



ಪರಿಸರ ನಿರ್ವಹಣೆ ಮತ್ತು ನೀತಿ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ
Environmental Management and Policy Research Institute

ವಾರ್ಷಿಕ ವರದಿ
ANNUAL REPORT
2018-19



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CHAPTER 1. ABOUT THE INSTITUTE

1.1. Constitution:

The Environmental Management & Policy Research Institute (EMPRI) is an autonomous institute established by Government of Karnataka on 17th September 2002 under the Department of Forest, Ecology and Environment. The Institute undertakes applied and policy research and also endeavours to provide capacity building trainings on concurrent environmental issues relevant to the society. Services provided by the institute seek to encourage and enable government, industry and civil society to safeguard and manage the natural resources effectively. It is registered under the Karnataka Societies Registration Act, 1960.

1.2. Governance:

EMPRI functions under the direction of a Governing Body chaired by the Additional Chief Secretary, Department of Forest, Ecology & Environment, Government of Karnataka. The Governing Body consists of representatives of various Government departments and Government authorities including Department of Forest, Ecology & Environment, Department of Urban Development, Department of Industries & Commerce, Department of Health & Family Welfare, Department of Finance, Central Pollution Control Board (CPCB) and Karnataka State Pollution Control Board (KSPCB). The Director General (DG), EMPRI is the Member Secretary of the Governing Body. The DG being the Chief Executive of the Institute is responsible for day-to-day administration of the organization, supported by the officers deputed from the Government of Karnataka and personnel contracted/outsourced for specific purposes.

1.2.1 General Body:

General Body is chaired by the Additional Chief Secretary, Department of Forest, Ecology & Environment, Government of Karnataka. The members of Governing Body are also the members of General Body. The General Body meeting is convened every year to consider and approve the Annual Administration Report, Audit Report, Income and Expenditure Statement etc. It also approves the budget for the ensuing year.

1.2.2 Governing Body:

The Governing Body (GB) of the EMPRI is constituted by Government of Karnataka, nominating senior level functionaries of various Departments. The list of members of the Governing Body committee is placed in **Annexure - 1**

1.2.3 Committees:

Following committees are constituted to advices and also to take decisions on specific matters.

1. **Executive Committee:** A five member committee constituted by the Governing Body and is chaired by the Director General. The committee advises and takes decisions on administrative and financial matters. The composition of the Executive Committee is placed in **Annexure -2**.

- 2. Research & Training Advisory Committee:** The Committee is constituted as per decision taken in the 28th GB meeting and the Director General, EMPRI is the Chairman of the Committee. The Committee consists of 11 members including Govt. Officers and functionaries from eminent organizations like Institute of Social Economic Change, Karnataka Pollution Control Board, Central Pollution Control Board and University of Agriculture Science. The composition of the committee as per the 48th GB is placed in **Annexure – 3**.
- 3. Selection Committee:** A Selection Committee, for the selection of candidates required to be filled up for various posts in EMPRI, The Selection Committee has been constituted as per the decision taken in the 38th Executive committee meeting held on 11-11-2013. This has been confirmed by the 38th Governing body meeting held on 18-12-2013. The Director General, EMPRI is the Chairman of the committee. The composition of the committee is placed in **Annexure – 4**.
- 4. Performance Review Committee:** As per decision taken in the 39th GB meeting, a three member Performance Review Committee headed by Director General, Director, EMPRI and Director (Research) as members have been constituted. The committee reviews the performance of the outsourced/manpower --and makes recommendation to the Executive Committee and Governing Body.
- 5. Internship Committee:** The committee is constituted as per decision taken in 40th GB meeting to select eligible graduates and post graduate students as interns. The committee is chaired by the Director General, EMPRI and comprises of three other members. The composition of the committee is placed in **Annexure – 5**
- 6. Training Evaluation Committee:** The EMPRI takes up training activities on various environmental issues and a four member committee has been constituted to evaluate the training programmes conducted by EMPRI. The committee is chaired by the Director, EMPRI and Director (Research) EMPRI, Shri. T. Mahesh, Environmental Officer, Karnataka Pollution Control Board, Bangalore and Project Development Officer, EMPRI are the members.
- 7. Technical Advisory Panel:** A Technical Advisory Panel (TAP) has been constituted on 12.04.2016 for according approval of configuration of Computer Hardware/Software required to be purchased for EMPRI. The Director General, EMPRI is the Chairman and comprises of five other members. The composition of the committee is placed in **Annexure – 6**

1.3 Vision:

The EMPRI's vision is to become a knowledge centre inspiring and enabling society to create an environment of harmony between man and nature.

1.4 Mission:

1. To carry out research on current policy and environmental issues;
2. To provide world class training and advisory services on environmental management and
3. To enable and encourage the civil society, the government and the industries to safeguard and manage natural resources effectively.

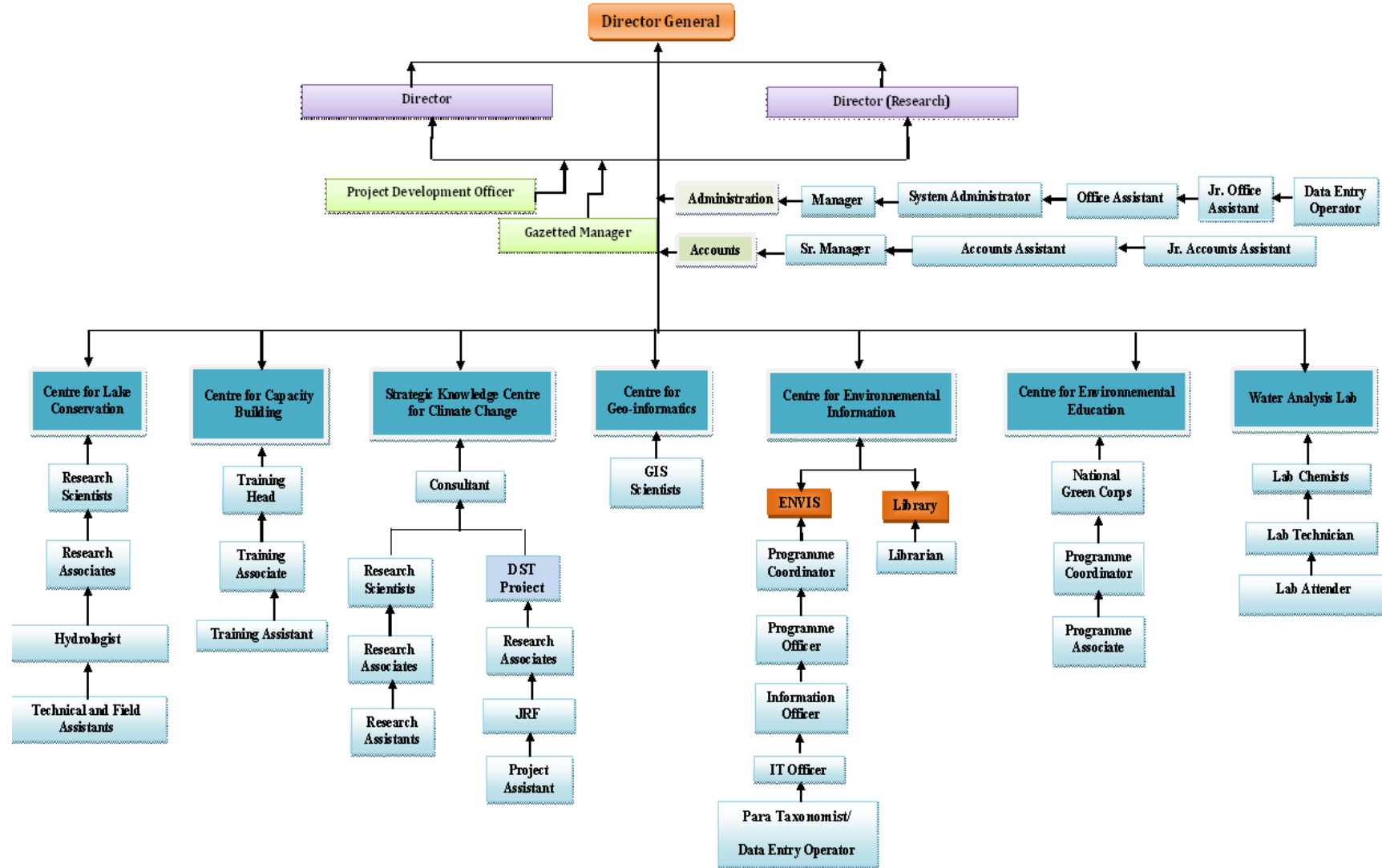
1.5 Objectives:

1. To provide Capacity Building & Technical support to Government, Non-Government & other Institutions in addressing policy and environmental issues;
2. To provide Consultancy Services to Industries, Government Departments and other organizations in the field of Environmental Management and
3. To take up studies and to develop policy documents on various environmental aspects.

1.6 Functions:

1. To contribute towards the protection and management of Environment & Ecology through Scientific, Technical, Policy research & other activities;
2. To assist the Government Departments, Non-Government Organisation (NGO) and Public at large in performing the mandatory functions specified in the various environment laws, guidelines and judicial pronouncements from time to time and to assist the concerned agencies in setting up norms;
3. To undertake/develop studies and research in the field of environment protection and conservation for improving the overall quality of environment;
4. To develop expertise in the field of environmental research and to develop into world-class consultants and to act as a referral institute;
5. To interact and/or to seek affiliation with national and international agencies working with similar objectives;
6. To undertake training and human resources development in the field of environment and by organizing seminars/workshops and other programs for stakeholders;
7. To print, publish, exhibit books, pamphlets and periodicals, educative and informative materials that may be considered desirable for promotion of the objectives of the institute and
8. To run an ENVIS (Environmental Information System) Centre and to develop, maintain and run a reference library and data centre with books, periodicals, films, video and other audio-visual materials.

1.7 Organizational structure:-



CHAPTER 2. MAJOR ACTIVITIES

2.1 Training:-

Capacity building is a thrust area in EMPRI. The institute conducts need-based training programmes on various environment related issues.

During the year 2018-19 Total 56 Trainings/Workshops were conducted out of that 49 trainings on Plastic ban and 2 trainings on bio Medical Waste Management have been organized and 7383 Participants were trained.

EMPRI has developed linkages with several agencies, industries and NGOs working in related fields and intends to extend the collaboration process with eminent and reputed agencies.

2.1.1 Information, Education and Communication Activities:

Information, Education and Communication activities are essential to spread the message about existing law, environmental protection, and pollution control. EMPRI aims at mass communication to reach thousands of people at a time regarding significant environmental issues in which general public are major stake holders. Activity for the year 2018-19:

I. EMPRI is capable conducting following trainings

II. Training on Plastic ban Notification & Awareness through various activities

- Organized 49 trainings & 6744 trained participants

Awareness through Dissemination activities:

- Distribution of Calendars with Plastic ban Message;
- Distribution of Mugs with Plastic ban Message;
- Banner display on Karnataka State Road Transport Corporation (KSRTC);
- Distribution of t-shirts with Plastic Ban message for Government Deaf and Dumb School children of the state;
- Whatsapp Messages;
- Standees at Metro stations;
- Distribution of Cloth Bags with plastic ban message;
- Celebration of World Environment Day with "Beat Plastic Pollution" Slogan
- Posters on Plastic Ban Developed & sent to Directorate of Municipal Administration (DMA) & Bruhath Bengaluru Mahanagara Palike or Display at Metro stations/Railway stations/Bus stands;
- Stall opened in Dasara Exhibition Ground to educate the public regarding ill effects of plastic on Environment & Human health;
- Documentary on Plastic Ban & Dance Metaphor.

Feedback from Participants:

1. Continuous trainings should be organized till the usage of banned plastic items are stopped.
2. NGO's and Social organizations to be involved in trainings
3. Suggested ward level trainings at city level which are more effective.
4. Production units manufacturing banned plastic items are to be closed
5. Trainings for Hotel and Restaurants staff vegetable vendors suggested also frequent meetings with restaurants, shops and vendors to be conducted to formulate plans to curb plastic.
6. Clarification required for plastic containers, garbage bags, foil covers, sealed lunch tray
7. Officers and staff of Urban Local Bodies (ULB) to ensure the implementation of notification at field level
8. Pictorial handouts on banned and alternatives to be circulated
9. Documentary on plastic ban to be screened in cinema halls and schools to educate school children's and general public at large
10. Cloth bags with competitive rates are made available in the markets easily
11. Crackers are to be banned in political party processions and festivals
12. Farmers growing banana plants are to be identified and incentives to be given to the farmers who supplies banana leaves to the market
13. Banned plastic items coming from neighboring states should be curbed at checkpoints
14. To educate general public with regard to segregation of waste at the point of generation into dry and wet waste.

The details of the training programmes can be seen in **Annexure - 7**.



Training on plastic ban-food safety commissionerate



Training on Plastic Ban-Hoteliere Association, Choultry Association & Roadside Vendors



Training on Plastic Ban- Hoteliere Association, Choultry Association & Road side Vendors



Training on Plastic Ban & SWM in South Zone



Training on Plastic Ban- Hoteliere Association, Choultry Association & Road side Vendors



Training on Plastic Ban- Hoteliers Association, Choultry Association & Roadside Vendors



Training on Plastic Ban-Food safety Commissionerate

Training on Plastic ban-Dharwad





Director, EMPRI visits Government Deaf And Dumb schools in Belagam, Hubli and Distributed t-shirts with plastic ban message to the Inmates



Head Training EMPRI visits Government Deaf And Dumb schools at Kalburgi and Distributed t-shirts with plastic ban message to the Inmates



Table top Calendar with plastic ban Message



Mug with Plastic Ban Message



Beat Plastic Pollution – Stall at Mysore Dasara Exhibition

ಬಾಸ್ಪಿಕ್ ನಿಷೇಧ		PLASTIC BAN	
BANNED		ALTERNATIVES	
	ಬಾಸ್ಪಿಕ್ ಥ್ಯಾಂಕ್ ಶೀಟ್ಸ್		ಬಟ್ಟೆ / ಜುಟ್ / ಪಾಪರ್ ಕ್ಲಾತ್ / ಜುಟ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		ಪಾಪರ್ ಬ್ಯಾಗ್ಸ್
	ಬಾಸ್ಪಿಕ್ ಫ್ಲೆಕ್ಸ್ ಬ್ಯಾನರ್ಸ್		Without Cling Film



Handouts on Banned plastic items & Alternatives

Beat Plastic Pollution – Stall at Mysore Dasara Exhibition

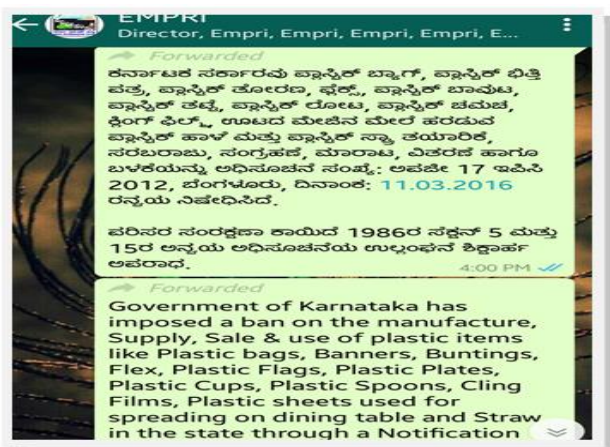


Beat Plastic Pollution- Awareness on Banned Plastic items



Eco-friendly bags –Best for Environment

Awareness on Banned plastic items- Standee at Metro Stations



Awareness through Whatsapp Message

Plastic Ban-Posters

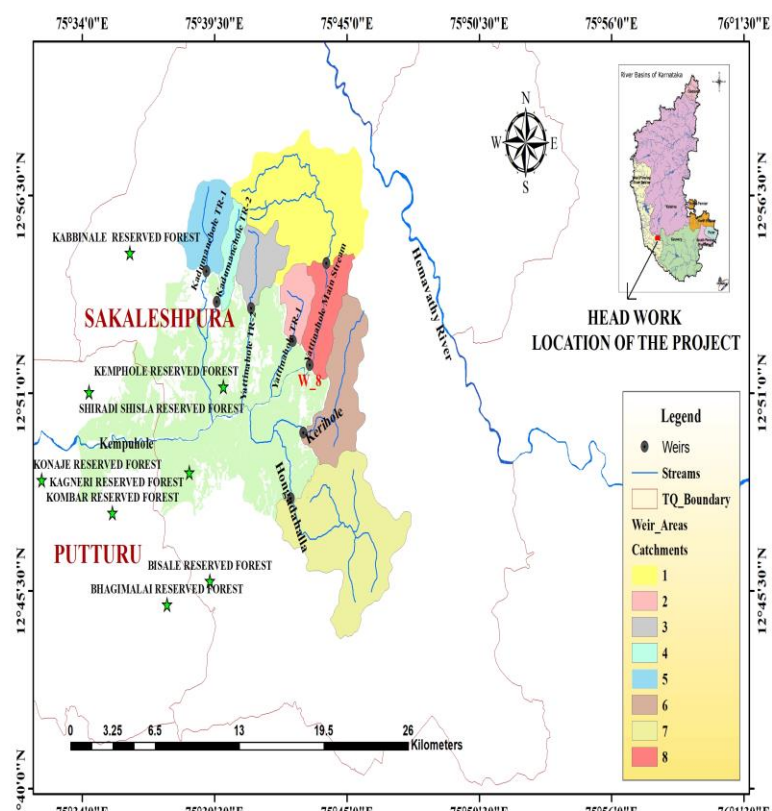
2.2 Research Programmes:-

The EMPRI conducts research on concurrent environmental issues of immediate relevance for the society. In every case, research carried out identifies problems, determines underlying causes and proposes measures to mitigate them. In the year 2018-19 research work carried out at EMPRI included the following:

2.2.1. Centre for Lake Conservation and centre for applied research.

I. Documentation of the Yettinahole Project Sites and Assessment of Cumulative Impact of Multiple Projects in a Forested Landscape:

The Government of Karnataka (GoK) through Karnataka Neeravari Nigama Limited (KNNL) has taken up Yettinahole drinking water project in Hassan district, Karnataka. The project envisages lifting excess flood water over the Western Ghats ridge during the monsoon months to the water starved eastern plains districts of Kolar, Chikkaballapura, Ramanagar, Bangalore rural, Tumakuru, parts of Chikmagalur & Hassan for drinking water purpose. Further, the excess water quantity of 24.01TMC will be lifted during monsoon by constructing 8 weirs cross Yettinahole and its tributaries, Kadumanehole, Hongadahalla, Kerihole streams. The project involves diversion of 13.94 ha forest land in Sakleshpura Taluk for which Stage-I forest clearance under Forest Conservation Act 1980 has been granted by the Ministry of Environment, Forests & Climate Change, Government of India, by imposing certain stipulated conditions. To fulfill the stipulated conditions the Vishweshvaraya Jala Nigama Ltd., Government of Karnataka, has entrusted the study to EMPRI. The following are the two conditions entrusted to EMPRI, which is under progress.



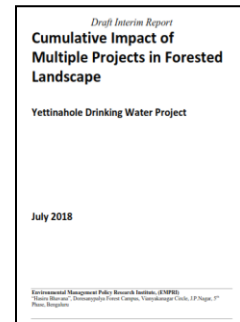
Yettinahole catchment area. Source: EMPRI

Climate Change, Government of India, by imposing certain stipulated conditions. To fulfill the stipulated conditions the Vishweshvaraya Jala Nigama Ltd., Government of Karnataka, has entrusted the study to EMPRI. The following are the two conditions entrusted to EMPRI, which is under progress.

Condition No. 26. In order to benchmark the present status of ecology in the project area and particularly the project work-sites survey and videography based study may be instituted at the cost of user agency. This will facilitate monitoring of project sites and decision making in future.

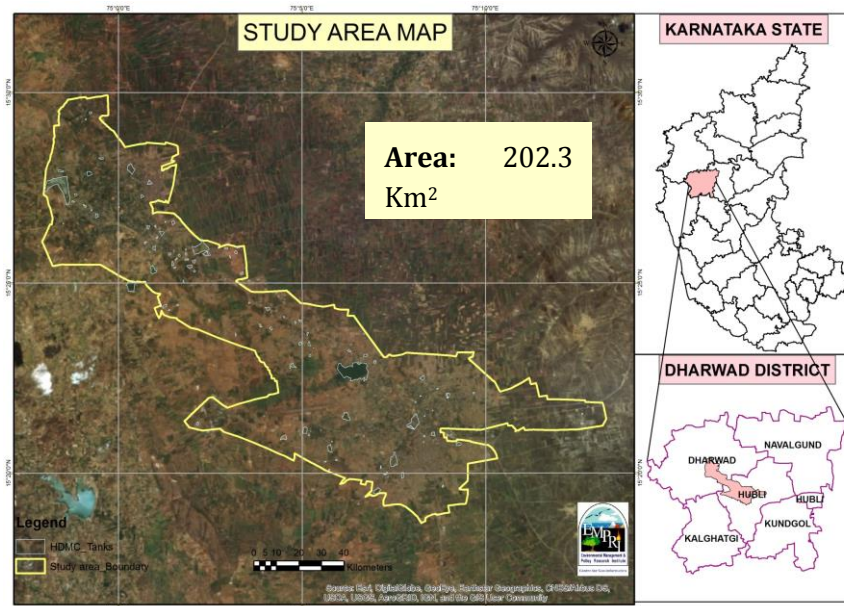
Condition No. 27. Periodic assessment of cumulative impact of multiple projects in a forested landscape by the regulatory authority. It allows an adaptive management in the landscape and an opportunity to evaluate and realign the mitigation strategies.

As per the Condition no. 26, EMPRI has completed videography based study in the project work sites and editing the same is under progress. Pertaining to the Condition no.27 the interim report was prepared based on the collection of baseline environmental data for the first season and was submitted to the funding department. In the meantime collection of seasonal baseline data with respect to various components of environment viz. air, noise, water, soil and socio-economic is completed.



II. Developing Conservation Strategies for the Water bodies in Huballi-Dharwad Municipal Corporation (HDMC);

Under the financial assistance from Centre for Infrastructure, Sustainable Transportation & Urban Planning (CiSTUP), Indian Institute of Science (IISc), Bengaluru the EMPRI has taken-up the study entitled as above. The key objectives of the study are **a)**. Study the Present status of the waterbodies in series, **b)**. Prepare database of all water bodies for HDMC area (including Katte & Kunte) with unique coding **c)**. Prepare the land use/ land cover map and do the change detection analysis between the year 2005 & 2017 **d)**. Analyze the water quality and document the biodiversity for major lakes **e)**. Identify the point and non-point source pollutions, dumping, encroachment **g)**. Estimate the economic value of the major lakes **h)**. Prepare Water body Health Report Card/Water body Atlas and **i)**. Develop conservation strategies for the conservation of water bodies.



As per the scope of the study the field visits are completed and a report has been prepared. Presently printing of the report is underway and the same report will be released shortly.

2.2.2. Water Analysis Laboratory

EMPRI labs were inaugurated in 2016. Ever since then labs is growing. In January 2017 EMPRI labs we accredited for ISO 9001:2015 & OHSAS 18001:2007. The capacity for handling parameters has been increased from 18 to 42. Physico-chemical Laboratory and Micro- biology laboratory is well equipped to carry out following parameters for Water , Soil & Air analysis.

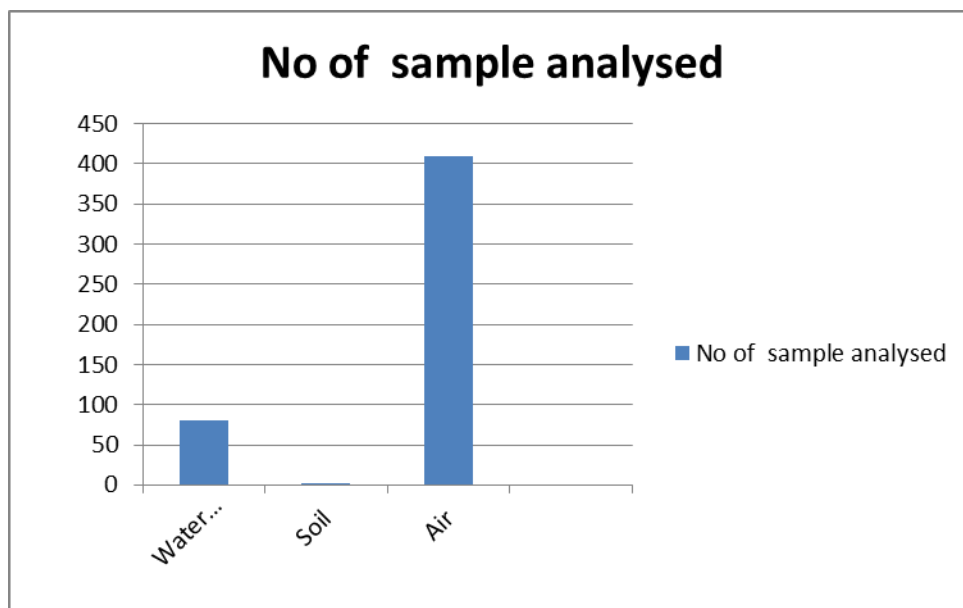
Physico chemical parameters(Water & Soil)

- Acidity
 - Alkalinity
 - Ammonia
 - Biochemical Oxygen Demand
 - Boron
 - Chemical Oxygen Demand
 - Chloride
 - Dissolved Oxygen
 - Electrical Conductivity
 - Fluoride
 - Free chlorine
 - Hardness (Ca & Mg)
 - Oil and grease
 - pH
 - Phosphate
 - Sludge volume Index (S.V.I)
 - Sulphide
 - Total Dissolved Solid
 - Total Kjeldahl Nitrogen
 - Total Solids
 - Total Suspended Solids
 - Turbidity
 - Nitrate- Nitrogen
 - Nitrite – Nitrogen
 - Free ammonia
 - Sodium absorption ratio (SAR)
 - Sodium
 - Potassium
 - Total ammonia
 - Phenols
- Atmospheric Parameters**
- PM 10
 - PM2.5
 - So₂
 - No₂
 - Ammonia(Ambient)
 - Ozone

Microbial parameters

- Bio-assay
- Toxicity
- Fecal coliform
- Total coliform
- E coli

Period/Year(April2018-March 2019)	No of water sample analysed
Water	81
Soil	2
Air	409



Projects Involved: Laboratory was used for analysis of samples collected in following projects

- 1) Developing conservation strategies for the water bodies of Hubbli Dharwad Municipal Corporation
- 2) Water Safety Plan for Bangalore- A quality based Approach to water Supply Service Delivery
- 3) Documentation of Yettinhole project site and assessment of cumulative impact of multiple project in afforested land scape

Training Conducted:

- 1) Green Skill Development Training funded MoEF on Pollution Monitors (Air & Water) from 22.10.2018-31.11.2018- Green Skill Development Programme (GSDP) training funded by Ministry of Environment Forest & Climate Change (MoEF & CC) was successfully conducted in collaboration with Central Pollution Control Board(CPCB).



2.3 Centre for Climate Change

The Centre for Climate Change in EMPRI enables the functioning of EMPRI as the nodal agency for climate change in Karnataka. With the funding support from Govt. of Karnataka and Govt. of India through Department of Science of Technology (DST), Strategic Programmes, Large Initiatives and coordinated Action Enabler (SPLICE) project, "Establishment/ strengthening the state climate change center/cell under National Mission on Strategic Knowledge for Climate Change (NMSKCC) scheme in the state of Karnataka" ongoing since 2016) a **Karnataka Strategic Knowledge Centre for Climate Change (KSKCCC)** is established at EMPRI. As per the major objective of the project, the centre for climate change in EMPRI was strengthened by establishing a State of Art climate change laboratory and developing an interactive knowledge web portal. Long term monitoring of climate change through research projects have been initiated. Training capacity of the institute is also enhanced and capacity building programmes are organised and awareness creation activities are boosted up.

2.3.1. Research Activities

i. **Creation of a state of art Climate change laboratory for research studies on climate change:**

Infrastructure of the Climate Change Laboratory was setup with the fund support from Govt. of Karnataka and 29 equipments were procured through Department of Science & Technology (DST) project and installed/calibrated. The laboratory was inaugurated on 24th July 2018 by Shri R. Shankar, Minister of state, Forest, Ecology and Environment. The SOPs for all the equipments are prepared and the staff were given training for the proper operation of the instruments.

ii. **Research projects**

a. **Butterflies as indicators of climate change: Butterfly monitoring programme for Karnataka.**

Butterflies contribute to major ecosystem services such as pollination and serve as food source for higher organisms like reptiles and birds.. They are vulnerable to the changes in climate and their diversity varies according to the climate and the availability of host plants. Their diversity will be affected by the pollution and urbanisation also. As their occurrence and abundance is influenced by environment and climate, it will be of great use to monitor the butterflies. Hence diversity of butterflies in a locality serves as the best bio-indicators of impact of climate change. Based on the studies on the diversity of butterflies in Bengaluru and other ecoclimatic regions in Karnataka, it has been decided to develop a butterfly monitoring programme for Karnataka. Facilitating the identification of butterflies is most important to monitor the butterflies from different districts/ ecoclimatic regions of Karnataka. As the butterflies are with diverse colour patterns, identity can be mistaken. A field guide entitled, "Bengaluru butterflies : A field guide" including details of 153 species categorised into six colour groups is published for the help in field survey. The details of other around 170 species reported from Karnataka is under compilation.

A mobile Application (App) has been developed for assistance in field identification of butterflies. It is a colour based identification tool which can be used by any common man in his

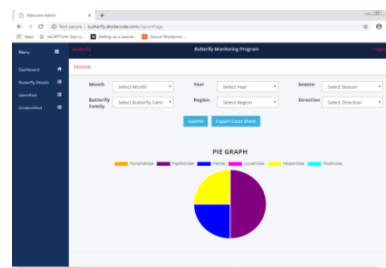
mobile phone. In BIA, butterflies are categorized as per their major colours (black, orange, yellow, white, brown and blue). Colour button will guide the user to the butterflies with same major colour on their wings. By matching the photo of the butterfly seen in the field with the photo in the BIA gallery, one can identify the butterfly spotted in the field. Continuous monitoring in specific areas across different districts in Karnataka can be enabled through public involvement (school children, naturalists, youths, forest dept. officials etc.). The schools under NGC programme (around 8000) and the Forest departments across Karnataka are being drawn in to join in this programme to monitor the butterflies in urban, rural and forest areas under their jurisdiction. The BIA will be provided free to be downloaded in the android mobiles of the users. The identification submitted by the user through BIA will get transferred to a Dashboard of the Karnataka State Climate Change Strategic Knowledge Portal (<http://skccempri.karnataka.gov.in>) developed under DST-SPLICE project ongoing at EMPRI. The information on butterflies across regions, seasons and years along with the climate data will help to monitor the biodiversity of butterflies in Karnataka and correlate with climate change.



BIA



BIA app - QR Code (Scan the image to download the app)



Dashboard for monitoring the butterflies

- The link for the BIA first version is <http://skccempri.karnataka.gov.in/images/BIA/BIA.apk>
- OR Scan the BIA app - QR Code for downloading the APP.
- **Launching of the Butterfly Identification App was done by Shri R. Shankar, Minister of state, Forest, Ecology and Environment on 24th July 2018.** The development of BIA android app (second version) is under process and will be hosted in Google Play Store.

b. Long term monitoring studies on climate change through Permanent Preservation Plots (PPPs):

Under the DST Project, 3 one hectare Permanent Preservation plots (PPPs) (100mX100m) were established, two in Bannerghatta National Park (BNP) (one in Thale woodhouse plot in moist deciduous forest area and another in Bugurikallu plot in dry forest area) and one in Doresanipalya Reserve forest (DRF). Enumeration of tree Species in three PPPs (Thale woodhouse Plot, Bugurikallu plot at BNP and Doresanipalya Forest Reserve) is completed. All woody individuals >1 cm dbh (diameter at breast height) were tagged, identified to species level and measured. The **Thalewood house PPP** has 1586 individuals above 1cm dbh belonging to 68 woody species of trees, shrubs and lianas. The most dominant species are *Olea dioica*, a tree with 292 individuals followed by *Cipadessa baccifera*, a shrub (154 individuals) and *Ziziphus oenoplia*, a liana (140 individuals). The data for Thalewoodhouse plot is reported in Annual report 2017-18.

Bugurikallu PPP has 2165 individuals belonging to 76 species of trees, shrubs and lianas.

