestry and Wood Technology (Combined), University of Kannur
7. Nodel Officer, Prevention of Money Laundering

Act 2002 (PMLA), Environment Department, Government of Kerala

8. Member – Technical Committee, Karamana River Scientific Management Project, Kerala State Council for Science, Technology and Environment
9. Member – Task Force to Prepare project report on Tanks and Ponds in Kerala, Proposed by Planning Board, Government of Kerala
10. Review Member, Balasahithya Puraskara Committee, Kerala State Institute of Children's Literature, Department of Cultural Affairs, Government of Kerala
11. Director, Life Science Research Centre, St Stephens College, Pathanapuram
12. Life Member of Kerala Academy of Sciences
13. Expert Team Member to assess plant Genome Saviour Community Award, applicants -2012

## Participation in National level consultative meetings

### Dr.Oommen V. Oommen, Chairman, KSBB

- Attended the Science Board meeting in IGNOU University, Delhi on 15.05.2013
- Attended the First Stakeholder Consultation meeting for review of India's 5th National Report to the Convention of Biological Diversity on 30th July 2013 at WWF India Auditorium, New Delhi
- Attended the one day consultative meeting organised by NBA on 01 August 2013 at Pune
- Attended the meeting of Chairmen of all SBBs on 17.10.2013 at NBA, Chennai
- Government deputed to New Delhi on 16.12.2013 for discussion with the counsel of Gov. (O/A No.26/2012) in the NGT New Delhi
- Attended the meeting of SBBs on 20-21 January 2014 at National Biodiversity Authority, Chennai
- Attended a Selection Committee meeting in University of Madras, Chennai on 20.02.2014



- Visited MoEF to meet the Hon.Minister for MoEF and the counsels of Kerala Govt. to give the recommendations of the Expert Committee on Kasthurirangan Committee Report on 11-13 February 2014
- Discussed about Kasthurirangan committee report with the Secretary, Joint Secretary and other officials of MoEF in Delhi on 27 February 2014
- Representing Kerala Government visited Delhi to meet legal experts/ Advocates for National Green Tribunal cases in connection with Kasthurirangan committee report on 22-24 March 2014.

### **Dr.K.P.Laladhas, Member Secretary, KSBB**

- Attended the 24th, 25th, 26th and 27th meeting of the Expert Committee on Access and Benefit Sharing on 11.05.2013, 15.06.2013, 21.08.2013 21.11.13 at NBA, Chennai.
- Attended the one day consultative meeting organised by NBA on 01 August 2013 at Pune
- Attended the meeting of SBBs on 20-21 January 2014 at NBA, Chennai
- Visited MoEF to meet the Hon.Minister for MoEF and the counsels of Kerala Govt. to give the recommendations of the Expert Committee on Kasthurirangan Committee Report on 11-13 February 2014
- Discussed about Kasthurirangan committee report with the Secretary, Joint Secretary and other officials of MoEF in Delhi on 27 February 2014

### **Outreach Programmes** **Chairman, National Biodiversity Authority**

NBA chairman visited Munnar in connection with establishment of National Biodiversity Garden & Traditional Knowledge Centre on 31.11.2013

### **Dr.Oommen V. Oommen, Chairman, KSBB**

- Gave a talk in International Dark sky association meeting in Science & Technology Museum on 05.04.2013
- Delivered a lecture in INCITE programme at Shangumukam beach on 13.04.2013
- Presided over a function organized by Organic Kerala, Ernakulam and gave a talk on 'Climate change and biodiversity' on 15.04.2013

- Delivered a lecture in Sacred Heart College, Thevara on WGEEP on 16.04.2013.
- Inaugurated state level residential vacation training programme for students conducted by MSSRF, Wayanad on 07.05.2013
- Attended World Environment Day Celebrations at Museum compound conducted by State Medicinal Plant Board and gave a talk on 'Think, Eat and save' at Sarvodaya Vidhyalaya on 05.06.2013
- Attended Executive Committee Meeting on 7.06.2013 at Malabar Botanical Garden, Kozhikode
- Delivered a Keynote address in connection with World Environment Day Celebrations 2013 organised by Catholice College, Pathanamthitta on 10.06.2013
- Inauguration of Seminar in connection with World Environment Day Celebrations 2013 organised by Dept. of Zoology and Nature Club, M.G. College, Thiruvananthapuram on 12.06.2013 at Seminar Hall
- Attended workshop on Soil and water conservation in Kalpetta, Wayanad on 21.06.2013
- Visited Christian Medical College, Velloor for TEM studies with Dr. M.A. Akbarsha on 04.07.2013
- Gave a talk in Mar Ivanious College on World Environment Day on 05.07.2013
- Visited KFRI, Thrissur as Mahatma Gandhi University Commission member
- Phone in live programme by Doordarshan on 'Krishiyum Jaivavaividyaavum' on 19.07.2013
- Visited quarries in Ranni & Vadakkasserikara with SEAC team on 20.07.2013
- Gave a talk in Academic Staff College, Kariavattom on the importance of Biodiversity 'Biodiversity Conservation: How important it is' on 22.07.2013
- Gave a Talk on 'Science & Technology and Biodiversity' in Trivandrum International School on 26.07.2013
- Visited 11 quarries in Kalangoor Panchayat with Director DoECC and Mr.John Mathai, CESS on 05.08.2013 to evaluate the environment related issues as suggested by the Govt.
- Gave a talk on "The State of Environment and Biodiversity of Western Ghats" - Workshop on Crowd Sourcing of in situ Data for Remote Sensing and Modelling of Environment at S.P.Grand Days, Thiruvananthapuram on 07.08.2013.



