

CMFRI Special Publication No.154  
ISSN 0972-2351

One Decade of  
**Swachh  
Bharat  
Abhiyan**  
at ICAR-CMFRI



Indian Council of Agricultural Research  
**Central Marine Fisheries Research Institute**



# One Decade of **Swachh Bharat Abhiyan** at ICAR-CMFRI

Authors:

Aswathy N., Shyam S. Salim, Sobha V. K. and  
A. Gopalakrishnan



Indian Council of Agricultural Research  
**Central Marine Fisheries Research Institute**

## **One decade of Swachh Bharat Abhiyan at ICAR-CMFRI**

Published by:

**Dr.Grinson George**

Director

ICAR-Central Marine Fisheries Research  
Institute

Post Box no.1603, Ernakulam

North P.O, Kochi 682 018

[www.cmfri.org.in](http://www.cmfri.org.in)

email: [director.cmfri@icar.gov.in](mailto:director.cmfri@icar.gov.in)

Tel no. +91-0484-2394867

Design: Graficreations

Printed at: Print ExPress, Kochi

Publication, Production & Coordination  
Library and Documentation Centre,  
CMFRI

CMFRI Special Publication No.154  
ISSN 0972-2351

2024 ICAR-Central Marine Fisheries  
Research Institute, Kochi  
All rights reserved. Materials contained  
in this publication may not be  
reproduced in any form without the  
permission of the publisher

Citation: Aswathy N., Shyam S. Salim,  
Sobha V. K. and A. Gopalakrishnan  
2024. CMFRI Special Publication  
No.154. ICAR-Central Marine Fisheries  
Research Institute, Kochi. 128 p.

# Contents

1.	Swachh Bharat Abhiyan.....	1
2.	Effective maintenance of office and use of digital technologies ..	6
3.	Cleanliness drives at public places and coastal clean-up activities .....	26
4.	Promoting sustainable sanitation and solid waste management in offices, villages .....	51
5.	Development and promotion of novel technologies .....	62
6.	Swachhata awareness programmes.....	70
7.	Massive community mobilization and public awareness on plastic pollution.....	97
8.	Workshops and Exhibitions .....	101
9.	Celebrations .....	106
10.	Publicity through print, electronic and social media .....	114
11.	Awards / Accolades.....	120
12.	Swachh Bharat Abhiyan at ICAR- CMFRI: Significant achievements in the past decade .....	121
13.	Acknowledgements.....	123
14.	Appendix .....	124

# Foreword



ICAR-CMFRI made commendable contributions in marine fisheries and mariculture research in the country by developing and promoting eco-friendly and low carbon technologies to ensure safe and sustainable fish production and conserve the marine and coastal ecosystem. CMFRI made significant strides in developing and popularising mariculture technologies such as mussel and edible oyster farming, sea weed farming, seed production techniques for high value finfishes and marine ornamental fishes. The institute also develop and promote digital technologies for online data collection, mobile apps for fish sales, wetland identification, GIS technologies for identification of fish farming sites, fish landing centres and automation in fish farming.

The institute is in the forefront for developing and promoting swachh technologies including technologies for rapid conversion of fish wastes, Black Solider Fly Larvae based waste conversion unit and waste to wealth initiatives. Recognising the detrimental effects of plastic waste to marine ecosystem, the institute devised a National Marine Debris Management Strategy to conserve marine ecosystems. CMFRI undertook extensive work on assessing marine litter in Intertidal region, fishing grounds and backwaters along Indian coast line. All necessary steps are taken to ensure safe and effective disposal of waste generated during the research activities of the institute. The institute is also actively involved in promoting commercial production of fish fertilizer from fish wastes through women entrepreneurs.

For the past 10 years, ICAR – Central Marine Fisheries Research Institute (CMFRI) have been steering various activities to support the National Sanitation initiative by successfully implementing the Swachh Bharat Abhiyan. The institute has a proactive Swachh Bharat Abhiyan committee which meticulously co-ordinates and monitors the activities at its Headquarters and centres across the country. On this occasion of one decade of the successful implementation of the National Sanitation Mission in the country, CMFRI is bringing out the Special Publication One decade of Swachh Bharat Abhiyan at ICAR-CMFRI to portray the significant initiatives and achievements of the institute. I hope this book will be a valuable contribution for advancing the Swachh Bharat Abhiyan programmes of the institute. I appreciate the efforts taken by the authors for bringing out this timely publication.

A handwritten signature in green ink, appearing to read 'Grinson George', with a long horizontal line extending from the end.