List of Species in the Bugurikallu plot					
Species name	Individuals	Species name	Individuals	Species name	Individuals
TREES		Semecarpus anacardium	3	Breynia vitis-idaea	23
Anogeissus latifolia	249	Stereospermum suaveolens	3	Dodonaea viscosa	18
Erythroxylum monogynum	238	Vitex altissima	3	Scutia myrtina	17
Ochna obtusata	125	Ziziphus xylopyrus	3	Canthium parviflorum	16
Acacia chundra	96	Bridelia retusa	2	Randia dumetorum	14
Canthium dicoccum	95	Cassine glauca	2	Cassia montana	4
Diospyros melanoxydon	52	Shorea roxburghii	2	Flueggea leucopyrus	1
Grewia orbiculata	50	Soymida febrifuga	2	Grewia hirsuta	1
Holarrhena antidysenterica	28	Terminalia paniculata	2	Carmona retusa	1
Cassia fistula	18	Eucalyptus globulus	1	Cipadessa baccifera	1
Polyalthia cerasoides	15	Ficus benghalensis	1	LIANA/CLIMBERS	
Dalbergia lanceolaria	12	Ficus microcarpa	1	Pterolobium hexapetalum	169
Lagerstroemia parviflora	12	Grewia asiatica	1	Jasminum sp.	88
Buchanania axillaris	11	Memecylon umbellatum	1	Ziziphus oenopolia	37
Cassia siamea	11	Wrightia tinctoria	1	Acacia concinna	10
Madhuca indica	8	Ziziphus rugosa	1	Toddalia asiatica	8
Pterocarpus marsupium	8	Gardenia turgida	1	Celastrus paniculatus	5
Terminalia chebula	8	Phyllanthus indofischeri	1	Gymnema sylvestre	4
Bauhinia racemosa	6	Rapanea wightiana	1	Cansjera rheedei	3
Premna tomentosa	6	Scolopia crenata	1	Capparis sepiaria	3
Albizia chinensis	5	Acacia leucophloea	1	Argyreia cuneata	2
Diospyros montana	5	Atalantia monophylla	1	Decalepis hamiltonii	1
Strychnos potatorum	5	SHRUBS		Secamone emetica	1
Albizia amara	4	Ixora nigricans	333	Ventilago maderaspatana	1
Naringi crenulata	3	Maytenus emarginata	130	BAMBOO	
Polyalthia coffeoides	3	Tarennia asiatica	116	Dendrocalamus strictus	15
Santalum album	3	Flacourtia indica	32		

The most dominant species are *Ixora nigricans* (Rubiaceae) with 325 individuals that accounts for 13.54% of abundance followed by *Anogeissus latifolia* (Combretaceae) (248 individuals and 10.33% abundance), *Erythroxylum monogynum* (Erythroxylaceae) (227 individuals and 9.45% abundance) and *Pterolobium hexapetalum* (Leguminosae) (169 individuals and 8.89% abundance).

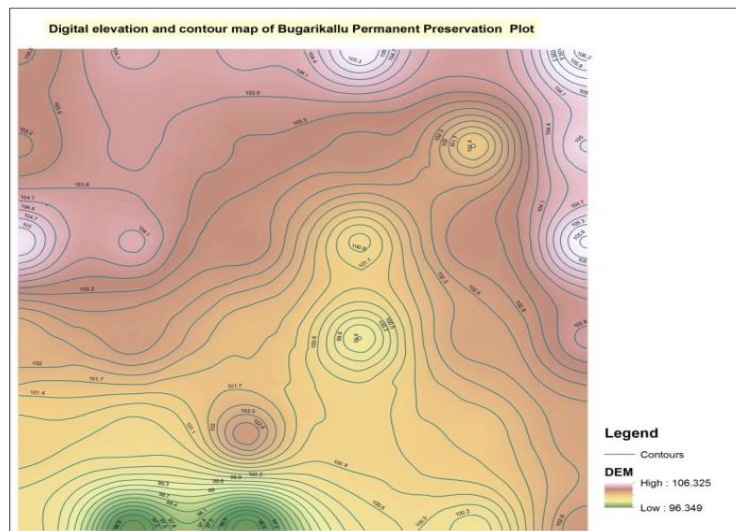


The **Important Value Index (IVI)** in the Bugurikallu PPP was found to be more for *Anogeissus latifolia* (33.73) followed by *Ixora nigricans* (29.9). The endangered species, *Decalepis hamiltonii* and a vulnerable species, *Santalum album* are also reported.

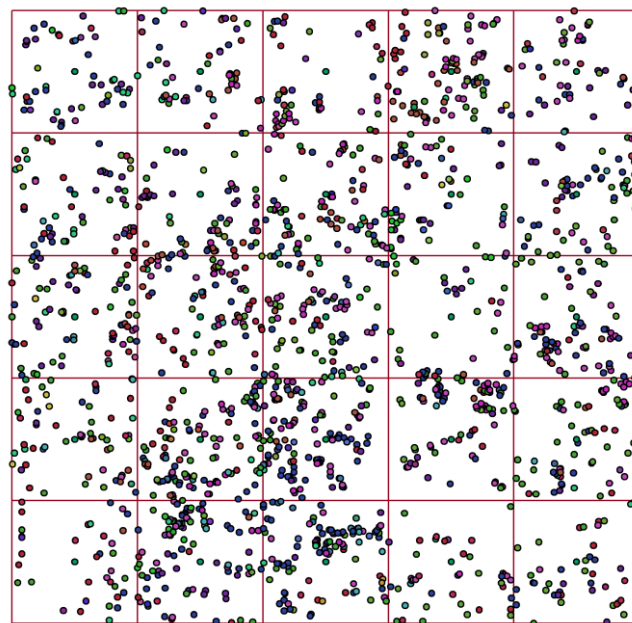
Bugurikallu plot		
Sr. No.	Name of Species	IVI
1	<i>Anogeissus latifolia</i>	33.48
2	<i>Ixora nigricans</i>	30.23
3	<i>Erythroxylum monogynum</i>	25.29
4	<i>Acacia chundra</i>	23.94
5	<i>Pterolobium hexapetalum</i>	13.16
6	<i>Ochna obtusata</i>	12.51
7	<i>Maytenus emarginata</i>	11.96
8	<i>Tarenna asiatica</i>	9.9
9	<i>Diospyros melanoxylon</i>	9.81
10	<i>Jasminum sp.</i>	8.50

Calculation of Digital Elevation Model (DEM) of Bugarikallu.

Using surface interpolation method available in 3D analyst tool in ArcGIS software, contour line map was generated as shown in figure. Watersheds, also known as basins or catchments are physically delineated by the area upstream from a specified outlet point. Watersheds can be delineated digitally in a GIS environment. Blue line in the figure represents the basins of the plot. The Contour function generates contour lines by joining points with the same elevation from a raster elevation dataset. The contours are isolines created as rasters for visualization.



Species Distribution map of Bhugarikallu Permanant Preservation Plot



Spatial distribution of all individual species in Bugarikallu

Doresanipalya PPP has 2088 individuals. The most dominant species are *Santalum album* followed by *Shorea roxburghii* and *Ziziphus oenoplea*. The data is under verification and calculation for spatial distribution of species. The three PPPs will further be monitored for recruitment, mortality, and growth of trees in relation to climatic parameters.

The following research experiments have been initiated in the permanent preservation plots of BNP and DRF.

- Estimation of Photosynthetic potential/capacity to sequester carbon of some important tree species using Infrared Gas analyser (IRGA)
- Phenological studies on selected tree species in relation to climatic factors
- Estimation of Carbon stock in permanent preservation plots
- Microbiological studies in forest soils of PPPs

- Nutrient analysis of soil and plant samples using Carbon Nitrogen Sulphur (CHNSA) analyser
- c. **Collection of weather data:** To understand the response of vegetation to natural variability in climate, two automatic weather stations in BNP and DRF are installed with the support of Karnataka State Natural Disaster Monitoring Centre (KSNDMC) and the data obtained is maintained and periodically sent to EMPRI via ftp. Weather data namely temperature, rainfall, relative humidity, wind speed, wind direction, solar radiation & sunshine data can be accessed once every 15 minute.



Automatic Weather station in BNP



PPP in BNP .

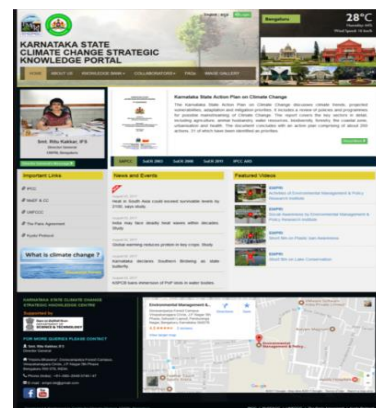
iii. Other Activities

1. Development of **Karnataka State Climate Change Strategic knowledge portal (KSCCSKP)** for dissemination of information on climate change pertaining to the state of Karnataka

A web-portal named “Karnataka State Climate Change Strategic knowledge portal” (KSCCSKP) has been developed to disseminate climate change and related activities in an interactive and efficient way throughout the state of Karnataka and hosted in Karnataka State Data Centre (<http://skccempri.karnataka.gov.in>).

The important features include

1. Interlinking with all climate change knowledge institutions (Indian Institute of Science, Foundation for Revitalisation of Local Health Traditions (FRLHT), Institute for Social and Economic Change (ISEC), The Energy resources institute (TERI), Public Affairs Centre (PAC) etc.)
2. Important publications/reports from EMPRI viz., Karnataka State Action Plan on Climate Change, State Of the Environment Report (2015, 2011, 2008 & 2003), Climate change: Challenges and Solutions and also other publications as given below on Climate Change from MoU institutions, Govt., and other agencies



- Implementation of SAPCC: A Green Growth Approach
- Quality of Life for All: A Sustainable Development Framework for India's Climate Policy
- Interim Report: A Sustainable Development Framework for India's Climate Policy
- Transitioning towards a Green Economy in Karnataka

- Project Report: Climate Change Vulnerability and Adaptation in South Asia
 - Final Report: Expert Group on Low Carbon Strategies for Inclusive Growth (2014)
 - Report: Climate Change studies
 - Interim Report: Planning Commission Government of India Low Carbon Strategies for Inclusive Growth (2011)
 - Greenhouse Gas Emissions Inventory & Mitigation Study for Karnataka
3. Featured videos include various activities & social awareness by EMPRI, short film on plastic ban awareness & lake conservation, quiz programme on climate change conducted by EMPRI, Dura Darshan Chandana programme, "Hello Geleyare", about awareness on plastic ban, and national seminars on climate change conducted by EMPRI.
 4. Important national and international news & events related to climate change.
 5. Frequently Asked Question (FAQs) with answers on climate change.
 6. Dashboards- 1. Discussion forum for interacting with the domain experts, researchers, students and public and 2. Dashboard for monitoring the butterflies in Bengaluru/others districts in Karnataka
 7. As per the guidelines of the Karnataka State Data Centre (KSDC) the web applications (WordPress Discussion Forum and Butterfly Monitoring Programme – Dashboard) to be hosted in the server went through vulnerability assessment by CERT-In certified security auditors. All the vulnerabilities identified by the auditors were patched using Open Web Application Security Project (OWASP) standard and is now ready to be hosted in KSDC.

2. Coordination with government departments for developing projects under national/international funding:

As directed by MoEF&CC, Government of India (GoI), EMPRI is also coordinating the state departments to prepare and submit proposals under National Adaptation Fund for climate change (NAFCC).

A. Monitoring the NAFCC Project undertaken by AH&VS

A project entitled, '**Conservation and Management of Indigenous Cattle and Sheep in the Wake of Climate Change in Karnataka**' sanctioned in 2016 for Rs.24, 21, 52,632/- by MoEF & CC, New Delhi is being undertaken by Karnataka livestock Development Agency (KLDA), Animal Husbandry and Veterinary Services (AH&VS). Out of the total sanctioned amount of Rs.44 crores (2016-17) an amount of Rs. 388.93 lakh has been spent upto 30-03-2019. The activities under progress are as follows.

1. Conservation & revitalization of local cattle breeds (Malnad gidda, Deoni, Hallikar) through propagation of pure semen.

- 1) Baseline survey conducted in 30 villages & Genomic studies are completed.
- 2) 902 FPR Hallikar cows identified Morphometric analysis of 890 animals completed.
- 3) Installation of Solar panels is completed and other components is under progress in the farms

2. Conservation & revitalization of local sheep breeds (Bandur, Bellary and Deccani) through propagation of pure breed ram lambs for breeding purpose.

- 1) Sheep have been identified and procured from farmers.

- 2) Construction of three sheep shed completed.
- 3) 208 sheep each of Bannur, Deccani & Bellary breed are procured & maintained.
- 4) Solar panels are installed in the farms and other components are under progress.
Rain water harvesting tanks have been provided

3. Enhancing and managing the production of feed and fodder for livestock

1. E-Tender for procurement of chaff cutters is finalized. Chaff cutters will be distributed to the farmers.
2. 1 silage unit per taluk in selected 104 taluks having capacity of 1-5 tonnes would be established and it is under progress.

B. New NAFCC Fund projects submitted for consideration.

As per the 5th SLSC approval, the following projects are submitted to National Bank for Agriculture and Rural Development (NABARD) for review and evaluation for NAFCC funding.

1. **“Karnataka Farmer Tree Support Project (for Bidar and Chitradurga Districts)”** by Karnataka Forest department
2. **“Karnataka State Action plan for Climate Change and Human Health (KSAPCCHH)”** by Department of Health and Family Welfare
3. **“Bio-fuel Programme at KSRTC-blending of biodiesel with Diesel”** and **“Construction, Supply, Installation, commissioning, Operation and Maintenance of 20K LD and capacity effluent treatment plants in KSRTC bus depots at 40 locations”** by Karnataka Road Transport Corporation (KSRTC)
4. **“Drought Monitoring forecasting and Agro-Meteorological advisories for adaptation to climate smart agriculture at Micro Level in Karnataka”** by KSNDMC.

3. Preparation of report on Green Budget

As per the instructions of ACS, FEE, a green budget report was prepared by EMPRI. The green budget report for the State of Karnataka consists of sectoral assessment of ten departments and budget allocation for the financial year 2017-18, the proposed recommendations for the departments which do not have green budget component. The annexures contain the NDC targets, State Action Plan on Climate Change (SAPCC) National Action Plan on Climate Change (NAPCC) action points, green schemes/policies existing in some major departments of GoK, objectives of the schemes, budget allocation for the year 2017-18 and additional points (schemes that are implemented in other states).

4. Revision of Karnataka State Action Plan on Climate Change (KSAPCC):

The proposal for revision of the state action plan on climate change was prepared based on the guidelines of MoEF&CC. The proposal consists of challenges, achievements, gaps and action points with respect to each of the **Nationally Determined Contribution (NDC)** targets. The proposal was submitted to MoEF&CC through the FEE department in August, 2018.

5. Seminar/ workshops organised by centre for climate change

- I. A national seminar entitled, **“NATIONAL SEMINAR ON CLIMATE CHANGE: ENVIRONMENTAL MONITORING AND MANAGEMENT FOR BUILDING CLIMATE RESILIENCE (NSCC 2019) ”** was organised by Centre for Climate Change in EMPRI under the chairmanship of DG, EMPRI and Dr O.K. Remadevi as the organising secretary. The seminar was

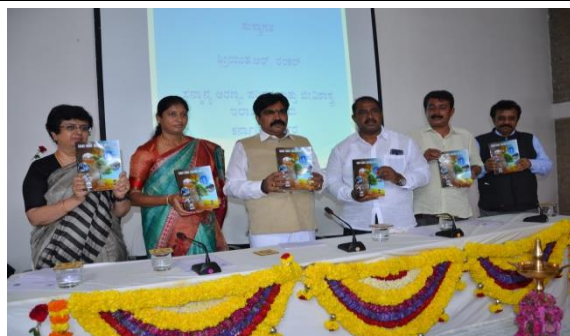
held at EMPRI on 24 & 25th of January 2019 and was programmed with five technical sessions and a poster session to cover diverse aspects on diversity, ecosystems and climate change, monitoring the adaptation and mitigation strategies, mitigation through forests, wood and bamboo and policy and management issues. About 150 participants attended the seminar and more than 60 papers were presented. Dr K.H. Vinayakumar, Dr. O K Remadevi and Mr Kiranraddi participated and presented papers during the National level seminar on Climate Change

NATIONAL SEMINAR ON CLIMATE CHANGE: NSCC 2019 - Environmental Monitoring and Management for Building Climate Resilience- held during January 24th-25th 2019 at EMPRI, Bangalore .