- Gave a talk in the University College, Thiruvananthapuram on 'Biodiversity conservation strategy' on 06.09.2013
- Visited the Malappuram District Panchayat Office and addressed all the Presidents of GPs, Block Panchayats and secretaries of all the Panchayats on 26.09.2014
- Attended the General Council & Advisory Committee of MGDC at Bharadidasan University and took part in the discussion on 01.10.2013.
- Chaird the Infosys Science Foundation Lecture organised by KAS on 05.10.2013.
- Presided over the inauguration and delivered a lecture Culture, Heritage and Biodiversity Register in the Kerala Environment Congress organised by Centre for Environment and Development in Co-bank Tower, Thiruvananthapuram on 09.10.2013
- Conducted BMC empowerment at Kozhikode on 15.10.2013
- Visited Pamba and Sannidhanam and evaluated status of the Pamba at its origin. Visited the STP at Pamba on 16.10.2013.
- Presented the HLWG report in the all party meeting convened by C.M in his conference hall on 21.10.2013, attended by several ministers and all heads of departments.
- Inaugurated the Short Course on Recent Advances in Conservation of Genetic Resources and Plantation Crops, Kasaragod on 22.10.2013. Gave an invited lecture on 'In situ conservation of Crop Wild Relatives and Landraces'
- Addressed the senior government officers attending the training programme in IMG on Biodiversity (Bio resources) and its importance on 25.10.2013. Discussed the MoEF initiatives for conservation – WGEEP & HLWG reports for WG conservation
- Participated in the text book evaluation committee of SCERT on 29.10.2013
- Conducted meeting of District Panchayat Presidents on empowerment of BMC at Kottayam on 6.11.2013
- Gave a keynote address in the Taxonomy award function on 09.11.13 organized by Prof.T.C.Narendran Trust for Animal Taxonomy in Kozhikode.
- Gave a talk on "Biodiversity – Status and threats in the light of climate change " Winter school, KAU, Thrissur
- Visited Bharat Petroleum, Kochi on 21.12.2013 for Environment Impact Assessment study
- Gave a talk in MSSRF Wayanad on 27.12.2013
- Chaird a session and to give an invited talk in International symposium BDU at Thiruchirappally, on 8.01.2014
- Gave an invited talk on 'People's Biodiversity Register – a tool for natural resource management' in the National Conference on Biodiversity– Issues, Concern and Future Strategies from 15-19 January 2014 at Kolkata
- Received the best Scientist Award and gave a talk in Catholicate College, Pathanamthitta on 21.1.2014
- Inaugurated the workshop on Advanced Nano Characterization Technique as Complementary tools for Biomolecular applications by Noorul Islam Centre for Higher Education, Thuckaly on 22.01.2014
- Inaugurated the project on PBR familiarisation programme at Schools level at Peruvallur HS, Malappuram on 26.01.2014. Ministers Dr.Muneer and Shri. Abdu Rab participated.
- Gave a talk in St.Stephen's College, Pathanapuram on 30.01.2014
- Attended the 26th Kerala Science Congress, Wayanad on 31.01.2014
- Conducted Meeting BMC empowerment at Idukki for Grama Panchayat Presidents on 17.02.2014
- Gave a talk in Newman's College, Thodupuzha on 17.02.2014
- Meeting of District Panchayat Presidents for BMC empowerment at Kasaragod .
- Gave a talk on 'Strategies for Biodiversity Governance- Kerala perspectives' at International Conference on Environmental Biology and Ecological Modelling (ICEBEM 2014), Visva Bharati University , Santiniketan on 25.02.2014
- Meeting of District Panchayat Presidents for BMC empowerment at Kannur on 26.02.2014
- Delivered presentation Biodiversity conservation – An Indian initiative at National Seminar Contemporary Techniques in Environmental Research and Conservation, 13th & 14th March, 2014, Thiruvananthapuram.
- Maharajah of Travancore Curzon Endowment Lecture on 'Biodiversity for Human Welfare' on 15.03.2014 at University of Madras



- Attended 5th Thazhathachan Memorial Lecture on 16.3.2014 at St.Thomas Mar Thoma Church, Kottayam
- Inaugurated National workshop on Marine Zooplakton Identification on 27 March 2014 at St.Stephen's College, Pathanapuram on 27.03.2014.

### **Dr.K.P.Laladhas, Member Secretary, KSBB**

- Visited Edamalakkudy, Idukki for the PBR preparation of Edamalakkudy from 17-20 April 2013
- Visited Achancovil, Kollam to identify Chempanaruvi cattle breeds, a traditional breed of cow on 24.04.2013
- Attended BMC meeting of Koipram, Pandanad and Mannar G.Ps in connection with conservation of River Pampa on 07.06.2013
- Attended the BMC meeting of West Kallada G.P, Mynagappally G.P and Sasthamcotta G.P in connection with conservation of Sasthamcotta Lake on 20.07.2013
- Visited Ambalappra Quarry and BMC meeting at Thrikkakara Municipality on 11.08.2013
- Visited Achancovil, Kollam on 05.09.2013 in connection with Chempanaruvi cattle breeds, a traditional breed of cows

## **FUTURE PLANS**

### **Kerala Biodiversity Park**

KSBB has initiated the project for establishment of Kerala Biodiversity Park at Vallakadavu to disseminate information about the variety of flora and fauna through photographs, display materials, publications, information services, film shows etc. The major themes of Biological Diversity, Ecology, Conservation, Heritage sites and protected areas of Kerala will be represented by various types of exhibits, dioramas, permanent and temporary galleries. The Boat house of Vallakadavu one of the stately heritage monuments dating back to Travancore era used by the stately barges of the Travancore kings has been handed over by The District Tourism Promotion Council to KSBB. The renovation work being undertaken by Nirmithy Kendra is in progress. The Boat house is being developed into a state of art Biodiversity museum with galleries depicting the diverse ecosystems and flora and fauna of the state

## **Board Members**

### **Ex-officio Members**

1. The Executive Vice President, Kerala State Council for Science, Technology and Environment, Sasthra Bhavan, Pattom
2. The Principal Secretary, Forest and Wildlife Department
3. The Principal Secretary, Fisheries Department
4. The Principal Secretary , Environment dept
5. Agricultural Production Commissioner, Government of Kerala

### **Non-official Members**

1. Dr.K.G.Sreekumar, Chief Executive Officer, State Medicinal Plant Board, Kerala
2. Dr. N.Omanakumari, Arunima, Bapuji Gardens, Mannanthala P.O., Thiruvananthapuram
3. Dr.Achuthsankar S. Nair, Head, Dept of Computational Biology and Bioinformatics, University of Kerala, Karyavattom Campus, Thiruvananthapuram - 695581
4. Dr.A.K.Sherief, Cloud – 9 Apartment, Law College Road, Vachiyoor P.O., Thiruvananthapuram
5. Dr.K.Mohana Kurup, Neriampallil House, Elippakulam, Pallickal P.O., Alappuzha – 690 503

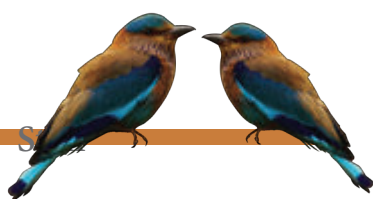
### **Chairman**

**Prof. (Dr.) Oommen V.Oommen**

### **Member Secretary**

**Dr.K.P.Laladhas**





Senior Administrative Officer  
Principal Scientific Officer  
Scientific Officer  
Cashier-cum-Assistant  
Technical Assistant  
Part time Sweeper