Dr Grinson George  
Director, ICAR-CMFRI

# Preface

The ICAR-Central Marine Fisheries Research Institute, the premier research institute in the country is involved in marine fisheries and mariculture research in the past several decades. The institute made significant strides in developing several noteworthy technologies aimed at augmenting and sustaining the fish production and livelihoods of coastal fisherfolk. The institute is also instrumental in developing and popularising eco-friendly and low carbon technologies for sustaining the marine and coastal ecosystems.

In fulfilling the goals of the National Sanitation Campaign (Swachh Bharat Abhiyan) announced by the Hon'ble Prime Minister on 2nd October, 2014, ICAR-CMFRI took great initiatives to ensure the smooth conduct of the campaign with the active involvement of the staff members across the maritime states of the country. Central Marine Fisheries Research Institute with its headquarters at Kochi and 11 Regional/Research Centres and Krishi Vigyan Kendra all along the maritime states has chalked out elaborate plans to carry out the National Sanitation Campaign (Swachh Bharat Abhiyan). CMFRI successfully implemented the Swachh Bharat Abhiyan by developing and promoting novel technologies for swachhta, waste to wealth initiatives, public awareness programmes, coastal clean-up drives involving coastal communities, awareness programmes through cleanliness drives, competitions, awareness talks, webinars, rallies, workshops, exhibitions, demonstrations, art installations and publications.

As the country celebrates one decade of the successful implementation of the Swachh Bharat Abhiyan, ICAR-CMFRI brings out this publication One decade of Swachh Bharat Abhiyan at ICAR-CMFRI. The book portrays the significant initiatives taken up ICAR-CMFRI for the Clean India Movement of the country in the past decade. We hope this book will be a humble contribution towards promoting the Swachhta goals of a clean and hygienic India. We express our sincere thanks to all those who have contributed for the successful implementation of the Swachh Bharat Abhiyan in CMFRI.

Authors



# Swachh Bharat Abhiyan

The Swachh Bharat Abhiyan (Clean India Mission) is the most significant cleanliness campaign by the Government of India. The campaign was launched on 2nd October 2014 by the Honourable Prime Minister Shri Narendra Modi in New Delhi. The country-wide campaign initiated by the Government of India was aimed at eliminating open defecation, improve solid waste management and to create Open Defecation Free (ODF) villages to achieve the dream of a 'Clean India' by Mahatma Gandhi. Prime Minister Shri Narendra Modi himself initiated the cleanliness drive, making Swachh Bharat Abhiyan a mass movement across the nation. He gave the mantra of 'Na gandagi karenge, Na karne denge.'—neither litter, nor let others litter.

The Swachh Bharat Mission covered all rural and urban areas of the country. The urban component of the mission is implemented by the Ministry of Housing and Urban Affairs (MHUA), and the rural component by the Ministry of Drinking Water and Sanitation. The Swachh Bharat Mission Gramin Phase I (2014-2019) was aimed at eradication of manual scavenging, generating awareness and bringing about a behavioural change regarding sanitation practices, and augmentation of capacity at the local level. In 2019, the mission celebrated the construction of over 100 million individual household toilets and declaring more than 6 lakh villages ODF. The second phase of the mission (2020-2025) is aimed at transformation of the villages from ODF to ODF plus, sustain the open defecation-free status, improve the management of solid and liquid waste, and to improve the lives of sanitation workers. The key thrust areas of SBM (U) included elimination of open defecation, eradication of manual scavenging, modern and



scientific municipal solid waste management, enhancing the capacity of urban local bodies (ULBs) to create an enabling environment for private sector participation. The ultimate goal of the first phase of SBM(Urban) was to achieve Open Defecation Free (ODF) city or ward and 'Swachh Bharat Mission Urban 2.0' is aimed at making a city completely free of garbage.

The Swachh Bharat Abhiyan turned into a National Movement with wide spread support from citizens across the country. All the government departments are actively involved in implementing the swachhata campaigns across the country. Millions of people joined the cleanliness initiatives of the government departments, NGOs and local community centres to make the country clean. The Swachh Bharat Abhiyan achieved wide popularity through the massive cleanliness programmes organised with community participation, innovative campaigns, awareness programmes, and *Swachh Survekshan* awards based on sanitation and cleanliness surveys. *Swachh Survekshan* is a ranking exercise done by the Government of India to assess rural and urban areas for their levels of cleanliness and active implementation of *Swachhata* mission initiatives in a timely and innovative manner. *Swachh Survekshan* intends to foster a spirit of healthy competition among towns and cities to improve their service delivery to citizens and creating cleaner cities and towns.