II. A **workshop on BIA (BUTTERFLY IDENTIFICATION APP)** to NGC teachers was conducted on 5th feb 2019. BIA App has been developed for assistance in field identification of butterflies for the BUTTERFLY MONITORING PROGRAM IN KARNATAKA. Around 200 teachers from different BGC schools in Bengaluru participated in the workshop.

CLIMATE CHANGE LABORATORY with 29 equipments procured through DST SPLICE project was inaugurated on 24th July 2018 by Shri R. Shankar, Minister of state, Forest, Ecology and Environment



Release of the book on *Climate Change :Challenges and Solutions* on 24.07.2018



Launching the *Butterfly Identification App (BIA)* on 24.07.2018

2.4. Outreach Activities

2.4.1. Environmental Information System (ENVIS) Centre

The Environmental Information System (ENVIS) of Karnataka with the subject area “State of Environment and Related issues” is operating in Karnataka since December 2002. It was established as ENVIS centre on 1st January 2009. The ENVIS scheme was revamped in April, 2017 with addition of new initiatives to the previously existing one until March, 2020. The ENVIS centre Karnataka carried out the activities in the following areas. The details are as below:

i. ENVIS Website:

The ENVIS centre Karnataka has a dedicated website on the National Informatics Centre (NIC) Content Management System (CMS) portal - www.karenvis.nic.in. The contents of the website is published and managed by the ENVIS centre Karnataka as per the guidelines given by Ministry of Environment Forest & Climate Change (MoEF&CC). Recently, the website was redesigned to make information more accessible with more attractive features.



ii. Indian State Level Basic Environmental Information Database (ISBEID);

The Indian State-Level Basic Environmental Information Database (ISBEID) is an ambitious programme of the Ministry of Environment and Forests, Government of India (GoI) in order to make environmental status easily available to researchers, students, policy makers, and the general public at large. The data have been classified into 17 modules/sectors. Data for all these sectors have been collected either in full or in partial (year wise). For all the 17 modules and sub-modules data has been collected & uploaded on an average of 10-12 years or more. Number of entries done: **27,147** (April 2018 to March 2019)

iii. ENVIS Newsletter ‘PARISARA’:

ENVIS centre has been publishing a quarterly newsletter ‘PARISARA’. Centre has published 43 issues till 2017, issue 44 on Geographical Indications of Karnataka, issue 45 on Biodiversity Hotspots, issue 46 on Green Transportation and Issue 47 on Watershed Management for the year 2017-2018. Available for download on WWW.KARENVIS.NIC.IN



iv. State of Environment Report (SoER)- 2015 Karnataka

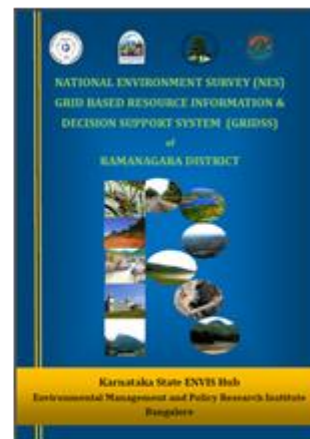
SoER is a Ministry of Environment, Forest and Climate Change (MoEF&CC), GoI funded project to Environmental Management and Policy Research Institute (EMPRI) in March, 2017. The objective of the status of the environment report was to understand and assess the cause of environmental problems to initiate policies and programme for maintaining the ecological balance. EMPRI has prepared the report involving 16 chapters with the help of multidisciplinary team of subject experts. SoER-



2015 Book released by Smt. K. Ratna Prabha IAS., Chief Secretary, Government of Karnataka(GoK) on 29.06.2018.

v. National Environment Survey (NES) - Grid Based Resource Information Decision Support System (GRIDSS)

Under the NES GRIDSS scheme for Sustainable Management of Natural Resources, Karnataka ENVIS hub (EMPRI) has selected Ramanagara District for case study. District was divided into grids of 9 km x 9 km. Secondary data was collected from Karnataka State Remote Sensing Applications centre (KSRSAC). Thematic maps were created for 19 parameters and also LULC change detection analysis for 2002 and 2015 were done. The NES GRIDSS of Ramanagara Report was released on 02.04.2019 by Secretary, MoEF&CC, New Delhi.



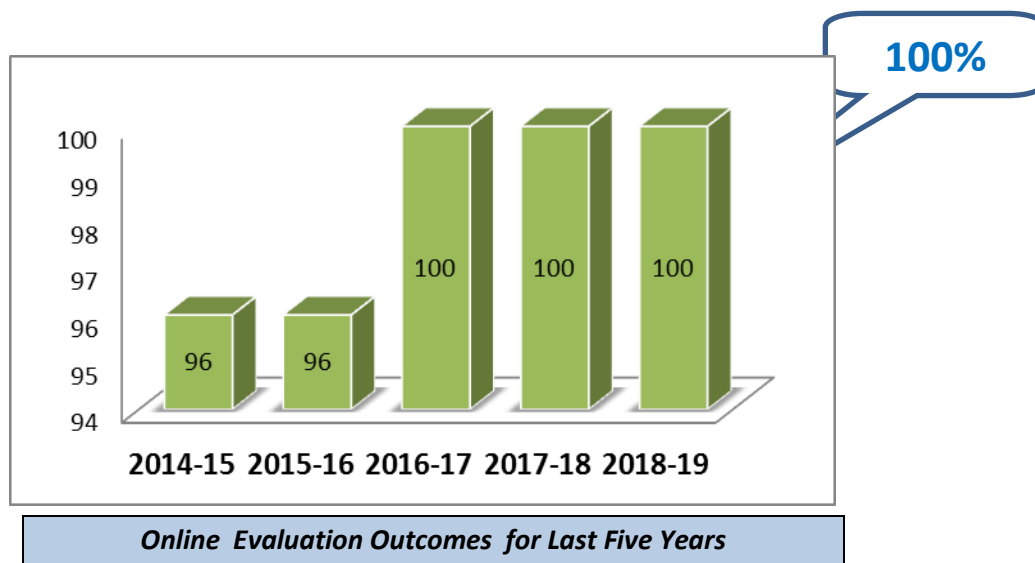
vi. EMPRI Library:

The library is a documented repository of information and it has a collection of over 2800 books. The library also receives more than 27 state/national journals and newsletters covering diverse areas of environment.

Library resources

- EMPRI Library has more than **170** CD-ROM
- Databases ; 04 Newspapers (1 Kannada, 3 English) subscriptions and Toposheets maps- **650**.
- Subscription to the "The Indian Forester" Journal (TIF) and archival CD-ROM database (from **1875**)
- EMPRI library has been using the **KOHA** open source software (OSS) for Library automation. The Library has automated 2800 books which includes reference books, text books, reports etc.,

Karnataka State ENVIS Online Performance Report



vii. Green Skill Development Programme(GSDP) Courses

- 1. Green Skill Development Programme (GSDP) on Valuation of Ecosystems Goods & Services and Green Gross Domestic Product(GDP) :** GSDP Course Module on VALUATION OF ECOSYSTEM GOODS AND SERVICES AND GREEN GDP Organised by ENVIS Centre – Western Ghats Biodiversity and Ecology, CES, Indian Institute of Science (IISc) & ENVIS Centre, EMPRI, Bangalore. During the period 5th august - 19th august 2018 for a duration of 15 days.
- 2. GREEN SKILL DEVELOPMENT PROGRAMME (GSDP)course on Pollution Monitoring: Air & Water :**Central Pollution Control Board as entrusted the work of conducting the GSDP training programme on “Pollution Monitoring: Air & Water” to the students having diploma in Engineering or graduate in science for period of one month to EMPRI. This course was conducted between October 22nd to November 30th 2018 for a duration of 33 days with 260 hrs at EMPRI. Outcome: Those who have attended the GSDP programme are finding opportunities of employment. One of them got placement in EMPRI and few others in other private organizations.

viii. Other Activities of ENVIS Centre:

1. World Environment day
2. International Ozone Day
3. Swachh Hi Seva 2018
4. Environmental Monitoring and Management for Building Climate Resilience
5. World Wetlands Day Celebration, Date: 2nd February 2019,
6. “Clean Air”, “Cleanliness Drive” and “Bring Back Waste from Nature Campaign”

The centre has created knowledge products and the data bases

- **Database updated on Karenvis Website**
 - Freshwater fishes of Karnataka
 - District wise Thematic Maps of Karnataka

- Agriculture Biodiversity of Karnataka
 - 9*9km Grid Maps of Karnataka
 - Map of LTL, HTL and CRZ Boundary for different Estuaries in Karnataka
 - Breed wise buffalo
 - Schemes of GOI and GOK updated.
 - State wise Solar installed capacity
- **Posters / leaflets prepared**
- Deforestation
 - Sandalwood and it Medicinal Properties
 - Interior Decoration
 - Indoor Plants to Purify Air
 - International Day for Biological Diversity
 - World No Tobacco Day
 - Beat Plastic Pollution
 - International Yoga day
 - World Ocean Day
 - World Ozone Day
 - Diwali Eco Poster
 - Eco Friendly Ganesha Poster
 - Plastic Ban Poster
 - World Wetlands Day
 - World Wildlife Day
 - World Sparrow Day

2.4.2. National Green Corps (NGC):

National Green Corps is a national school programme of Ministry of Environment Forests and Climate Change (MoEF&CC), Government of India (GoI) launched in 2001. The main objective of the scheme is to establish "National Green Army" by establishing Eco clubs in schools all over the nation to spread awareness on environment and carry out action based programmes for protection and improvement of environment. Environmental Management and Policy Research Institute (EMPRI) is serving as Nodal Agency for NGC in Karnataka to implement the programme since January 2009.

Sl no	Category of School	No. of Eco-clubs
1	Government Higher Primary School & High School	5994
2	Government Aided Higher Primary School & High School	1404
	Total	7398

I. NGC Programme during 2018-19:

For the financial year 2018-19, MoEF&CC had approved sanction of grants- in-aid of Rs 3,65,19,022/- (Three crore sixty five lakh nineteen thousand and twenty two only) under National Green Corps Programme vide MoEF & CC sanction order No.3/140/2001-EE(Vol-1) dat-

ed 19th November, 2018. Rs 5000/ financial assistance to 7400 eco clubs with the ceiling of 250 eco clubs per district was received for supporting the activities of Eco clubs. On receipt of funds from Ministry of Environment Forests and Climate Change (MoEF&CC), Government of India (GoI), EMPRI has released funds directly in to the bank accounts of 7398 Eco club schools of 34 districts in Karnataka State.

II. World Environment Day Celebration

EMPRI has organized following programmes for world environment day celebration.

a) Envithon (Mini-Marathon) and Cyclothon

On the occasion of World Environment Day celebration, EMPRI has organized the Mini-Marathon for 5Km and Cyclothon for 10Km on 3rd June 2018 by involving school children to spread the message of theme of World Environment Day 2018 “Beat plastic pollution” in Cubban Park, Bengaluru. Around 3141 participants from state and central government offices, Non-Government Organisations, Indian army, School Children, Volunteers and walkers participated in the event.



Flag off of Envithon



Participants of Mini marathon



Street play on plastic pollution during Envithon

b. Pennar River front cleaning activity

The Pennar River front cleaning in Nandi Hill (birth place of Pennar River) was arranged on 4th June 2018. Around 460 participants including school children, teachers, EMPRI staff, ITBP (Indo-Tibetan Border Police), CRPF (Central Reserve Police Force), CPCB (Central Pollution Control Board), Department of Education, tourists and public in the Nandi Hill area participated. Plastic wastes such as Plastic water bottles, plastic wrappers, plastic bags, plastic plates and plastic cups were collected Pennar river catchment area and handed over to the CCMC (Chikkaballapur City Municipal Council) through the Department of Horticulture, Nandi Hill Division, Government of Karnataka (GOK).



Cleaning of Pennar river front by CRPF



Dr.K.H.Vinaya Kumar, CCF, EMPRI addressing school children participants to refuse one time use plastics to save the environment



School children at Pennar River front cleaning in Nandi Hills

c. Kapila River front cleaning activity

The Kapila River front cleaning in Nanjangud (tributary of Cauvery River) was done on 12th June 2018. Around 505 participants participated in the event including school children, teachers, EMPRI staff, CISF (Central Industrial Security Force), Department of Forest, Nanjangud CMC (City Municipal Council), journalists, MoEF&CC staff, South Zone office from Bengaluru, KSPCB of Mysuru Regional office, Department of Education and public participated. Plastic wastes such as Plastic water bottles, plastic wrappers, plastic bags, plastic plates and plastic cups were collected from Kapila River front and handed over to the Nanjangud CMC (City Municipal Council).



Plastic pollutants collected from Kapila River (Srikantheshwara temple bathing spot)



One of the school participants of Kapila River-front briefing Beat Plastic Pollution to DD TV Channel

d. Beach cleaning activity

MoEF&CC had organised cleaning of beaches and river stretches in the country under the tagline of “Beat Plastic Pollution”. In this regard, College of Fisheries, Mangaluru in collaboration with District administration of Dakshina kannada and Udupi District organized beach cleaning activity. The beach cleaning activities were carried out in all the ten stretches of beaches across Dakshina Kannada. They are Panumbour, Thannirubhavi, Bengre, Chota Bengre, Talapady-Someshwar, . Surathkal –Hosabettu, Kulai-Chitrapura, Ullal, Sasihithlu –Mukka. The beach cleaning activities were also carried out in all the five stretches of beaches across Udupi district. They are Padubidri, Kaup, Malpe, Marvanthe and Koteshwara Event was emphasized for a greater awareness about menace of plastic pollution and its effects on marine life. Event was held from 1st june to 10th june 2018 to clean plastic wastage to create awareness against usage of plastic, affecting the environment in participation with different government departments, Pollution control board, Tourism department, Regional office of Environment department, eco clubs, NGO’s and local Volunteers and schools and college Children.

All the participants of beach cleaning programme were addressed and awareness was created regarding effect of plastic pollution on life and health of individuals and animals. The participants were advised to refuse or reuse and recycle the single use plastic. They were informed to use cloth bags, steel cups and plates in day today life, pamphlet were also issued regarding the do’s and don’ts of the plastic.



Cleaning activities at Beaches

III. World Ozone Day 2018

EMPRI has celebrated World Ozone Day on 20th September 2018. Drama Competition, Drawing Competition and Slogan Writing Competition were conducted for school children. The event commenced with the inaugural session Chaired by Smt Ritu Kakkar, IFS, Director General of EMPRI. Key note speech on “Importance of Ozone Day” was done by Prof. J. Srinivasan, Scientist, Divecha Centre for Climate Change, Indian Institute of Science, Bangalore. The celebration concluded with distribution of prizes to Competition winners.



Inauguration Function



School children in Drama competition

IV. Swachhata Hi Seva

As a precursor to the 150th birth anniversary celebrations of Mahatma Gandhi and in the run up to the 4th anniversary of Swachh Bharat Mission, it has been decided to observe Swachhata Hi Seva 2018, aims at accelerating the jan andolan for realizing the vision of a clean India, further reinforcing the that 'Sanitation is everyone's business'. In this regards, EMPRI has organised the Swachhata campaign on October 1st, 2018 in and around Doresanipalya Reserve Forest Campus. Green pledge on 'Cleanliness is Service' was given to the EMPRI staff by Smt. Ritu Kakkar, IFS, Director General, EMPRI. The waste materials collected during cleanliness drive was handed over to the BBMP for the disposal.



Green pledge taken by the EMPRI staff



Swachhata campaign at Doresanipalya Reserve Forest Campus.

V. World Wetlands Day 2019

World Wetlands Day was celebrated on 2nd February 2019 to commemorate the adoption of "Ramsar Convention on Wetlands" in 1971 for conservation of wetland at the global level. Puttenahalli Government High School students participated and various activities were conducted as part of wetland day celebration. Students were taken to a nearby wetland, Puttenahalli Lake to create awareness on wetland. Sessions on Importance of wetlands were organized. Naturalist, Sri Prasad conducted Bird identification session to the participants. Quiz Competition was conducted for the Children and day was concluded with distribution of Prizes in the form of Books and Certificates for the winners.