Smt.K.Mini  
Dr.AnilKumar  
Shri.G.S. Unnikrishnan Nair  
Shri.S.Manu  
Smt.Nisha S K.  
Smt.V.Prabhakumari

## Project Personnel

Senior Programme Coordinator  
Programme Coordinator  
Programme Coordinator  
Project Associate (accounts)  
Administrative Assistant  
Project Associate  
Project Associate  
Project Associate  
Project Associate  
Data Entry Operator  
Data Entry Operator  
Data Entry Operator  
Data Entry Operator  
Data Analyst  
Skilled Assistant  
Project Assistant  
Project Assistant  
Security  
Security

Prof.Justin Manohar Raj  
Dr.Annie Mathai  
Dr.Mary Reena  
Shri.G.Ramachandran Pillai  
Shri. Sivanesan  
Smt.Mithrambika N.B.  
Smt.Sandhya Rani S.K.  
Ms.Shyni N. Mony  
Dr.Chithra V.S.  
Smt.Ashalatha L.R.  
Smt.Revathy P.  
Smt.Priya S. Nair  
Ms.Ajmi U.R.  
Madhumathi Balachandran  
Shri.Biju M.  
Shri.Vishnu T.  
Jithinka M.  
Kunjumon K.N.  
Sivankutty A.

## NBA Aided Project Personnel

Technical Associate  
Technical Associate  
Administrative Assistant  
Library Assistant

Dr.Preetha N.  
Dr.Baijulal B.  
Smt.Geetha  
Shri.Vinod Sen

## Board Meetings

During the reporting period four regular meetings (on 14th June 2013, 11th October 2013, 11th December 2013 and 31st March 2014) were conducted.





# Audited Statements of Accounts for the Year 2013-14

KERALA STATE BIODIVERSITY BOARD  
MEDICAL COLLEGE PO, TRIVANDRUM

BALANCE SHEET AS AT 31st MARCH, 2014

LIABILITIES	Sch No	As at 31.03.2014 Rs.Ps.		As at 31.3.2013 Rs.Ps.		Sch No	ASSETS	As at 31.03.2014 Rs.Ps.		As at 31.3.2013 Rs.Ps.	
		Rs.Ps.		Rs.Ps.				Rs.Ps.		Rs.Ps.	
CURRENT LIABILITIES	I	25,85,727.32		48,42,914.15		V	FIXED ASSET	16,35,582.05		20,31,949.20	
CAPITAL RESERVE	II	16,35,582.05		20,31,949.21			CURRENT ASSET				
UNSPENT BALANCES:	III						Cash in Hand-Plan	753.00		4,930.00	
Plan Funds - State Government		6,18,712.00		6,08,049.85			Cash in Hand-Non Plan	3,348.00		6,972.00	
Project Funds - Other agencies	IV	60,83,616.00		4,42,300.00			Bank A/c - SBI	45,56,817.00		4,31,317.00	
NBA/DoECC, etc.							Bank A/c - Treasury A/c No.14618	2,36,889.00		13,548.00	
							Bank A/c - Treasury A/c No.15176	43,40,294.00		61,25,337.00	
							Bank A/c - SBT			3,344.00	
							Bank A/c - IDBI	12,462.00		12,462.00	
							Interest Due on Deposit	3,04,723.00			
							Advance to Staff	58,025.00		11,363.00	
INCOME & EXPENDITURE A/c	VI	2,25,255.68		7,17,009.00							
<b>TOTAL</b>		<b>1,11,48,893.05</b>		<b>86,42,222.21</b>			<b>TOTAL</b>	<b>1,11,48,893.05</b>		<b>86,42,222.21</b>	

Notes to Accounts form part of Financial Statements

For Kerala State Biodiversity Board, Trivandrum

*[Signature]*  
Dr. K.P. LALADHAS  
Member Secretary  
Kerala State Biodiversity Board  
Thiruvananthapuram-695 024

Place: Thiruvananthapuram  
Date: 31.07.2014.

Prof. Dr. Oommen. V. Oommen  
Chairman  
Kerala State Biodiversity Board



For JVS & ASSOCIATES  
Chartered Accountants  
FRN 0118793



*[Signature]*  
R.VINOD KUMAR, FCA  
M.NO. 217216  
Partner

**KERALA STATE BIODIVERSITY BOARD  
MEDICAL COLLEGE PO, TRIVANDRUM**

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st MARCH, 2014**

EXPENDITURE	Sch No	Year Ended		INCOME	Sch No	Year Ended	
		31.03.2014	31.3.2013			Rs.Ps.	Rs.Ps.
To Plan Expenditures	X	2,59,66,479.00	2,72,35,760.00	By Grant in aid Income		70,81,863.85	70,21,526.15
To Project Fund Expenditure	XI	21,52,192.00	30,92,845.00	By Plan Fund Income	VII	2,55,92,236.16	2,82,74,881.80
To Employees Cost	XII	57,93,653.17	61,60,193.15	By Project Fund Income	VIII	22,51,666.00	24,50,000.00
To Administrative Expenses	XIII	5,72,458.00	4,52,449.00	By Other Income	IX	82,791.00	6,25,661.00
To Other Expenses	XIV	6,15,349.00	4,12,559.00	By Interest from Banks		18,264.00	76,212.00
To Depreciation	XV	4,18,443.16	3,96,276.80	By Interest accrued on Plan funds			
To Excess of Income Over Expenditure transferred to Balance Sheet			6,98,198.00	By Excess of Expenditure Over Income transferred to Balance Sheet		4,91,753.32	
<b>TOTAL</b>		<b>3,55,18,574.33</b>	<b>3,84,48,280.95</b>	<b>TOTAL</b>		<b>3,55,18,574.33</b>	<b>3,84,48,280.95</b>