## **A decade of Swachh Bharat Abhiyan: Highlights of ICAR-CMFRI initiatives**

In fulfilling the National Sanitation Campaign (Swachh Bharat Abhiyan), announced by the Hon'ble Prime Minister, ICAR-CMFRI took initiatives to ensure wide participation and smooth conduct of the campaign. Central Marine Fisheries Research Institute with its headquarters at Kochi and 11 Regional Centres /Research Stations all along the maritime states chalked out elaborate plans to carry out the National Sanitation Campaign (Swachh Bharat Abhiyan) launched by the Government of India. All Heads of Divisions and Section-in-Charges were directed to depute 3-4 staff members/scholars from the concerned Division/ Sections to ensure wide participation and smooth conduct of the campaign.

The Swachh Bharat Campaign of ICAR-CMFRI commenced on 15th December 2014 with an awareness campaign in the Ponjikkara ward of Mulavukadu Panchayat in Ernakulam district. CMFRI approached the Panchayat President and other officials in the locality for organising the cleanliness drive. Accordingly, a cleanliness drive was conducted at the precincts of the Ayyappa Temple. Dr.A.Gopalakrishnan, Former Director of the institute inaugurated the programme by providing two garbage bins to the temple authorities to segregate and dispose degradable and non-degradable wastes. Besides the active participation of staff members of CMFRI, the local *Kudumbasree* (SHG) members also participated in the cleanliness programme. This drive was just a beginning of the institute's strive towards achieving the 'Clean India' goal of the Swachh Bharat Mission in the next decade.

For the past 10 years, ICAR – Central Marine Fisheries Research Institute (CMFRI) has been steering various activities to support India's universal sanitation initiative by adopting the Swachh Bharat Abhiyan-“Ek Kadam Swachhata Ki Ore”, which translates to “One Step Towards Cleanliness” aiming to drive the nation towards cleanliness and good habits. Every small



action towards cleanliness is contributing in inching closer to achieving the goal of a clean and hygienic India.

The institute has a proactive Swachh Bharat Abhiyan committee in place which meticulously coordinates and monitors the activities at its centres across the country. ICAR-CMFRI showcased the need for Clean India through its various programmes which includes cleanliness drives across the public utility avenues, developing technologies aimed at waste reduction, imparting awareness and reaching out to public through media and involvement of children and youth by inviting inspiring change agents and showcasing changes manifested from civic societies.

CMFRI promotes digitization in all aspects of official functioning through effectively implementing e-office, e-payments for sales, digitization of library, digital punching machine with barcode enabled identity cards for recording attendance, installation of digital display boards at strategic spots in offices for broadcasting technological and other information, development and promotion of digital technologies such as Fish Catch Survey and Analysis (FCSA) software for real-time data collection and processing of fish catch data, innovative mobile apps for marine fish species identification and quantification from visual images, mobile apps developed to promote fish sales of stakeholders, mobile apps for water quality analysis, automation systems for fish farming etc. Effective space utilization is ensured by timely disposal of office scrap and other waste materials. The institute takes all necessary steps to ensure safe and effective disposal of waste generated during the research activities.

ICAR-CMFRI has always been striving for the benefit of stakeholders in the fisheries sector.



With its mandate to promote sustainable fish production from the marine and coastal waters of the country, the institute has developed several eco-friendly and low carbon technologies for fishing and farming. Aligning with the Swachh Bharat goals, the institute has developed and promoted several novel technologies for conversion of waste to wealth in the past one decade. The technology for valorization of organic waste using black soldier fly larvae (BSFL) is a novel technology for converting organic wastes including fish sampling wastes into protein and lipid rich aquafeed ingredients and compost. An indigenous microbial consortium and a novel composting technology that can efficiently convert marine fish waste into valuable organic fertilizer was also developed by the institute. CMFRI is also actively involved in promoting the commercial production of fish fertilizer from fish wastes as a viable option for income generation to women entrepreneurs and rural youth. Soil-less medium using composted pressmud, a by-product from sugar mills developed by KVK Ernakulam of CMFRI could be used as an effective alternative to soil and could address the scarcity of soil for organic farming in cities. CMFRI also promoted growing of Grass carp fish in water bodies as an environmentally friendly solution to control aquatic weeds.