Jatha towards Puttenahalli Lake



Birds Identification at Puttenahalli Lake



School Children in Quiz competition

VI. Green Good Deeds programmes

1) Plantation drive

Shri. R. Shankar, Hon`ble minister for Forest, Ecology and Environment, Government of Karnataka inaugurated climate change laboratory at EMPRI on 24th July 2018. During his visit, Plantation drive was initiated in the premises of Doresanipalya Reserve Forest Campus. EMPRI has distributed saplings to eco club schools as a part of green good deeds initiative and which aims to inculcate the planting culture among school students. Details of Sapling distribution as detailed below;

- Bangalore South zone – 14 eco club schools, 10 saplings for each school-total 140 saplings
- Bangalore North zone – 10 eco club schools 10 saplings for each school- total 100 saplings



Plantation drive at EMPRI by Shri. R. Shankar, Hon`ble minister for Forest, Ecology and Environment, GoK



Plantation drive initiated by EMPRI at Eco-Club schools

2) Plastic-free Campaign at Bannerghatta National Park, Bangalore

EMPRI has carried out the Plastic Ban Awareness drive at Bannerghatta National Park, Bangalore by coordinating with NGOs. During the course of these campaigns, plastic wastes were collected in and around Bannerghatta National Park and handed over to the BBMP. EMPRI has also created awareness on issues such as solid waste management, prevention of littering and cleanliness of the park and surrounding areas.

More than 100 participants from CRPF Bangalore, Volunteers, School and college students have participated in Plastic free Campaign. Banned Plastics & Alternatives of plastic Handouts and Plastic Muktha Karnataka brochure were distributed at the event.



Jatha by the participants



Cleaning activity by the participants

3) Garbage Management

EMPRI has organised training programmes on Garbage Management for the various departments and groups. The Eco-Club Schools in the State have actively involved in Garbage management by segregating wet & dry waste in different bins.



Herga Vittala Shetty Govt. High School, Kuchoor, Udupi District



Mukthi Prakash High School, Neerude, Dakshina kannada District

4) Awareness on Plastic Ban

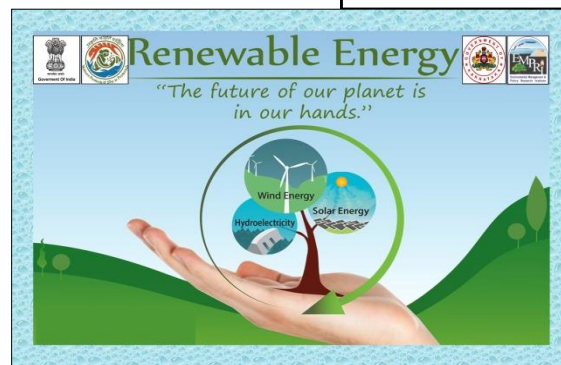
EMPRI has distributed hand-outs and posters on Plastic ban to create awareness on Plastic Ban notification-2016 by participating in Dasara Exhibition, Mysore. Stall was open to public from 10th October 2018 to January 15th 2019. Handouts on Banned plastic items and environment friendly alternate items and were distributed to public. Eco club Schools have also organised various programmes to create awareness on Renewable Energy.



GHS, Malikawada, Chikodi District



GHS, Holekoppa, Chikkamanagalore District



Renewable Energy Hand-outs distributed at Dasara Exhibition, Mysore

5) Air Pollution Mitigation and Celebration of Harit Diwali

EMPRI has distributed saplings, Earthen Diyas, Harit Diwali-Swasth Diwali awareness Handouts to the Eco-Club schools. The Harit Diwali – Swasth Diwali Pledge was widely circulated to the schools/colleges and other educational institutions and administration was requested to administer the said Pledge during their school assembly up to Diwali. EMPRI also visited 31 Eco-Club schools and requested the students to take the “Harit Diwali- Swasth Diwali awareness pledge in Kannada. EMPRI has also distributed Cloth Bags to Eco club schools to spread the awareness on plastic pollution. Schools premises cleaning programme was undertaken.

The Eco-Club Schools have actively participated in this celebration by taking up Harit Diwali – Swasth Diwali Pledge, Plantation drive, jathas, Cultural programme, Lighting of Diyas in the Schools. Harit Diwali – Swasth Diwali awareness and Harit Diwali – Swasth Diwali ‘Handouts’ were distributed to the Eco-Club schools students.



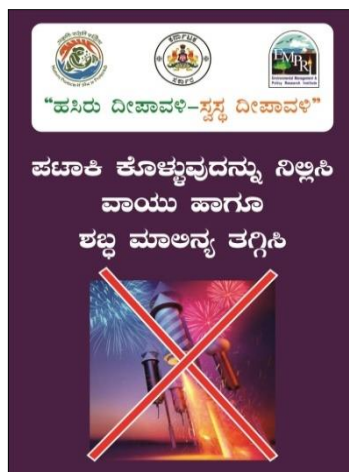
Distribution of saplings to the Eco club schools



Distribution of Earthen Diyas to the Eco club schools



Awareness pledge taken By Eco club School Students



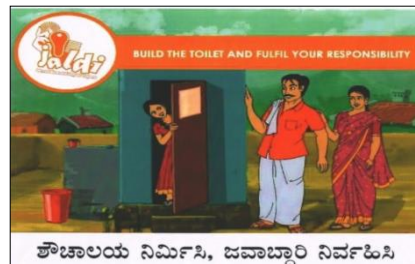
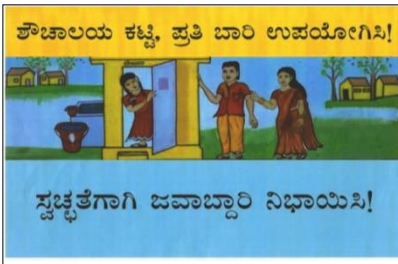
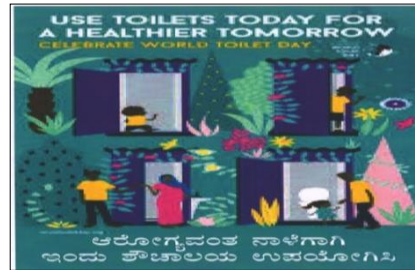
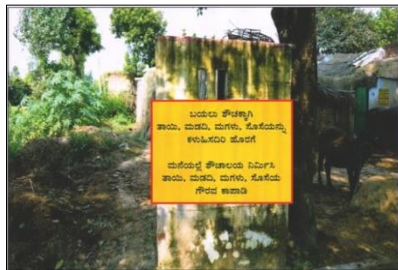
Handouts Distributed to Eco club Schools

6) Awareness on Open Defecation Free

EMPRI has distributed 'Handouts' on "Open Defecation Free" at Dasara Exhibition Mysore to spread the awareness on Open Defecation free campaign by setting up a Stall. Stall was open to public from 10th October 2018 to January 15th 2019. EMPRI has distributed Hand-outs on "Open Defecation Free" to 24 Eco club schools of Bangalore south and North zones. Eco club schools children have also promoted this campaign through various activities like Jatha, drama, etc



Jatha to create awareness on Open defecation free taken up by Eco club Schools students



Open Defecation Free Handouts Distributed at Dasara Exhibition, Mysore

7) Hygiene and Sanitation

EMPRI has distributed hand-outs and posters on Plastic ban to create awareness on Plastic Ban notification-2016 and Handouts' on hygiene and sanitation by participating in Dasara Exhibition, Mysore. Exhibition Stall was open to public from 10th October 2018 to January 15th 2019. Eco-Club schools also have taken up various activities to teach the importance of hygiene and sanitation to students.



KHPS. Shivanuru. Chikodi District

8) Plastic-free schools/colleges

Focusing on the “Beat Plastic Pollution” theme of world environment day 2018, Eco-Club schools of Karnataka have taken up various activities like Cleaning activities, plastic free schools, Jathas, Street plays etc. to spread the awareness on the usage & harmful effect of plastic on Environment.

EMPRI has organised Plastic-free campaign through various Programmes such as Cleaning campaigns, Jathas, Trainings, Mini Marathon, River & Beach cleaning activities. Empri has distributed Plastic ban Handouts to Eco-Club schools and Plastic Muktha Karnataka brochure and Cloth bags to various departments, groups and Eco-Club schools.



Government High School, Suntikoppa,
Kodagu District



Govt. Pre University college for Girls,
Udupi District

VII. Swachata Action Plan

- Cleanliness drive, Bring back waste from nature, Clean Air Campaign:** EMPRI has organised Cleanliness drive, Bring back waste from nature, Clean Air Campaign on 15th february 2019 at Doresanipalya Forest Campus, Bengaluru. The event was successfully carried with the participation of MoEF & CC regional office, Bangalore staff, BBMP workers and EMPRI Staff. T-shirts and caps were distributed to all the participants. Jatha was carried at Doresanipalya forest campus. Cleaning of Doresanipalya forest area was taken up as part of Cleanliness drive. Personnel from Media also supported the campaign.



Jatha on the street by the participants



Cleanliness drive at Doresanipalya Forest Campus

- **Plantation drive:** EMPRI has organised Plantation drive at Doresanipalya Campus as well as in Eco club Schools to promote Plantation activities.
- **Environmental Film festival:** Under Swachata Action plan, EMPRI has organised environmental film festival on 28th February 2019 in Karnataka state pollution control board premise. Mr. Vijay kumar gogi, IFS Principal Secretary, Environment and Ecology department, Government of Karnataka, Mr. Manoj Kumar, IFS, Member Secretary, Karnataka state pollution control board were the guest of honour along with Mrs Ritu Kakkar, IFS Director general, EMPRI, Mr. Mahesh B Shiroom, IFS Director, EMPRI. Dr Vinay Kumar K. H, IFS Director, Reseach,EMPRI. Staff of EMPRI, KSPCB and interested public participated in the event. Various short films on environmental related issues were shown to the audience and discussions were held on the theme of the films. Participants discussed on the concept and ideas of the films and shared their opinions. Films on global issues like water scarcity and importance of preserving water, water pollution were much appreciated by the audience.

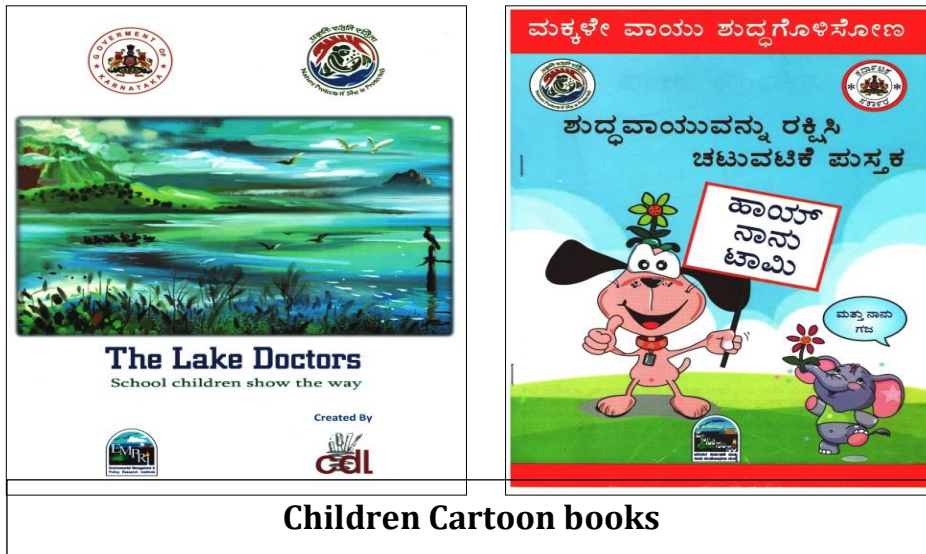


- **Awareness on Open Defecation Free:** EMPRI and Eco Clubs have promoted this campaign by organising various activities for the public and students.
- **River and Beach Cleaning Activities:** Cleaning of Pennar, Kapila river and Beaches in Dakshina Kannada and Udupi district carried out from 1st June 2019 to 10th June 2019.
- **Awareness on Biodiversity to Eco club school in charge teachers:** EMPRI has organised a training programme to create awareness on Bio-Diversity for Eco club teachers. 166 Eco-club schools in charge teachers from Bangalore north & south zone have participated in the programme. As Butterflies are recognised as valuable environmental indicators, both for their rapid and sensitive responses to subtle habitat or climatic changes and as representatives for the diversity and responses of other wildlife, Workshop on Butterfly identification and butterfly diversity were conducted. Information on EMPRI'S Butterfly mobile application was provided and

teachers were taken to field visit to identify butterflies. Session on Eco club activities was organised.



- **Children books Published by EMPRI:** EMPRI has published books “The Lake Doctors” on conservation of Lakes and activity Book on preservation of clean air for Children . These books were sent to all Eco club schools in the state. Books explain importance of lakes and clean air in a simple way so that Children can understand.



Children Cartoon books

- **Books on Solid waste management rules-2016:** EMPRI has published books on Solid waste management rules-2016 in kannada language and these books are sent to Head office and Regional offices of Karnataka State Pollution Control Board (KSPCB), The Bruhat Bengaluru Mahanagara Palike (BBMP), Directorate of Municipal Administration, (DMA), Urban Development Department (UDD), Forest, Environment and Ecology (FEE) department and Urban local bodies to create awareness on Solid waste management rules- 2016



Solid waste management &
Rules-2016 Book

- **Handouts Published by EMPRI:** EMPRI has published different Hand- outs in kannada language with logos on Water and these hand outs were sent to all Eco club schools to put on School Notice boards to create awareness on water preservation.



VIII. NGC School Visit

NGC team was supposed to visit Eco club schools as approved in the State Steering Committee meeting presided by the chairman of State Steering Committee. In order to disseminate information about NGC Programme and review the activities taken up by the Eco-clubs, NGC team of EMPRI visited 40 Eco club schools, target fixed in State Steering Committee. During the school visit, Eco club activities were reviewed and discussion held with the headmaster and eco club in charge teacher. The format of eco club report, utilization certificate and required information in detail was explained to the eco club in charge teachers. NGC team also addressed the eco club member students in each school visited and noted the problems faced by the teachers while conducting the eco club activities and suggested easy methodology to implement the same. The details of the school visits can be seen in Annexure





**Government High School Uttarahalli,
Bangalore South District**



**Government High School Arakeshwarana-
gara Mandya District**

IX. Satellite Communication (SATCOM) teleconference training

SATCOM teleconference training for Eco club in charge teachers was conducted on 16th March 2019 at Department of State Educational Research & Training (DSERT) in which 1828 Eco club school in charge teachers participated from 34 Educational districts. Mr. Mahesh B Shiroor, Director, EMPRI presented brief introduction about NGC. Detailed information on Eco club activities, programmes and tasks to be conducted by the Eco club schools were provided to the Eco club Teachers by Resource persons and NGC Programme Coordinators. Implementation of Environmental related activities at ecoclub schools were discussed. Information about annual report format, Utilization Certificate format were provided to the teachers. Various questions pertaining to eco club activities, Funds utilisation, and annual reports were answered during question and answer session. Feedback was collected from the participants as well.