Notes to Accounts form part of Financial Statements

For Kerala State Biodiversity Board, Trivandrum

*[Signature]*  
Member Secretary

**Dr. K.P. LALADHAS**  
Member Secretary  
Kerala State Biodiversity Board

Place: *[Signature]*  
Date: 31.07.2014



*[Signature]*

**Prof. Dr. Oommen V. Oommen**  
Chairman  
Kerala State Biodiversity Board

For JVS & ASSOCIATES  
Chartered Accountants  
FRN 041879S



*[Signature]*  
**H.VINOD KUMAR, FCA**  
M.NO. 217216  
Partner



**KERALA STATE BIODIVERSITY BOARD  
PETTAH, TRIVANDRUM**

**Schedules forming part of Balance Sheet**

<b>Schedule I</b>		
<b>Current Liabilities</b>	<b>2013-14 (Rs)</b>	<b>2012-13 (Rs)</b>
Audit Fee Payable	16,854.00	22,500.00
Concurrent Audit Fee Payable	10,000.00	-
GPF Payable	7,000.00	-
GIS Payable	200.00	-
Project Expense Payable	20,000.00	-
TDS Payable	50,000.00	-
SLI Payable	300.00	-
Salary Payable	414.00	414.00
Salary Deductions Payable	0.32	0.15
EMD Receipt Payable	15,350.00	15,350.00
<b>Commtd.Expdt on Plan Funds</b>		
Commtd Expdt PF 02 A - Digitalistaio of PBR	68,750.00	-
Commtd.Expdt-PF 02B-Preperation of PBR	57,321.00	5,73,000.00
Committed Expe PF02T- Conservation And Dissemination of Tuber Diversity	-	50,000.00
Committed Exp PF02C- Handbook for identification of species in the field	-	6,93,600.00
Committed Exp PF 02D-Urban Biodiversity Conservation	1,20,000.00	8,50,000.00
Committed Exp PF02 E- Green Awards	-	6,00,000.00
Committed Exp PF 02X-Conservation of Vechur Cows	-	40,000.00
Committed Exp PF04- Nature/Environment Education Programme	-	1,75,000.00
Commtd.Expdt-PF 02U-KNHM	7,06,023.00	-
Commtd.Expdt-PF03-Coastal Conservation System	-	65,600.00
Commtd.Expdt-PF 02F-AgroBiodiversity Conservation	33,935.00	43,240.00
<b>Commtd.Expdt on Biodvrsty Fund</b>		
Commtd.Expdt-PF02C-Handbook on Identification of Species	2,49,000.00	2,49,000.00
Commtd. Expenditure PF 07A/ KSBB- Cabomba Project	-	60,000.00
Commtd. Expenditure PF 07B/KSBB- Turtle Project	1,20,000.00	1,20,000.00
Commtd. Expenditure PF 07F/KSBB- Ambalappara Quarry Project	2,08,880.00	5,00,000.00
Commtd. Expenditure PF 07G/KSBB- Organic Farmers Project	1,06,400.00	4,56,000.00
Commtd. Expenditure PF 07 H/KSBB-Sahayi Biodiversity Advertisement Project	16,300.00	1,61,210.00
Commtd. Expenditure PF 07I/ KSBB/- Build Pinarayi as an Organic Village	30,000.00	-
Commtd.Expenditure PF 07J/KSBB/ Conservation of Attapadi Black & Malaba	60,000.00	-
Commtd. Expenditure Project on increasing fish stock native fishes in pamba river	75,188.00	-
Commtd. Expenditure - Project to Cheruvayal Raman	5,000.00	-
Commtd Expenditure on mountain bio- Diversity and Ecosystem Diversity	60,000.00	-
Commtd Expenditure Alapatt Panchayath mangrove Nursery By BMC	2,00,000.00	-
Commtd Expenditure : Project on increasing fish stock native fishes in Pamba river	2,24,812.00	-
<b>Commtd.Expdt on DoECC Fund</b>		
Commtd.Expdt-PF04-Nature/Education Environment Programme	28,000.00	28,000.00
Commtd.Expdt-PF04-DOECC	96,000.00	1,40,000.00
<b>Total</b>	<b>25,85,727.32</b>	<b>48,42,914.15</b>

<b>Schedule II</b>		
<b>Capital Reserve</b>	<b>2013-14 (Rs)</b>	<b>2012-13 (Rs)</b>
Capital Reserve	20,31,949.21	12,65,609.01
<b>Assets Acquired out of Plan Funds</b>		
Computer & Accessories	16,100.00	3,73,815.00
Voice Recorder	5,976.00	0.00
Furniture & Fittings	-	1,04,016.00
Plant & Machinery	-	2,08,805.00
Office Equipment	-	4,75,981.00
Sub Total	20,54,025.21	24,28,226.01
Less: Deferred Income transferred to Income & Expenditure A/c	4,18,443.16	3,96,276.80
Less: computer written off	-	-
<b>Total</b>	<b>16,35,582.05</b>	<b>20,31,949.21</b>



Schedule III		
Unspent Balance of Plan Funds	2013-14 (Rs)	2012-13 (Rs)
Grant in Aid Non Plan		
Grant From GOK - Non Plan	-	16,473.85
Plan Fund from GOK	82,282.00	-
Plan Fund from GOK- State Biodiversity Fund	-	-
Plan fund State Bio- Diversity Fund	-	-
Plan Fund-PF 02 C/KSBB - Handbook for identification of species Id	19,450.00	77,313.00
Plan Fund- PF 02 I/KSBB - Conservation of Biodiversity Rich Areas	9,305.00	1,73,637.00
Plan Fund- PF 02 V/KSBB - Biodiversity Heritage Sites	1,33,175.00	1,39,175.00
Plan Fund- PF 02 Y/KSBB - Study of Monsoon Fisheries	1,16,436.00	1,25,035.00
Plan Fund- PF 02 Z/KSBB -Training of Wetlands	26,715.00	26,715.00
Plan Fund-PF02I/ KSBB/-Protection and Management of Bio Diversity rich area	1,38,001.00	-
Plan Fund - PF 03/KSBB-2011-12- Coastal Conservation	65,600.00	-
Interest accrued on plan funds	27,748.00	49,701.00
<b>Total</b>	<b>6,18,712.00</b>	<b>6,08,049.85</b>

Schedule IV		
Unspent Balance of Project Funds	2013-14 (Rs)	2012-13 (Rs)
From Other Agencies		
NBA	46,27,552.00	-
DOECC:		
Project Fund 04B/DOECC/2013-14- Bio Climatic Variables - Migratory Birds	9,00,526.00	3,85,771.00
Project fund 04A/ DOECC/2013-14 Gramavanam	5,00,000.00	-
Project Fund EMA	31,907.00	31,907.00
WGEP (MoEF)	23,631.00	44,622.00
<b>Total</b>	<b>60,83,616.00</b>	<b>4,42,300.00</b>

Schedule VI		
Income & Expenditure A/c	2013-14 (Rs)	2012-13 (Rs)
As per last year Balance Sheet	7,17,009.00	18,811.00
Add: Excess of Income over Expenditure during the year	-	6,98,198.00
Add: Transferred		
Less: Excess of Expenditure over Income during the year	4,91,753.32	-
<b>Total</b>	<b>2,25,255.68</b>	<b>7,17,009.00</b>

2013-14

KERALA STATE BIODIVERSITY BOARD  
PETTAH, TRIVANDRUM

Schedule V & XV: FIXED ASSETS											
Particulars	GROSS BLOCK				Rate %	DEPRECIATION				NET BLOCK	
	Original Cost as on 1.04.13	Use more than 180 days	Use less than 180 days	Sale/Transf er		Upto 1.04.13	Sale/Transf er	For the year	Total	WDV as on 31.03.14	WDV as on 31.03.13
Furniture & Fittings	13,10,509.00	-	-	-	10.00	4,94,205.28	-	81,630.37	5,75,835.65	7,34,673.35	8,16,303.72
Furniture											0.00
Office Equipment	8,437.00	-	-	-	15.00	4,693.46	-	561.53	5,254.99	3,182.01	3,743.54
Cash Chest	1,18,697.00	-	-	-	15.00	8,902.28	-	16,469.21	25,371.49	93,325.52	1,09,794.72
Franking Machine	6,750.00	-	-	-	15.00	2,236.89	-	676.67	2,915.56	3,834.44	4,511.11
Mobile Phone	2,03,000.00	-	-	-	15.00	15,225.00	-	28,166.25	43,391.25	1,59,608.75	1,87,775.00
Generator	28,350.00	-	-	-	15.00	2,126.25	-	3,933.56	6,059.81	22,290.19	26,223.75
GPS	4,48,308.00	-	-	-	15.00	1,33,841.12	-	47,170.03	1,81,011.15	2,67,296.85	3,14,466.86
Photocopier & Projector											0.00
Plant & Machinery	2,79,505.00	-	-	-	15.00	39,110.68	-	36,059.15	75,169.83	2,04,335.17	2,40,394.32
Camera	10,100.00	-	-	-	15.00	2,158.88	-	1,191.17	3,350.05	6,749.95	7,941.12
Refrigerator											0.00
Voice Recorder			5,976.00	-	15.00	0.00		448.20	448.20	5,527.80	0.00
Computer	14,22,791.00	16,100.00	-	-	60.00	11,01,995.96	-	2,02,137.02	13,04,132.98	1,34,758.02	3,20,795.04
<b>TOTAL</b>	<b>38,36,447.00</b>	<b>16,100.00</b>	<b>5,976.00</b>	<b>0.00</b>		<b>18,04,497.80</b>	<b>0.00</b>	<b>4,18,443.16</b>	<b>22,22,940.96</b>	<b>18,35,582.85</b>	<b>20,31,949.20</b>

Mobile Phone, Cash Chest, Photocopier & projector are treated as Office equipment.  
Camera & Refrigerator are treated as Plant & machinery.



**Kerala State Biodiversity Board**  
Schedules forming part of Income & Expenditure Account

Schedule VII		
Plan Fund Income	2013-14(Rs.)	2012-13(Rs.)
Plan Fund from GOK-Biodiversity Conservation		
Plan Income PF 02A/KSBB- Digitisation of PBR	7,86,919.00	-
Plan Income PF 02 B/KSBB - Preparation of PBR	1,16,72,429.00	1,15,00,000.00
Plan Income PF 02 C/KSBB - Handbook for identification of species in the field	5,09,550.00	15,00,000.00
Plan Income PF 02 F/KSBB - Conservation of Indigenous crop varieties & Traditional Animal Breeds	2,99,077.00	-
Plan Income PF 02 G/KSBB - Conference Of Parties	-	2,00,000.00
Plan Income PF02 I/KSBB Organic Farming at Vattavada Project	3,00,000.00	-
Plan Income PF 02 Q/KSBB - Library and Documentation	4,76,723.00	4,50,000.00
Plan Income PF 02 S/KSBB - Infrastructural Facilities	9,20,956.00	13,00,000.00
Plan Income PF 02 U/KSBB - Kerala History Museum	32,06,023.00	-
Plan Income PF 02 W/KSBB - Operational Expenses	25,22,551.00	21,00,000.00
Plan Income PF 02 D/KSBB- Urban Biodiversity Conservation	11,15,765.00	5,00,000.00
Plan Income PF 02 E/KSBB - Green Awards	6,99,557.00	6,00,000.00
Plan Income PF 02 T/KSBB- Conservation And Dissemination of Tuber Diversity	2,00,000.00	2,50,000.00
Plan Income PF 02 X/KSBB- Conservation of Vechur Cows	-	2,00,000.00
Plan Income PF 04/KSBB - Nature/Environment Education Programme	-	1,00,000.00
Plan Fund from GOK- State Biodiversity Fund		
Plan Income PF 02 C/KSBB - Handbook for identification of species in the field	77,313.00	13,343.00
Plan Income PF 02 I/KSBB - Conservation of Biodiversity Rich Areas	-	42,210.00
Plan Income PF 02 V/KSBB - Biodiversity Heritage Sites	6,000.00	98,806.00
Plan Income PF 02 Y/KSBB - Study of Monsoon Fisheries	8,599.00	20,240.00
Plan Income PF 02I/ Protection and Management of Bio Diversity Rich area	35,636.00	-
Plan Income PF 07A/ KSBB- Cabomba Project	-	3,00,000.00
Plan Income PF 07B/KSBB- Turtle Project	-	3,00,000.00
Plan Income PF 07C/KSBB- Cheruvally & Vechur Cattle	4,69,000.00	4,29,000.00
Plan Income PF07D/KSBB- Dwarf Cattle	1,00,000.00	3,00,000.00
Plan Income PF 07E/KSBB-Kodali School Project	-	50,000.00
Plan Income PF 07F/KSBB- Ambalappara Quarry Project	-	5,00,000.00
Plan Income PF 07I/KSBB- 12-13	1,20,000.00	-
Plan Income PF 07J/KSBB-13-14	2,40,000.00	-
Plan Income PF 07K/KSBB- 13-14	2,30,500.00	-
Plan Income PF 07N/KSBB-13-14	1,00,000.00	-
Plan Income project on Paddy Conservation- Cheruvayal Raman	20,000.00	-
Plan Income PF 07G/KSBB- Organic Farmers Project	-	4,56,000.00
Artificial reef through Community participation	60,000.00	-
Agro Bio Diversity Conservation Programme	33,935.00	-
Plan Income Santhi Sthal	3,58,000.00	-
Plan Income PF 07 H/KSBB-Sahayi Biodiversity Advertisement Project	-	1,65,000.00
Plan Income 6 th CBC	4,83,432.00	-
Oushadakeralam	1,00,000.00	-
Investigation on Environmental Issues	21,828.00	-
Plan Fund from EMAK/ DOECC	-	-
Income- National Biodiversity Congress 2012		
Andrapradesh SBB	-	1,00,000.00
Central University , Kasargod	-	50,000.00
DOECC- NBC	-	1,00,000.00
Entry Fee-IDBI	-	3,81,560.00
Fund Transferred From Plan Funds	-	35,00,000.00
Karnataka SBB	-	1,00,000.00
Medicinal Plants Board	-	82,101.00
MP SBB	-	1,00,000.00
NBA- NBC	-	8,00,000.00
Receipt From Bank(Direct Deposit)-NBC	-	60,750.00
Registration Fees-NBC	-	1,47,750.00
RGCBI -NBC	-	50,000.00
Stall Rent-NBC	-	2,39,000.00
Uttaranchal SBB	-	1,00,000.00
West Bengal Biodiversity Board	-	50,000.00
Income- COP 11 activities	-	2,42,845.00
Income-Int.Biodiversity Day Celebrations	-	4,00,000.00
Deferred Income on Fixed Assets	4,18,443.16	3,96,276.80
<b>Total</b>	<b>2,55,92,236.16</b>	<b>2,82,74,881.80</b>