CHAPTER 3

HUMAN RESOURCES

3.1 Officers on Deputation from Government of Karnataka and Karnataka State Pollution Control Board:

Sl.	Name	Designation	Date of joining	Date of leaving
1	Smt. Ritu Kakkar, IFS.,	Director General	02.01.2013	--
2	Shri. Mahesh B. Shirur	APCCF & Director	22.11.2018	--
3	Dr. K. H. Vinaya Kumar, IFS	CCF & Director (Research), concurrent charge	13.09.2011	--
4	Shri. Ramesha C.	Project Development Officer	31.08.2017	--
5	Smt. Nausheen Jabeen	Gazetted Manager	22.05.2017	--

3.2 Employees;

3.2.1. Employees have been outsourced through manpower agency for carrying out various projects as on 31st March, 2019.

Sl. No.	Positions	Centre for Climate Change & DST	Centre for Lake Conservation/ Water analysis Lab	Centre for Geo Information	Centre for Capacity Building	NGC	ENVIS	Total
1	Consultant	1	-	-		-	-	1
2	Research Scientist	3	1	-		-	-	4
3	Research Associates	4	2	-		-	-	6
4	GIS Scientist/Expert	-	-	1		-	-	1
5	Jr. Research Fellow	1	-	-		-	-	1
6	Project Assistant	1	-	-	-	-	-	1
7	Lab Chemist	-	1	-	-	-	-	1
8	Hydrologist	-	1	-	-	-	-	1
9	Training Head		-	-	1	-	-	1
10	Training Associates		-	-	2	-	-	2
11	Training Assistant		-	-	2	-	-	2
12	Programme Officer	-	-	-	-	-	1	1

Sl. No.	Positions	Centre for Climate Change & DST	Centre for Lake Conservation/ Water analysis Lab	Centre for Geo Information	Centre for Capacity Building	NGC	ENVIS	Total
13	Information Officer	-	-	-	-	-	1	1
14	I T Officer	-	-	-	-	-	1	1
15	Programme Coordinator	-	-	-	-	2	-	2
16	Programme Associate	-	-	-	-	1	-	1
17	Field Assistants	-	2	-	-	-	-	2
18	Para Taxonomist	-	-	-	-	-	1	1
19	Lab Attender	-	2	-	-	-	-	2
	Total	10	9	1	5	3	4	32

3.2.2. Employees have been outsourced through manpower agency for the office management as on 31st March, 2018.

Sl. No.	Positions	Administration	Accounts	Library	Total
1	Manager	1	1	-	2
2	System Administrator	1	-	-	1
3	Librarian	-	-	1	1
4	Office Assistant	1	-	-	1
5	Jr. Office Assistant	1	-	-	1
6	Computer Operator	1	-	-	1
9	Account Assistants	-	2	-	2
10	Jr. Account Assistant	-	1	-	1
11	Drivers	4	-	-	4
15	Dalayaths	3	-	-	3
16	Housekeeping	3	-	-	3
17	Security	3	-	-	3
	Total	18	4	1	23

3.2.3. No. of employees who have resigned from the service of EMPRI (2017-18).

Sl. No.	Positions	NGC	Centre for Lake Conservation/ Water Analysis Lab	Centre for Capacity Building	Total
1	Research Scientist	-	1	-	1
2	Training Associate	-	-	1	1
3	Research Associate	-	1	-	1
4	Lab Chemist	-	1	-	1
5	Technical Assistant	-	1	-	1
6	Field Assistant	-	1	-	1
7	Programme Coordinator	1	-	-	1
8	Programme Associate	1	-	-	1
	Total	2	5	1	8

3.3 Auditors

Following are the Auditors for the EMPRI

1. Statutory Auditor

M/s. N N R & Co.

Chartered Accountants

No. 163, II Floor, Rajeshwari Complex

Above Karnataka Bank Ltd., R.V. Road

Bengaluru – 560 004.

2. Internal Auditor

M/s. Mahesh & Nagaraj

Chartered Accountants

No - 892/A, 9th Cross,

WOC Road, Modi Hospital Main Road,

Bangalore – 560086

Annexure - 1: Members of the Governing Body committee.

Sl No	Members	Designation
1	Additional Chief Secretary Forest, Ecology & Environment Dept. Government of Karnataka, Room No. 448, 4 th Floor, M.S. Building Bangalore	Chairperson
2	Principal Secretary Ecology & Environment Dept. Government of Karnataka Room No. 709, 7 th Floor, 4 th Gate, M.S. Building, Bangalore.	Co-Chairman
3	Chairman, Karnataka State Pollution Control Board, Parisara Bhavan, 5 th Floor, Church Street, Bangalore.	Member
4	Additional Chief Secretary Urban Development Dept. Government of Karnataka, Room No. 436, 4 th Floor Vikasa Soudha, Bangalore.	Member
5	Commissioner for Industrial Development & Director of Industries & Commerce, Government of Karnataka, No. 49, 2 nd Floor, Khanija Bhavana, Bangalore.	Member
6	Commissioner for Health & Family Welfare Services, Government of Karnataka, Ananda Rao Circle, Bangalore	Member
7	Secretary, Finance (Budget & Resource), Government of Karnataka, Room No. 250, 2 nd Floor, Vidhana Soudha, Bangalore.	Member
8	Member Secretary Karnataka State Pollution Control Board, No. 49, 5 th Floor, Parisara Bhavan,, Bangalore.	Member
9	Additional Director & Zonal Officer, South Zone Office, Central Pollution Control Board, Nisarga Bhavan, 7th D Cross, Shivanagar, Bangalore.	Member
10	Director General Environmental Management & Policy Research Institute Hasiru Bhavana, Doresanipalya Forest Campus, JP Nagar 5 th Phase, Bangalore.	Member Secretary

Annexure - 2: Executive committee members

Sl. No	Members	Designation
1.	Director General, Environmental Management and Policy Research Institute, Bangalore.	Chairperson
2	Additional Principal Chief Conservator of Forests, Research and Utilization, Karnataka Forests Department, Bangaluru.	Member
3	Special Director, Dept. of Environment & Ecology, M. S. Building, Bangalore.	Member
4	Internal Financial Advisor & Joint Secretary, Forest, Ecology and Environment, GoK, M.S. Building, Bangalore.	Member
5	Director, Environmental Management and Policy Research Institute, Bangalore.	Member Secretary

Annexure - 3: Research & Training Advisory Committee members

Sl. No	Member	Designation
1	Director General, Environmental Management & Policy Research Institute, Bangalore.	Chairperson
2	Member Secretary, Karnataka State Pollution Control Board, No. 49, 5 th Floor, Parisara Bhavan,, Bangalore.	Member
3	Additional Principal Chief Conservator of Forests, Research and Utilization, Karnataka Forests Department, Bangalore.	Member
4	Former Director General of Environmental Management & Policy Research Institute , Bangalore.	Member
5	Special Director (Tech.), Ecology and Environment Department, Government of Karnataka, M.S. Building, Bangalore.	Member
6	Professor of Law, National Law School of India University, Nagarbhavi, Bangalore.	Member
7	Chairman, CISTUP, Indian Institute of Science, Bangalore.	Member
8	Director, Institute for Social & Economic Change, Bangalore.	Member
9	Shri S. Suresh, Additional Director & Zonal Officer, Central Pollution Central Board(South), Bangalore.	Member
10	Group Co-ordinator (Research), Institute of Wood Science and Technology, Bangalore.	Member
11	Fellow (Centre of Environmental Studies), Southern Regional Centre (TERI), Bangalore.	Member
12	Director, Environmental Management and Policy Research Institute, Bangalore.	Convener

Annexure - 4: Selection Committee members

Sl. No.	Members	Designation
1	Director General, Environmental Management & Policy Research Institute, Bangalore.	Chairperson
2	Shri. Jagmohan Sharma, IFS, Forest Conservation, Bangalore.	Member
3	Member Secretary, Karnataka State Pollution Control Board, Bangalore.	Member
4	Professor, National Law School of India University, Bangalore	Member
5	Director, Environmental Management and Policy Research Institute, Bangalore.	Member Convener

Annexure-5: Internship Committee members.

Sl. No.	Members	Designation
1	Director General, Environmental Management & Policy Research Institute, Bangalore.	Chairperson
2	Director, Environmental Management and Policy Research Institute, Bangalore.	Member
3	Director (Research, Environmental Management and Policy Research Institute, Bangalore.	Member
4	Professor, National Law School of India University, Bangalore	Member

Annexure-6: Performance Review Committee members.

Sl. No.	Members	Designation
1	Director General, Environmental Management & Policy Research Institute, Bangalore.	Chairperson
2	Director, Environmental Management and Policy Research Institute, Bangalore.	Member
3	Director (Research, Environmental Management and Policy Research Institute, Bangalore.	Member

Annexure-7: Composition of Technical Advisory Panel

Sl. No.	Members	Designation
1	Director General Environmental Management & Policy Research Institute Bengaluru.	Chairperson
2	System Analyst, DPAR, (e-Governance), Bengaluru.	Member
3	Representative of IIT, Bengaluru.	Member
4	Representative, IIMB, Bengaluru.	Member
5	Director (Research), EMPRI, Bangalore	Convener

Annexure – 8: Trainings /Workshops conducted during the year 2018-19

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
1.	03-06-2018	Mini –Marathon	Eco-Club School students and Officers & staff of Various Dept.	3141	Cubbon park
2.	04-06-2018	River front Cleaning activity at Nandi hills	Eco-Club School students and Officers & staff of Various Dept.	460	Nandi hills
3.	12-06-2018	River front Cleaning activity at Nanjangud	Eco-Club School students and Officers & staff of Various Dept.	505	Nanjangud
4.	02-07-2018	Training program on Plastic Ban Notification 2016 & Solid Waste Management Notification -2016	Enforcement Officers from Various dept.	43	Dharawad
5.	25-07-2018	Training on Plastic Ban notification for stakeholders	Officers & Staff of BIAL, Vendors of Airport	52	Project Office ,BIAL
6.	30-07-2018	Training on Plastic Ban notification for stakeholders of Vijayanagar Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	51	South zone BBMP Meeting Hall
7.	30-07-2018	Training on Plastic Ban notification for stakeholders of Basavanagudi Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	43	,South zone BBMP Meeting Hall
8.	31-07-2018	Training on Plastic Ban notification for stakeholders of Jayanagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	55	,South zone BBMP Meeting Hall

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
9.	31-07-2018	Training on Plastic Ban notification for stakeholders of Padmanabhanagar constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	91	,South zone BBMP Meeting Hall
10	1-08-2018	Training on Plastic Ban notification for stakeholders of BTM layout Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	64	South zone BBMP office Meeting Hall
11	1-08-2018	Training on Plastic Ban notification for stakeholders of Chickapete Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	52	South zone BBMP meeting Hall
12	2-08-2018	Training on Plastic Ban notification for stakeholders of Gandinagar Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	45	West zone BBMP meeting Hall
13	2-08-2018	Training on Plastic Ban notification for stakeholders of Mahalakshmi Layout Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	20	West zone BBMP meeting Hall

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
14	3-08-2018	Training on Plastic Ban notification for stakeholders of Govindaraja Nagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	42	West zone BBMP meeting Hall
15.	3-08-2018	Training on Plastic Ban notification for stakeholders of Rajajainagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	15	West zone BBMP meeting Hall
16	4-08-2018	Training on Plastic Ban notification for stakeholders of Malleshwaram Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	44	West zone BBMP meeting Hall
17	04-08-2018	Training on Plastic Ban notification for stakeholders of Chamarajapete Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	34	West zone BBMP meeting Hall
18	06-08-2018	Training on Plastic Ban notification for stakeholders Of C.V.Raman nagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of	62	Gokul Kuteer Party Hall Indiranagara ,Bangalore

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
			BBMP		
19	06-08-2018	Training on Plastic Ban notification for stakeholders of Pulikeshi nagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	88	Yoli Grand party hall, Near east railway station, Bangalore
20	07-08-2018	Training on Plastic Ban notification for stakeholders of Sarvjna nagara , Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	79	Hotel Savera pary hall, Kammanahalli, Bangalore
21	07-08-2018	Training on Plastic Ban notification for stakeholders of Shivajinagara , Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	93	Hotel Ashoka near Kumar krupa, Bangalore
22	10-08-2018	Training on Plastic Ban notification for stakeholders of K.R. Puram , Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	60	BBMP zonal office Mahadevapura
23	10-08-2018	Training on Plastic Ban notification for stakeholders of Mahadevapura Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of	65	BBMP zonal office Mahadevapura

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
			BBMP		
24	13-08-2018	Training on Plastic Ban notification for stakeholders of Yelahanka Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	82	Executive engineer office, BBMP Yelahanka Old town
25	13-08-2018	Training on Plastic Ban notification for stakeholders of Byatarayanapura Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	99	Executive engineer office, BBMP Yelahanka Old town
26	14-08-2018	Training on Plastic Ban notification for stakeholders of Bommanahalli Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	30	BBMP zonal office , Bommanahalli
27	14-08-2018	Training on Plastic Ban notification for stakeholders of Bangalore Dakshina Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	29	BBMP office RBI layout , Bangalore
28	18-08-2018	Training on Plastic Ban notification for stakeholders of Yeshawanthapura Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of	51	BBMP zonal office RR nagar , Bangalore

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
			BBMP		
29	18-08-2018	Training on Plastic Ban notification for stakeholders of Rajarajeshwari nagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	117	BBMP zonal office RR nagar , Bangalore
30	20-08-2018	Training on Plastic Ban notification for stakeholders of Dasarahalli Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	55	BBMP zonal office Dasarahalli
31	21-08-2018	Training on Plastic Ban notification for stakeholders of Hebbal Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	53	Hotel new Shanti nagar party hall ,RT nagar main road , Bangalore
32	21-08-2018	Training on Plastic Ban notification for stakeholders of Shantinagara Constituency	Members of road side vendors associations, hoteliers association, Event Managers associations, Vegetables & fruits sellers association & Officers & staff of BBMP	106	Ajanta Hotel ,M.G. road , Bangalore.
33.	15-09-2018	Training program on Plastic Ban Notification 2016	Food Commissionerate officers	44	Conference Hall, EMPRI,
34.	26-09-2018	Training program on Bio -Medical Waste Management rules -	Medical officers, Para medical staff of health	150	Mysore

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
		2016 & Plastic Ban Notification 2016	care establishments.		
35.	06-10-2018	Awareness capaign at Bannerghatta	Staff of CRPF, various School and College Students & Volunteers	100	Bannerghatta
36	22-10-2018 to 30-11-2018	Green Skill Development Programme (GSDP) Certificate Course on Pollution monitors	Science graduates from various discipline	14	EMPRI
37	30-11-2018	Workshop on permanent forest observation	EMPRI staff	60	Conference hall , EMPRI
38	24 & 25-01-2019	National level seminar on Climate Change	Scientist, Researchers from all over India	100	Conference hall , EMPRI
39	02-02-2019	Celebration of World wet land day	Eco-club school students and EMPRI staff	75	Puttenahalli lake
40.	05-02-2019	Workshop on butterfly identification App	Bangalore south and north Eco-club school teachers	162	Conference hall , EMPRI
41.	15-02-2019	1. Cleaning Drive at Doresanipalya forest campus 2.“Clean Air Campaign” 3. Bring back waste from nature	EMPRI staff and MoEF & CC officers n staff, CCF, DCF ,ACF (Research & utilization) officers & staff & BBMP staff	132	Doresanipalya forest campus
42.	23-02-2019	Workshop on Emergency preparedness	EMPRI staff	20	Conference hall , EMPRI
43.	21-02-2019	Training program on Plastic Ban Notification 2016	Shree B.K.V govt. high school , nimbalegere eco club students	50	Shri B.K.V govt. high school, nimbalegere
44.	21-02-2019	Training program on Plastic Ban Notification 2016	Govt. Boys high school , chikkajogihalli eco club students	40	Govt. Boys high school , chikkajogihalli
45.	21-02-2019	Training program on	Govt. High school	50	Govt. High

Sl. NO	Date	Details of training/Workshop	Target Participants	No.Of participants	Venue
		Plastic Ban Notification 2016	gudikote eco club students		school gudikote
46.	23-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school , danapura eco club students	13	Govt. High school , danapura
47.	23-02-2019	Training program on Plastic Ban Notification 2016	Govt. girls High school , hosapete eco club students	50	Govt. girls High school , Hosapete
48.	23-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school , Kakubalu eco club students	30	Govt. High school , Kakubalu
49.	23-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school, biralu, eco club students	15	Govt. High school, biralu
50.	24-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school, Khanadalu, eco club students	50	Govt. High school, Khanadalu
51.	24-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school, nandur eco club students	40	Govt. High school, nandur
52.	24-02-2019	Training program on Plastic Ban Notification 2016	Govt. High school, Adarsha vidyalaya Bhimalli eco club Students.	50	Govt. High school, Adarsha vidyalaya, Bhimalli
53.	21-02-2019	Training program on Plastic Ban Notification 2016	Govt. deaf and dumb school students	42	Govt. deaf and dumb school, Ballary
54.	24-02-2019	Training program on Plastic Ban Notification 2016	Govt. blind school, Kalaburgi students	65	Govt. blind school, Kalaburgi
55.	24-02-2019	Training program on Plastic Ban Notification 2016	Govt. deaf and dumb school students	115	Govt. deaf and dumb school students Kalaburgi
56.	01-03-2019	Training program on Bio- Medical waste management	Medical officers, Para medical staff of health care establishments	90	Shimoga
Total 56 trainings				7383	

Annexure – 9: Seminar/ workshops/training attended/ presented papers by staff of Centre for climate change

- i. Dr.Manjunatha.M, Dr.Boya Saritha and Mr.Cruz Antony participated in two day training program on **e-Procurement** during 2nd-3rd July 2018 conducted by e-Procurement cell, GoK, Bangalore.
- ii. Dr.O.K.Remadevi and Dr.Boya Saritha participated in two day workshop on **Data and Tools for Climate Resilience** during 13th. 14th August 2018 conducted by Divecha Centre for Climate Change, IISc, Bangalore.
- iii. Dr.Manjunatha.M participated in 6 days workshop on **Plant Ecology and Eco-physiology** on 17-22 September 2018 at Sirsi, Karnataka- conducted by Centre for Sustainable Technologies, Indian Institute of Science, IISc, and Bangalore.
- iv. Dr K.H. Vinayakumar, Dr O.K. Remadevi and Mr. Kiranraddi attended **International Biodiversity Congress held at Forest Research Institute, Dehradun, on 4 - 6 October 2018** and presented the following papers
 - Ritu Kakkar, Vinaya Kumar, K.H., Remadevi, O.K., Saritha, B., Balasubramanya Sharma, Manjunatha, M., Kiranraddi and Suresh, H.S. (2018). Floristic diversity in permanent preservation plots established at Bannerghatta National Park. Pp.20.
 - Ritu Kakkar, Kiranraddi Morab, Vinaya Kumar, K.H. and Remadevi, O.K.2018. "Variation of Normalized Difference Vegetation Index (NDVI) in the core and peripheral regions of Bannerghatta National Park with reference to Climatic factors". Pp 474.
 - Remadevi, O.K., Sooraj, S., Chathurved Shet, Vinaya Kumar K.H. and Ritu Kakkar.2018. Diversity and distribution of butterflies in different eco climatic zones of Karnataka. Pp 158.
- v. **The National level seminar on Climate Change held at EMPRI on 24 & 25th of January 2019** was attended by all researchers in EMPRI. The following papers were presented from EMPRI work.
 - Vinaya Kumar, K.H., Ritu Kakkar, Remadevi, O.K., Boya Saritha, Manjunatha, M Balasubramanya Sharma, Kiranraddi Morab, Poorvashree, Suresh, H.S. and Dattaraja (2019). A baseline study on the floristic diversity of bugurikallu permanent preservation plot, bannerghatta national park.(Got **Best Oral Presentation award**)
 - O.K. Remadevi, J. Cruz Antony, K.H. Vinaya Kumar and Ritu Kakkar. Mobile app enabled butterfly monitoring program for Bengaluru.
 - Kiranraddi Morab, Balasubramanya Sharma, Manjunatha.M, Saritha Boya, Poorvashree.P, Remadevi.O.K, Vinaya Kumar K.H and Ritu Kakkar. (2019). Mapping of spatial distribution pattern of different species in the permanent preservation plot at thalewood house in bannerghatta national park, Bengaluru. (Got **Best Poster Presentation award**)
 - Soorya.N.R.Addoor, Krishna Kumar.G, Keshava Chandra, Pushpa Dash, Vinaya Kumar K.H and Ritu Kakkar Ecological studies of the estuaries of Dakshina Kannada district with special reference to LU/LC analysis of Phalguni and Nethravathi estauries

Annexure –10: RESEARCH PUBLICATIONS (COMMUNICATED/PUBLISHED)

1. Ritu Kakkar, K.H. Vinaya Kumar, O.K. Remadevi, M. Manjunatha, B.Saritha, Balasubramanya Sharma, Kiranraddi M., H. S. Dattaraja and H. S. Suresh (2018). Establishing Permanent Preservation Plots in Bannerghatta National Park for long-term ecological studies to monitor climate change. *My Forest*. 54(2):19-34.
2. Ritu Kakkar, Vinaya Kumar KH, Remadevi OK, Hema N, and Antony, JC (2018). *Climate Change: Challenges and Solutions*, Allied Publishers, New Delhi, ISBN 978-93-87997-00-0, 306pp.
3. Remadevi OK, Chaturved.S, Sooraj.S, Vinayakumar KH, Ritu Kakkar (2018). *Bengaluru Butterflies: A Field guide*. Excel publishers, new Del ISBN 978-93-86724-52-6. 70pp
4. Remadevi OK, Papiya Roy, Hema N and Saritha B. 2018. *Climate Change: Impacts, Adaptation and Mitigation*. In: *SoER-2015: State of Environment Report, 2015*, Karnataka. Environmental Management and Policy Research Institute (EMPRI), Department of Forest, Ecology and Environment (FEE), GoK. 359-385.
5. Susarla S.K., Murthy C.K and Hema N. 2018. *Coastal Environment*. In *SoER-2015: State of Environment Report, 2015*. Environmental Management and Policy Research Institute EMPRI), Department of Forest, Ecology and Environment (FEE), GoK. Pp.91-112.
6. B. Saritha, O.K. Remadevi, K.H. Vinaya Kumar and Ritu Kakkar (2019). *Krishi Aranya Prothsaha Yojane, an agro-forestry scheme for climate change mitigation – A case study*. *My Forest*. 55(1). (in Press)
7. Ritu Kakkar, K.H. Vinaya Kumar, O.K. Remadevi, Balasubramanya Sharma, M. Manjunatha, B. Saritha, Kiranraddi M., H.S. Dattaraja and H.S. Suresh. *Floral Diversity studies in the Permanent Preservation Plot of tropical deciduous forest region, Bannerghatta National Park, Eastern Ghats, Southern India (under preparation for Journal of Tropical Ecology)*.
8. Vinaya kumar, K.H., Ritu kakkar, O.K. Remadevi, B. Saritha, M. Manjunatha, Balasubramanya Sharma, Kiranraddi M, and Poorvashree. *A baseline study on the floristic diversity of Permanent Preservation Plots, established in Bannerghatta National Park. (in press for the book, “Environmental Monitoring and Management for Building Climate Resilience”)*.
9. Hema N, Remadevi O.K, Chandrappa R, Vinayakumar K.H and Kakkar R. *Evaluating the socio-economic and environmental perspectives of metro rail commuters of Bengaluru city*. *Indian Journal of Spatial Science* (communicated)

Annexure-11: District-wise release of funds to the NGC schools

Sl. No	District	No. of Government Higher Primary schools & High Schools	No. of Government Aided Higher Primary schools & High Schools	Total No. of Schools	Amount released to NGC schools (Rs.)
1	Bagalkot	183	47	230	11,50,000/-
2	Bangalore North	129	46	175	8,75,000/-
3	Bangalore South	117	47	164	8,20,000/-
4	Bangalore Rural	213	36	249	12,45,000/-
5	Belgaum	127	48	175	8,75,000/-
6	Bellary	168	47	215	10,75,000/-
7	Bidar	160	47	207	10,35,000/-
8	Bijapur	132	41	173	8,65,000/-
9	Chamarajnar	199	48	247	12,35,000/-
10	Chikkaballapura	218	31	249	12,45,000/-
11	Chikmagalur	142	48	190	9,50,000/-
12	Chikkodi	159	48	207	10,35,000/-
13	Chitradurga	110	48	158	7,90,000/-
14	Dakshina Kannada	169	53	222	11,10,000/-
15	Davanagere	152	47	199	9,95,000/-
16	Dharwad	119	45	164	8,20,000/-
17	Gadag	162	48	210	10,50,000/-
18	Kalaburagi	250	-	250	12,50,000/-
19	Hassan	240	10	250	12,50,000/-
20	Haveri	137	48	185	9,25,000/-
21	Kodagu	202	48	250	12,50,000/-
22	Kolar	211	39	250	12,50,000/-
23	Koppal	222	27	249	12,45,000/-
24	Madhugiri	152	47	199	9,95,000/-
25	Mandya	214	36	250	12,50,000/-
26	Mysore	216	32	248	12,40,000/-
27	Raichur	220	28	248	12,40,000/-
28	Ramanagara	193	46	239	11,95,000/-
29	Shimoga	164	47	211	10,55,000/-
30	Sirsi	196	48	244	12,20,000/-
31	Tumkur	133	50	183	9,15,000/-
32	Udupi	179	70	249	12,45,000/-
33	Uttar kannada	163	48	211	10,55,000/-
34	Yadagiri	243	5	248	12,40,000/-
Total		5994	1404	7398	3,69,90,000/-

Annexure-12: Details NGC school visit during 2018-19

Sl no	Revenue Division	District	Block/ Taluk	Name of the School
1	Belgaum	Haveri	Haveri	Government High School Kallihal
2				Government High School Kabbur
3				Government High School Katenahalli
4		Belgaum	Savadatti	SNBK High School Devihosur
5				Government PU College, Yakkundi
6				Government High School Marakumbi
7				Government High School Mallur, Savadatti
8			Belgaum	Government High School Vadagavi
9				Government High School Ramathirthanagar.
10				Government High School Vantamury
11	Kalburgi	Bellary	Kudlagi	Sri B.K.V.Government High School, Nimbalegere
12				Government Boys High School, Chikkajogihalli
13				Government High School, Gudikote
14		Hospet	Government High School(RMSA) Danapur	
15			Government Girls PUC, High School section, Hospet	
16			Government High School, Kaakubalu.	
17		Kalburgi	Jevargi	Government High School, Biralu
18			Kalburgi (South Zone)	Government High School, Kanadala
19				Government High School, Nandoor
20				Adarsha Vidhyalaya(RMSA), Bhimalli
21	Mysore	Mandya	Maddur	Government High School, Koolgeregate
22				Government High School, Shivapura
23				Government High School, Deshahalli
24		Mandya	Government Girls High School, Arakeshwara	
25			Government High School, Shankarapura	
26			Government High School, Sathnoor	
27	Mysore	Hassan	Channarayapatna	Government Junior College, Shravanabelagola
28				Government girls High School, Shravanabelagola
29				Government girls High School, Hirisave

Sl no	Revenue Division	District	Block/ Taluk	Name of the School
30				Government Junior College, High School section, Hirisave
31	Bangalore	Bangalore Rural	Devanahalli	Government Junior College, High School section, Vishwanthapura
32				Government High School, Kundana
33			Doddabal-lapura	Government High School, Melekote
34				Government High School, Bashettihalli
35		Bangalore Urban	Bangalore South	Government High School, Uttarahalli
36				Government High School, Kaggalipura
37				Government High School, Puttenahalli
38			Bangalore North	Government Model Primary School, Peenya
39				Government Higher Primary School, Chikkabidara Kallu
40				Government Model Primary School, Nagasandra



NNR & Co.,

Chartered Accountants

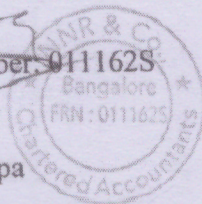
AUDITOR'S REPORT

1. We have examined the Balance sheet as at March 31, 2019 and the income & expenditure accounts for the year ended on the date, attached herewith of ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE (EMPRI).
2. We certify that the Balance Sheet and the Income and Expenditure Account are in agreement with the books of account maintained at the Registered office at "HASIRU BHAVANA", Dosresanipalya Forest Campus, Vinakanagar Circle, J P Nagar 5th Phase, Bangalore-560078.
3. These financial statements are the responsibility of the Management. Our responsibility is to express an opinion on these financial statements based on our audit.
4. We conducted our audit in accordance with auditing standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining on test basis, evidence supporting the amount and disclosures in the financial statement. As audit also includes the assessing the accounting principles and significant estimates made by the management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.
5. We report that:-
 - a) We have obtained all the information and explanations which, to the best our knowledge and belief were necessary for the purpose of the audit.
 - b) In our opinion proper books of accounts have kept at the registered office of the EMPRI so far as appears from our examination of the books.
 - c) In our opinion and to the best of our information and according to the explanation given to us the said accounts, read with notes there on, if any, give a true and fair view:
 - i. In the case of the Balance sheet, of the state of affairs of the EMPRI as at March 31, 2019 and
 - ii. In the case of the income and Expenditure Account of the Excess of income over Expenditure of the EMPRI for the year ended on that date.
 - iii. The Schedules and Annexures to the Income and Expenditure Account and Balance Sheet shall form part of this report.

For NNR&Co,
Chartered Accounts
Firm Registration Number: 011162S

CA. Nuthin Mahadevappa
Partner
Membership No: 212134

Place: Bangalore
Date: 13/06/2019



#163, Rajeshwari Complex, II Floor, Above Karnataka Bank Ltd., R.V. Road, Bangalore -560 004, India.

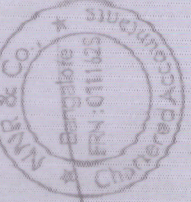
Telefax : +91 80 2657 7870 e-mail : info@nnr.co.in Visit us : www.nnr.co.in

ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE

Hasiru Bhalavane, Doresanipalya Forest Campus, Vinayaka Nagar Circle, J P Nagar 5th Phase, Bangalore - 560078

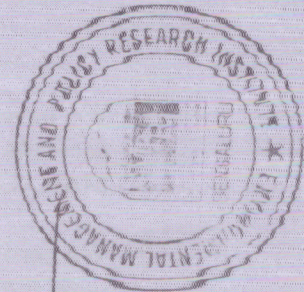
BALANCE SHEET AS AT 31ST MARCH 2019

LIABILITIES	AMOUNT	AMOUNT	ASSETS	AMOUNT	AMOUNT
CAPITAL FUND					
Membership fees	700.00		Fixed Asset		521,89,916.70
General fund (SCH-1)	1,073,60,088.51		As Per Schedule -4		
Fund Account INEP	7,83,497.67		Investment		567,93,741.00
Grant Received in advance (SCH-2)	234,72,695.20	1,316,16,981.38	Fixed deposits (SCH-5)		
Security Deposit :			CURRENT ASSETS AND ADVANCES		
Harsha security	25,000.00		BMTC	3,27,294.00	
Pelican equipments	30,043.00		PBR Coastal Biodiversity	1,62,029.00	
S D-The Industrial & Laboratory Equipments Co.	12,524.00		Accrued Interest (SCH-6)	24,76,247.00	
Security Deposit - Jeniva Power Tech	4,172.00		Current asset - INEP	69,625.00	
Security Deposit - Ekakshara Printers	24,175.00	95,914.00	Prepaid Expenses	25,422.00	
			Income Tax refund due	9,86,743.00	
Current liabilities :			TDS Receivable	5,17,546.00	
TDS	1,83,820.00		2MMD - Bescrom Deposit	56,030.00	
Outstanding expenses (Sch-3)	12,72,123.00		Loans and Advances (SCH-7)	4,12,216.00	50,33,152.00
Creditors for expenses (Sch-10)	18,48,821.00		BANK AND CASH BALANCES		
		33,04,764.00	Sweep account (Sch-8)	140,81,951.97	
			Cash at Bank (Sch-9)	69,18,263.71	
Total		1,350,17,659.38	Total		1,350,17,025.38



For NNR & Co.,
Chartered Accountants
CANNETHIN MAHADEV APPA
Partner
M. No. 212134

Raj Kishore Singh
Raj Kishore Singh, IFS
Director General
EMPRI



Date: 13/06/2019
Place: Bangalore

ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE

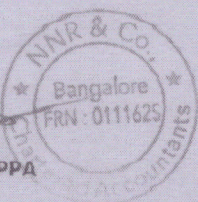
Hasiru Bhavana, Doresanipalya Forest Campus, Vinayaka Nagar Circle, J P Nagar 5th Phase, Bangalore - 560078