<b>Schedule VIII</b>		
<b>Project Fund Income</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
Project Income PF 04/KSBB - DOECC	99,474.00	13,00,000.00
Project Income PF 04/KSBB - Nature/Environment Education Programme	1,53,973.00	-
Project Income-NBA	19,98,219.00	11,50,000.00
<b>Total</b>	<b>22,51,666.00</b>	<b>24,50,000.00</b>
<b>Schedule IX</b>		
<b>Other Income</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
Miscellaneous Receipts	2,016.00	308.00
Prior Period Income	-	228.00
Sale of Books	75,385.00	56,650.00
Sale of CD	-	1,360.00
Right to Information	20.00	20.00
Receipt From NBC	-	5,64,599.00
Application Fee (RTI)	5,370.00	-
Cost of Tender Forms	-	2,496.00
<b>Total</b>	<b>82,791.00</b>	<b>6,25,661.00</b>
<b>Schedule X</b>		
<b>Plan Expenditures</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
<b>Expenses (Plan) -Biodiversity Conservation</b>		
Plan Expenditure PF 02A/KSBB-13 Digitalisation of PBR	7,86,919.00	-
Plan Expenditure PF 02 B/KSBB - Preparation of PBR	1,16,72,429.00	1,12,82,822.00
Plan Expenditure PF 02 F/KSBB - Conservation of Indigenous crop varieties & Traditional Animal Breeds	2,99,077.00	0.00
Plan Expenditure PF 02 Q/KSBB - Library and Documentation	4,76,723.00	5,54,694.00
Plan Expenditure PF 02 S/KSBB - Infrastructural Facilities	9,20,956.00	12,41,018.00
Plan Expenditure PF 02 U/KSBB -Kerala History Museum	32,06,023.00	-
Plan Expenditure PF 02 W/KSBB - Operational Expenses	25,22,551.00	18,77,462.00
Plan Expenditure PF 02 C/KSBB - Handbook for identification of species in the field & Documentaries	5,09,550.00	8,51,032.00
Plan Expenditure PF 02 G/KSBB - Campus Biodiversity Enhancement Scheme	-	1,81,717.00
Plan Expenditure PF 02 D/KSBB- Urban Biodiversity Conservation	11,15,765.00	13,30,000.00
Plan Expenditure PF 02 E/KSBB - Kerala State Biodiversity Awards	6,99,557.00	6,00,000.00
Plan Expenditure PF 02V KSBB - Organic Farming Vattavada	3,00,000.00	-
Plan Expenditure PF 02 T/ KSBB- Conservation and dissemination of Tuber Diversity	2,00,000.00	2,50,000.00
Plan Expenditure PF 02 X/KSBB- Conservation of Vechur Cows	-	2,00,000.00
Plan Expenditure PF 04/KSBB - Nature/Environment Education Programme	-	3,51,255.00
Agro Bio Diversity Conservation Programme	33,935.00	-
<b>Expenses (Plan) -State Biodiversity Fund</b>		
Plan Expenditure PF 02 C/KSBB- Handbook for identification of species in the field	74,000.00	-
Plan Expenditure PF 02 I/KSBB - Conservation of Biodiversity Rich Areas	35,636.00	42,210.00
Plan Expenditure PF 02 V/KSBB- Biodiversity Heritage Sites	6,000.00	98,806.00
Plan Expenditure PF 02 Y/KSBB -Study of Monsoon Fisheries	8,599.00	20,240.00
Plan Expenditure PF 07A/ KSBB- Cabomba Project	-	3,00,000.00
Plan Expenditure PF 07B/KSBB- Turtle Project	-	3,00,000.00
Plan Expenditure PF 07C/KSBB- Cheruvally & Vechur Cattle	4,69,000.00	4,29,000.00
Plan Expenditure PF07D/KSBB- Dwarf Cattle	1,00,000.00	3,00,000.00
Plan Expenditure PF 07E/KSBB-Kodali School Project	-	50,000.00
Plan Expenditure PF 07F/KSBB- Ambalappara Quarry Project	-	5,00,000.00
Plan Expenditure PF 07G/KSBB- Organic Farmers Project	-	4,58,000.00
Plan Expenditure PF 07 H/KSBB-Sahayi Biodiversity Advertisement Project	-	1,61,210.00
Plan Expenditure PF 07 I/ KSBB/ Build Pinarayi as an organic Village	1,20,000.00	-
Plan Expenditure PF 07 J/KSBB- Conservation of Attappady Black Goats	2,40,000.00	-
Plan Expenditure PF 07K/KSBB- Bioawareness Programme	2,30,500.00	-
Plan Expenditure PF 07 N/ KSBB National Conference on Biodiversity	1,00,000.00	-
Artificial reef through Community participation	60,000.00	-
Oushada Keralam 2013-	1,00,000.00	-
crowd sourcing of In situ Data RSME	99,474.00	-
Plan Expenditure : Santhisthal 2013-14	3,58,000.00	-
Project Expenditure: Cheruvayal Raman	20,000.00	-
Plan Expenditure 6th CBC 2013	4,83,432.00	-
Miscellaneous Expenditure Biodiversity Fund 12-13	-	17,133.00
WEGP/ Kasturi Rangan - Non Plan	6,96,525.00	-
Accommodation Distinguished Guest - NBC	-	8,09,875.00