Income and Expenditure Account for the year ending 31st March 2019

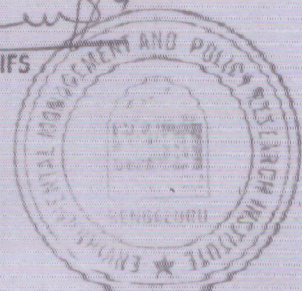
Expenditure	Amount	Income	Amount
To Salary and wages	2,40,25,383.00	By Interest Income	51,51,068.00
To Administrative Charges of Nodel Agency Expen	6,21,274.10	" Administrative Charges	22,07,306.10
" Advertisement / Publicity Charges	1,18,246.00	" Common Cost Transfers	3,06,57,970.00
" AMC Charges	52,515.00	" Conference Hall Rent	3,50,000.00
" Annual Subscription / Membership	16,285.00	" Institutional Charges	8,87,627.52
" Bank Charges	11,133.71	" Other Income	3,725.00
" Books & Periodicals	14,524.00	" Water Sample Testing Charges	5,260.00
" Computer Consumables	68,050.00	" Laboratory Receipts	3,230.00
" Diesel Generator Maintenance	15,986.00		
" Electricity Charges	2,61,956.00		
" Fuel, Oil & Toll	3,78,660.00		
" Insurance Charges	60,613.00		
" Interest Refunds to Funding Agencies	21,03,035.00		
" Internal audit fees	99,710.00		
" KSCST ASTRA IIISC - INEP - Raichur Expenses	1,48,624.00		
" Lab Consumables	6,02,841.00		
" Lease Rental Charges - BSNL	3,89,400.00		
" Medical Reimbursement	94,335.00		
" Meeting Expenses	1,99,013.00		
" Mobile Charges	1,73,095.00		
" Office Expenses	2,93,732.00		
" Other Expenses	69,786.00		
" Postage & Courier Charges	68,067.00		
" Printing & Stationery	9,89,325.00		
" Professional Charges	1,09,386.00		
" PT Renewal	2,500.00		
" Repairs & Maintenance (M&E)	68,971.00		
" Repairs & Maintenance (Building)	8,97,375.00		
" Stipend	12,320.00		
" Tally Software Licence Fee	12,744.00		
" Telephone Charges	1,05,055.00		
" Travelling Expenses	1,82,188.00		
" Unspend Balance Refund	2,739.00		
" Vehicle Running & Maintenance	3,35,090.00		
" Water Charges	26,226.00		
" Write Offs	16,985.00		
" Depreciation	39,40,249.62		
To Excess of Income over Expenditure	26,73,719.88		
Total	3,92,61,137.31	Total	3,92,61,137.31

For NNR & CO.,
Chartered Accountants

(Signature)
CA NITHIN MAHADEVAPPA
Partner
M. No.: 212134



(Signature)
Raj Kishore Singh, IFS
Director General
EMPRI



Date: 13/06/2019
Place: Bangalore

ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE

Hasiru Bhavana, Dorasanipalya Forest Campus, Vinayaka Nagar Circle, J P Nagar 5th Phase, Bangalore - 560078

Financial Year : 2018-19

GRANT RECEIVED IN ADVANCE SCHEDULE-2

Sl. No.	Particulars	Opening Balance	Receipts/Transfer From GoK, GoI, Others	Utilisation / Transfer to other	Closing balance
1	Grant Recd in Adv - TGH-WS-CS	24,36,970.00	-	24,36,970.00	-
2	For EMPRI Development Grant (GoK)	1,15,32,741.74	4,35,05,727.00	4,05,17,162.68	1,45,21,306.06
3	Establishment of Climate Change Cell (GoK)	97,93,032.00	-	97,93,032.00	-
4	13th Finance Commission Grant (GoK)	23,51,650.00	-	23,51,650.00	-
5	Water Safety Plan - A Quality based approach to water supply service delivery - II Project (CISTUP)	2,66,244.53	-	2,66,244.53	-
6	Grant - DCS for Water Bodies in HDMC	16,51,264.00	-	11,65,379.00	4,85,885.00
7	Baseline study and monitoring of Ecological Impacts on river basin of Yettinahole Drinking Water Project as stipulated by MoEF & CC	79,21,438.00	-	62,54,307.00	16,67,131.00
8	Inventorisation of Water bodies in Bangalore Metropolitan Region (CISTUP)	(2,12,975.00)	2,12,975.00	-	-
9	For Mini-Marathon & Cyclothon held at Cubbon Park on 3rd June, 2018 (Provided by BIAL)	-	10,00,000.00	10,00,000.00	-
10	For Mini-Marathon & Cyclothon held at Cubbon Park on 3rd June, 2018 (Provided by KSPCB)	-	10,00,000.00	10,00,000.00	-
11	Bhadra Project	-	1,12,500.00	11,795.00	1,00,705.00
12	GSDP-CPCB	-	7,73,188.00	7,73,188.00	-
13	Grant Recd in Adv - ENVIS	6,33,581.50	12,36,700.00	15,59,941.43	3,10,340.07
14	Grant Recd in Adv - NGC GOI	87,517.10	3,81,13,762.00	3,95,35,539.10	(13,34,260.00)
15	Grant Recd in Adv - Plastic Ban - GOK	-	24,36,970.00	16,75,607.00	7,61,363.00
16	Grant Recd in Adv - Swachata Action Plan - GoI	29,011.00	70,00,000.00	54,08,203.00	15,91,797.00
17	MoEF&CC, GoI Grant released for Climate Change Cell	1,30,99,404.90	28,00,000.00	1,05,30,976.83	53,68,428.07
18	Grant Recd in Adv - DST Climate Change	8,06,428.30	1,11,000.00	29,011.00	-
19	State of Environment Report (SoER), Karnataka - 2015 (MoEF&CC)	5,03,96,308.07	9,31,92,332.00	12,51,16,544.87	2,34,72,695.20
	GRAND TOTAL				

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 Hasiru Bhorra, Dheesa niya Forest Campus, Tharayala Nagar Circle, P Nagar 5th Phase, Bangalore - 560078

SCH - 4 DEPRECIATION FOR THE YEAR 2018-19

Particulars	WDV on 2018	GROSS BLOCK		Deletions	Total	DEPRECIATION		Total	WDV ON 31.3.2019
		Additions				Addition \ deletion <180 days	Depreciation For the year		
		>180 days	<180 days						
PART - I (5%)									
BOREWELL	3,52,615.30	-	-	-	3,52,615.30	17,630.77	-	17,630.77	3,34,984.54
Main BUILDING	97,20,564.35	-	-	-	97,20,564.35	4,86,028.22	-	4,86,028.22	92,34,536.13
ANNEX BUILDING	2,87,65,603.85	-	13,68,383.00	-	3,01,33,986.85	18,53,255.09	3,42,495.75	21,95,750.84	3,52,47,634.01
Sign Board	75,435.70	-	-	-	75,435.70	3,771.19	-	3,771.19	71,663.92
PART - II (10%)									
FURNITURE & FITTING	27,06,807.60	-	-	-	27,06,807.60	2,70,681	-	2,70,680.76	24,36,126.84
ALMIRAH	1,45,324.80	-	-	-	1,45,324.80	14,532	-	14,532.48	1,30,792.32
BODYLINE VISITORS STACKING CHAIR	66,600.00	-	-	-	66,600.00	6,660	-	6,660.00	59,940.00
WINDSTONE SOLID WOOD 1 SEATER SOFA	19,252.80	-	-	-	19,252.80	1,925	-	1,925.28	17,327.52
WINDSTONE SOLID WOOD 2 SEATER SOFA	16,967.70	-	-	-	16,967.70	1,697	-	1,696.77	15,270.93
WINDSTONE SOLID CENTRE TABLE	5,471.10	-	-	-	5,471.10	547	-	547.11	4,923.99
VISTA LEVELOR VERTICAL BUNDS	24,071.40	-	-	-	24,071.40	2,407	-	2,407.14	21,664.26
PART - III (15%)									
OFFICE EQUIPMENTS	3,74,095.20	-	-	-	3,74,095.20	56,114	-	56,114.28	3,17,980.92
ELECTRICAL & EQUIPMENTS	1,40,736.48	-	-	-	1,40,736.48	21,110	-	21,110.47	1,19,626.00
BOOKS	53,514.30	-	-	-	53,514.30	8,027	-	8,027.15	45,487.16
Camera	14,467.85	-	-	-	14,467.85	2,170	-	2,170.18	12,297.67
CHEQUERET	2,28,889.20	-	-	-	2,28,889.20	34,333	-	34,333.46	1,94,555.75
CLOCKERY	14,970.20	-	-	-	14,970.20	2,246	-	2,245.53	12,724.67
LIBRARY	1,235.90	-	8,794.00	-	10,029.90	185	660	844.94	9,184.97
MAHINDRA BOLERO	2,59,398.75	-	-	-	2,59,398.75	31,910	-	38,909.81	2,20,488.94
Maruti Esteem	46,838.40	-	-	-	46,838.40	1,026	-	7,025.76	39,812.64
MOBILE	13,226.85	-	-	-	13,226.85	1,984	-	1,984.03	11,242.82
REFRIGERATOR	50,954.95	-	-	-	50,954.95	7,643	-	7,643.24	43,311.71
CELL PHONE	38,603.60	-	16,985.00	-	55,588.60	5,791	-	5,790.54	50,798.06
SEDEX EPABCSYSTEM	56,693.30	-	-	-	56,693.30	8,504	-	8,504.00	48,189.31
IED TV SONI KOL-SONGHRI	2,89,372.30	-	-	-	2,89,372.30	42,406	-	43,405.85	2,45,966.46
IHS	5,59,835.50	-	-	-	5,59,835.50	83,975	-	13,975.31	5,45,860.19
MAHINDRA T/NO	2,776.80	-	-	-	2,776.80	409	-	409.02	2,367.78
MARUTI SUZUKI	32,412.55	-	-	-	32,412.55	1,862	-	1,862.83	30,549.72
SODIET CRUISER LIFE	59,759.25	-	-	-	59,759.25	9,564	-	9,563.59	50,195.66
SODIET DIFERONB PLUS-SI LAFE	10,592.70	-	-	-	10,592.70	1,589	-	1,588.91	9,003.79
VARI MAVERNAKPHNE	64,090.85	-	-	-	64,090.85	9,514	-	9,513.65	54,577.22
LED TELEVISION	14,266.40	-	-	-	14,266.40	2,140	-	2,139.95	12,126.45
WIKON COOLTEP-10	2,11,288.75	-	-	-	2,11,288.75	31,193	-	31,193.38	1,79,995.44
PUBLIC ADDRESS SYSTEM	60,485.15	-	-	-	60,485.15	1,073	-	1,072.77	59,412.38
PUREIT PURIFIER	8,094,122.70	-	1,11,040	-	8,205,162.70	1,21,113	-	1,21,113.48	8,084,049.22
PURIFICATOR PDS 5	5,46,608.30	-	-	-	5,46,608.30	8,193	-	8,193.25	5,45,795.05
LIBRARIETEL									

ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE

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SCH -4 DEPRECIATION FOR THE YEAR 2018-19

GROSS BLOCK

Particulars	WDV on 1-4-2018	GROSS BLOCK			DEPRECIATION			CLOSING BALANCE WDV ON 31-3-2019
		Additions	Deletions	Total	Depreciation	Additions \ deletion	Total	
PART -IV (50%)								
COMPUTER & SOFTWARE	16,493.60	-	-	16,493.60	9,896	-	9,896.16	6,597.44
COMPUTER & PHERIPERALS	4,69,504.50	68,912.00	-	5,38,416.50	3,23,050	-	3,23,049.90	2,15,366.60
HP PRINTER	13.60	-	-	13.60	8	-	8.16	5.44
FAX MACHINE	1,735.40	-	-	1,736.40	1,042	-	1,041.84	694.56
HEAVY DUTY PRINTER	4,138.00	-	-	4,138.00	2,483	-	2,482.80	1,655.20
SAMSUNG SL-M 2876 ND PRINTER	2,745.60	-	-	2,745.60	1,647	-	1,647.36	1,098.24
FIXED ASSETS -INEP	63,731.30	-	-	63,731.30	9,559.70	-	9,559.70	54,171.61
Total	4,62,65,924.33	85,04,050.00	16,985.00	5,61,30,166.33	35,97,494	3,42,755	39,40,249.62	5,21,89,916.70



ENVIRONMENTAL MANAGEMENT AND POLICY RESEARCH INSTITUTE

Schedule -1 GENERAL FUND

Particulars	Amount
Opening balance	9,48,22,126.64
Less: Grant received in advance reverse	-
Add: Grant received in advance	98,64,242.00
Add: Excess of Income over expenses	26,73,719.88
Total	10,73,60,088.51

Schedule-3 OUTSTANDING EXPENSES

Particulars	Amount
KGID - Karnataka Govt Insurance Dept	270
NGC - GOI Interest Payables	5,01,211
Salary Payable - General	7,70,642
Total	12,72,123

Schedule-5 FIXED DEPOSIT

Particular	Amount
FD SBI - 37546384016	63,45,298
FD SBI - 37546384684	52,87,748
FD SBI - 37982989671	10,14,062
FD SBI - 38013698555	80,00,000
FD SBI - 38013699875	80,00,000
FD SBM - 64207871988	86,60,503
FD SBM - 64207872063	97,43,065
FD SBM - 64207872132	97,43,065
Total	5,67,93,741

Schedule -6 Accrued Intrest

Particulars	Amount
Accrued Interest on 37982989671	14,732
Accrued Interest on 38013698555	2,81,282
Accrued Interest on 38013699875	2,81,282
Accrued Int SBI 37546384016	46,905
Accrued Int SBI 37546384684	39,087
Accrued Int SBM 64026896114	1,700
Accrued Int SBM 64207871988	5,01,891
Accrued Int SBM 64207872063	5,64,627
Accrued Int SBM 64207872132	5,64,627
Accrued Int SBM 64215444765	171
Accrued Int SBI 38123862055	12,909
Accrued Int SBI 38123862124	70,993
Accrued Int SBI 38123862191	37,464
Accrued Int SBI 38162657903	3,707
Accrued Int SBI 38162658000	15,054
Accrued Int SBI 38208648569	5,132
Accrued Int SBI 38274794282	34,684
Accrued Int SBI 38353955775	634
Total	24,76,247



SCHEDULE -7 Advances

Particulars	Amount
Advance for Leased Line BSNL	3,89,400
Advance - KEA Mysore	22,816
Total	4,12,216

Schedule- 8 Sweep account

Particular	Amount
Sweep SBI - 38123862055	6,91,000
Sweep SBI - 38123862124	38,00,000
Sweep SBI - 38123862191	20,35,333
Sweep SBI - 38162657903	2,45,000
Swccp SBI - 38162658000	9,95,000
Sweep SBI - 38208648569	4,44,000
Sweep SBI - 38274794282	50,44,000
Sweep SBI - 38353955775	7,63,000
Sweep SBM - 64215444765	64,619
Total	1,40,81,952

Schedule -9 BANK BALANCES

Particulars	Amount
SBI - Corporate Saral - 36925715887	6,665.73
SBI - DST - CA - 38107686429	(54,508.93)
SBI - EMPRI - CA - 38107677924	75,46,522.07
SBI - ENVIS - CA - 38107688201	(1,54,541.93)
SBI - NGC - CA - 38107687739	(4,64,864.00)
SBM - SB 64026896114	38,990.77
Total	69,18,263.71

Schedule -10 : CREDITORS FOR EXPENSES

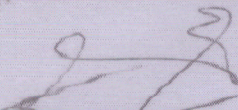
Particulars	Amount
BSNL	6,600
Harsha Security	87,763
Mahesh & Nagaraj	200
Manju Kashyap	35,000
Professional Security Services	18,43,562
Spreadon Studio	(45,135)
Swan Environmental South Pvt Ltd	5,000
Director, Govt. Central Press	(84,169)
Total	18,48,821.00



Notes Forming Part of Accounts

- 1) Balance sheet includes Indo-Norwegian Environment Program's Assets and Liability.
- 2) The Assets and Liability of Indo-Norwegian Program's is included in final accounts as per Government order No.FEE 203 ENV 2008 dated 30.12.2008.
- 3) Assets and liabilities are accounted in Final Accounts based on Independent Chartered Accountant's audited figures as on 31st December 2008.
- 4) Confirmation of Balances of receivables of INEP material stocks and advances not obtained.
- 5) Depreciation on fixed assets is charged on WDV method as per the rates prescribed in Income Tax Act.
- 6) Depreciation has been charged on INEP Assets at 15% as there is no proper identification or classification of asset available.

For NNR & Co
Chartered Accountants


Nithin Mahadevappa
Partner
M.No. 212134



Place: Bangalore
Date: 13/06/2019



ಪರಿಸರ ನಿರ್ವಹಣೆ ಮತ್ತು ನೀತಿ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ (ಎಂಪ್ರಿ)

“ಹಸಿರು ಭವನ”, ದೊರೆಸಾನಿಪಾಳ್ಯ ಅರಣ್ಯ ಆವರಣ, ವಿನಾಯಕನಗರ ವೃತ್ತ,

ಜಿ.ಪಿ. ನಗರ 5ನೇ ಹಂತ, ಬೆಂಗಳೂರು – 560 078, ಕರ್ನಾಟಕ, ಭಾರತ

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