Accommodation JRF- NBC	-	58,874.00
Archway	-	46,300.00
Banners- NBC	-	1,34,227.00
Booking Premises- NBC	-	2,64,324.00
Brochure- NBC	-	95,958.00
Cap & T-Shirt- NBC	-	51,000.00
Casual Labours- NBC	-	56,000.00
Catering VIP Lunch- NBC	-	2,94,050.00
Catering Working Lunch- NBC	-	2,85,115.00
Conference Proceedings Printing Charges- NBC	-	1,72,440.00
Conveyance- NBC	-	92,960.00
DA & TA to JRF- NBC	-	53,000.00
Designer Remuneration- NBC	-	40,000.00
F.M. Radios NBC	-	98,361.00
H.B.Pencil- NBC	-	13,750.00
Honorarium for Cultural Programme- NBC	-	22,500.00
Honorarium for Photography Competition- NBC	-	3,000.00
Honorarium for Harithasangamam Participants- NBC	-	39,826.00
Infrastructure Facilities NBC	-	16,16,714.00
Investigation on Environmental issues	21,628.00	-
Infrastructure- Sound System NBC	-	4,25,000.00
Jute Bags- NBC	-	1,98,500.00
Media Cell- NBC	-	62,567.00
Miscellaneous Charges- NBC	-	33,945.00
Memento- NBC	-	90,000.00
Notepad Printing- NBC	-	35,123.00
Parcel Charges NBC	-	13,880.00
Photography Competition- NBC	-	35,003.00
Programme Notice Printing- NBC	-	41,500.00
Refreshment to Cultural Programme Artists- NBC	-	25,058.00
Road Show- NBC	-	1,62,476.00
Secretarial Work Remuneration- NBC	-	55,161.00
Stall Decoration Items- NBC	-	10,250.00
Stall Designing- NBC	-	1,40,000.00
Stationary Expenses- NBC	-	32,562.00
TA for BMC Meeting Participants- NBC	-	49,205.00
TA to Distinguished Delegates- NBC	-	52,306.00
Video Coverage- NBC	-	38,500.00
Website Designing- NBC	-	42,500.00
Binding Charges	-	270.00
Bank Charges	-	618.00
Editing Charges	-	18,400.00
Printing & Supply of Suggestions	-	40,000.00
Refund to NBA	-	63.00
Audit Fee	-	10,000.00
<b>Total</b>	<b>2,69,66,479.00</b>	<b>2,72,35,760.00</b>

#### Schedule XI

#### Project Fund Expenditure

	2013-14(Rs.)	2012-13(Rs.)
<b>Expenses(Plan)-DoECC Fund</b>		
Plan Expenditure PF 04/KSBB - DOECC	1,53,973.00	13,00,000.00
Plan Expenditure PF 04/KSBB - Nature/Environment Education Programme	-	-
<b>Plan Expenditure NBA</b>		
Printing Charges of NBA Books	22,000.00	-
Publication Bio- Diversity Manual NBA	1,84,350.00	-
Awareness & Familiarisation Programme- PBR NBA	5,11,431.00	-
Outsourcing/ In connection with CoP-11	-	8,00,000.00
Salaries - NBA	6,11,226.00	-
WETLAND - NBA	75,000.00	-
Preparation of Hand books in regional Language	-	3,50,000.00
Plan Expenditure Cop-11 Activities	1,44,212.00	2,42,845.00
Expenditure National Biodiversity Congress 2012	-	-
International Biodiversity Day Celebrations	4,50,000.00	4,00,000.00
<b>Total</b>	<b>21,52,192.00</b>	<b>30,92,845.00</b>



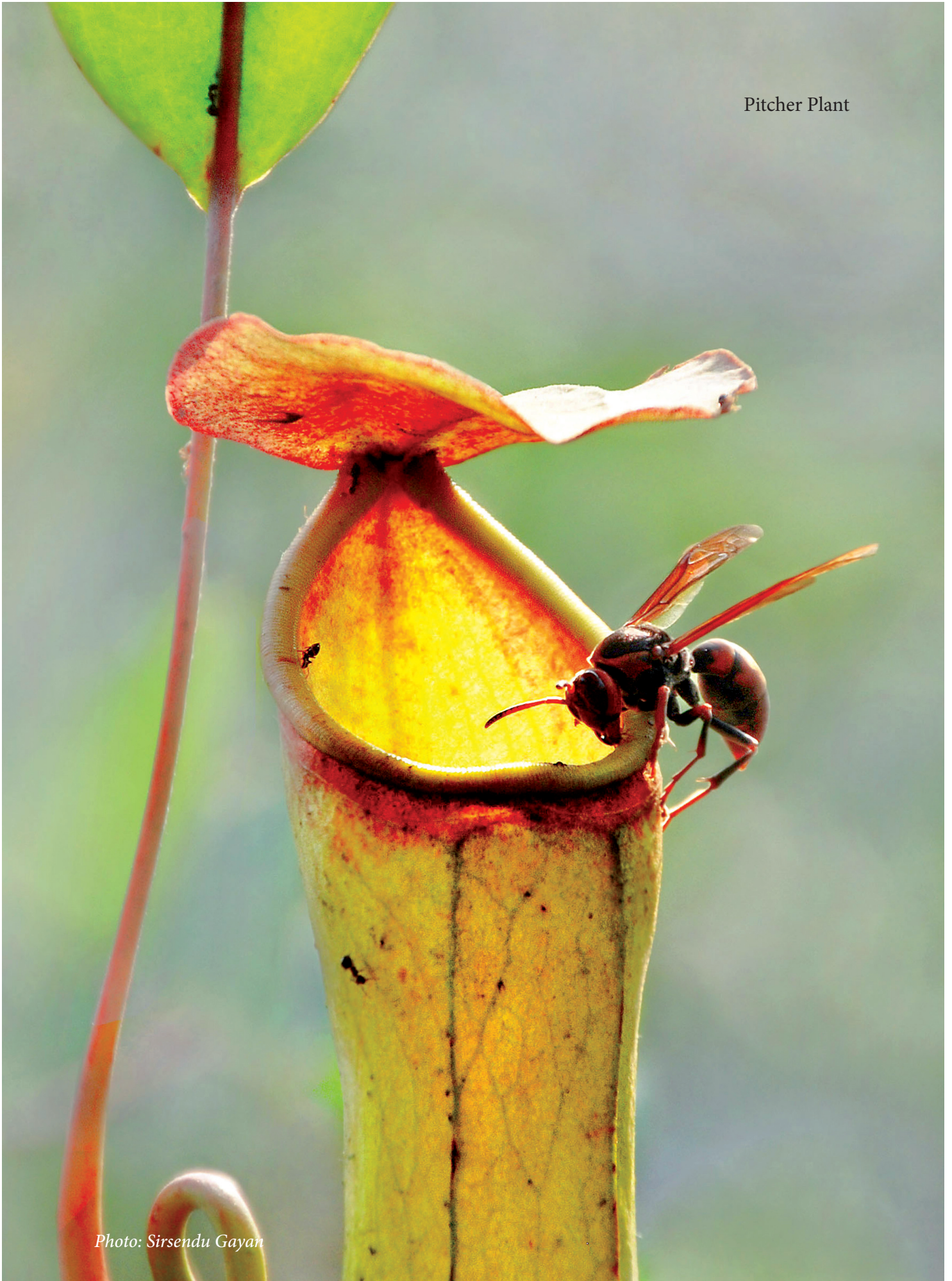
<b>Schedule XII</b>		
<b>Employees Cost</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
Pay & Allowances	53,68,076.00	51,34,847.00
Arrear of Pay, DA Arrears, Pension Contribution, Employer's Contribution	2,23,299.17	8,71,422.15
ELS Surrendered	1,73,209.00	1,41,819.00
Gratuity	13,669.00	-
Festival Allowance	15,400.00	11,830.00
Travelling Allowance	-	475.00
<b>Total</b>	<b>57,93,653.17</b>	<b>61,60,193.15</b>
<b>Schedule XIII</b>		
<b>Administrative Expenses</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
Board Meeting Expenses	18,367.00	45,519.00
Postage and Couriers	47,015.00	23,530.00
Printing charges	1,28,750.00	20,250.00
Internet Charges	14,213.00	-
Stationary inclu: Computer Pheripherals	4,948.00	28,484.00
Rent & Tax	2,78,262.00	2,33,471.00
Telephone Charges	39,756.00	36,528.00
Electricity charges	41,147.00	64,667.00
Refreshment Charges	-	-
<b>Total</b>	<b>5,72,458.00</b>	<b>4,52,449.00</b>
<b>Schedule XIV</b>		
<b>Other Expenses</b>	<b>2013-14(Rs.)</b>	<b>2012-13(Rs.)</b>
Audit Fee	1,36,854.00	1,05,000.00
Miscellaneous Expenses	1,74,344.00	28,600.00
Repairs and Maintenance	67,865.00	29,902.00
Security Charges	2,04,000.00	1,94,000.00
Water charges	2,284.00	2,466.00
Travelling Expenses	2,740.00	-
Annual report & Publications	17,900.00	51,916.00
Generator Expenses	2,622.00	-
Bank Charges	4,641.00	675.00
Advertisement Expenses	2,099.00	-
Less: Round Off	-	15.00
<b>Total</b>	<b>6,15,349.00</b>	<b>4,12,559.00</b>



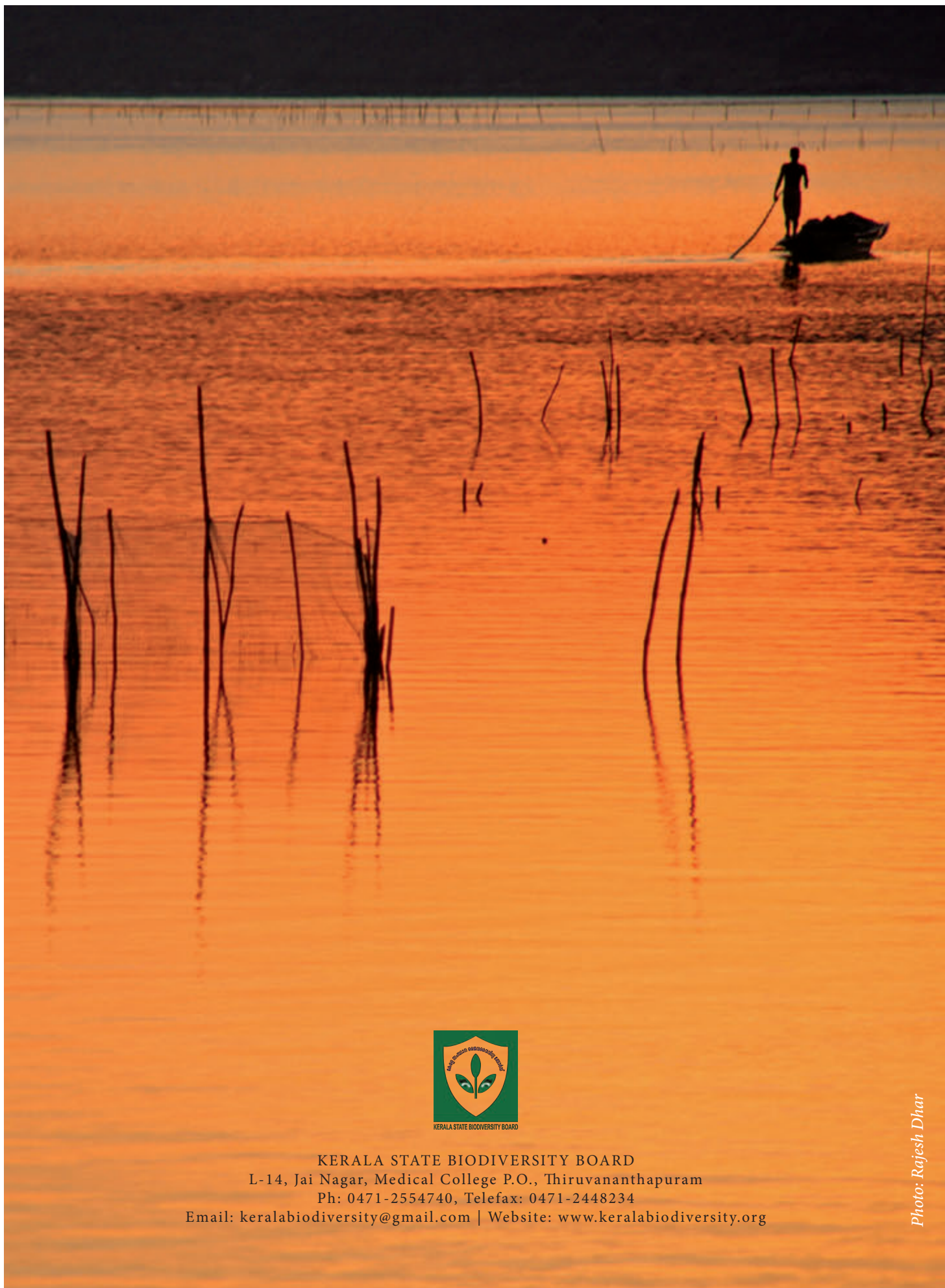


Pitcher Plant

*Photo: Sirsendu Gayan*







KERALA STATE BIODIVERSITY BOARD  
L-14, Jai Nagar, Medical College P.O., Thiruvananthapuram  
Ph: 0471-2554740, Telefax: 0471-2448234  
Email: keralabiodiversity@gmail.com | Website: [www.keralabiodiversity.org](http://www.keralabiodiversity.org)

Photo: Rajesh Dhar