During the swachhata campaigns, cleanliness drives were regularly undertaken at workspaces, office premises, residential quarters', trainees' hostels, guest houses, canteens, and public utility areas such as bus shelters, fish landing centres, beaches, parks, schools and walkways. The institute took commendable efforts to promote clean and healthy oceans by organising coastal clean-up drives and onboard clean-up drives during the world environment day and world ocean day with the active involvement of local bodies, fishers, students and various organisations. The institute undertook extensive work on assessing the marine litter in intertidal region, fishing grounds and backwaters along the Indian coast line and also in gut of marine organisms since 2012. Measures to encourage recycling and reuse of plastics and promoting production and sale of eco-friendly bags to discourage single use plastic use was also undertaken as part of the swachhata campaigns.

Public awareness campaigns were organised through door-to-door sanitation awareness programmes in coastal villages and residential areas of fisherfolk, awareness programmes on plastic and marine pollution, formation of human chains, public signing campaigns, walkathons, cycle rallies, bike rallies and expert talks on swachhata. The massive public

awareness programmes on plastic pollution across the coastal states of the country with the active involvement of local bodies, officials of various departments, NGOs, women self-help groups and educational institutions is a commendable contribution towards swachhata by the institute. Innovative approaches to swachhata awareness through art was also adopted by organising waste to art competitions, exhibitions, performing arts including traditional folk dances, wall paintings and art installations. A huge art installation 'Fish Cemetery' set up by CMFRI at Fort Kochi in Kerala to create awareness against dumping of plastic wastes into sea and on public places garnered huge public attention. Organic farming activities at office premises and residential colonies and planting of trees to symbolise the commitment towards a greener and healthier environment were also part of the swachhata awareness initiatives.

Under the *Safai Mitra* programme, honouring and supporting the house keeping staff and sanitation workers were done through awareness classes, preventive health check-ups, supply of safety gear and presenting mementoes at CMFRI HQ and regional centres and research stations of CMFRI.

Sustainable sanitation in fishing villages and fish landing centres were promoted through construction of toilets in fish landing centres, distribution of garbage bins in fishing villages and sanitation awareness programmes. Workshops on waste to wealth, awareness on health and hygiene to women self-help group members, effective household solid waste management to promote hygienic environment, processing of household bio-degradable waste for effective use in small-scale farming in rural households, training on crop residue management by vermicomposting etc. were also undertaken as part of the campaigns. Fuel free incinerators, sanitary napkin incinerators, biogas plants and vermicompost pits were installed in offices and residential campuses to promote effective waste disposal. Exhibitions, trainings and workshops were also conducted at CMFRI headquarters, regional and research centres and Krishi Vigyan Kendras for the benefit of local people. *Kisan Diwas* and *Swachhata Diwas* were celebrated every year with the active participation of fishers, farmers, officials from various departments along with the *Swachhata Pakhwada* campaigns. The fishers and fish farmers were felicitated during the *Kisan Diwas* celebrations and were encouraged to share their experiences on sustainable sanitation measures in the villages.

Ten years down the lane, ICAR-CMFRI made significant impacts in the Clean India movement of the country through successful implementation of Swachh Bharat Abhiyan and received several accolades. The institute received the prestigious *Swachhta Pakhwada* award in 2018 by winning second prize at national level among the institutes functioning under the Indian Council of Agricultural Research (ICAR). CMFRI secured first place in the *Swachhta Pakhwada* award / ranking of ICAR institutes in 2022. The awards were given in recognition to the institute's contributions through the development and promotion of eco- friendly and green technologies, innovative technologies for conversion of waste to wealth, efforts to create awareness among the public on the dangers of plastic litter in marine ecosystem through massive public awareness programmes and activities towards promoting cleanliness in offices, public places, coastal households as well as ensuring large scale participation of various organisations and citizens in the Swachh Bharat campaigns.

# Effective maintenance of office and use of digital technologies

The Special Campaigns organised under the Swachh Bharat Abhiyan focus on cleanliness at workspaces, effective utilisation of space, scrap disposal and digitisation. ICAR-CMFRI promotes digitization in all aspects of official functioning through effectively implementing e-office, e-payments for sales, digitization of library, digital punching machine with barcode enabled identity cards for recording attendance, installation of digital display boards at strategic spots in offices for broadcasting technological and other information, development and promotion of digital technologies such as Fish Catch Survey and Analysis (FCSA) software for real-time data collection and processing of fish catch data, innovative mobile apps for marine fish species identification and quantification from visual images, mobile apps to promote fish sales of stakeholders, mobile apps for water quality analysis, automation systems for fish farming etc.

Stock-taking on digitization of office records, e-office implementation as well as physical weeding out of files, disposal of old records, furniture and other junk materials were done regularly. Cleanliness drives at work places, labs, hatcheries, store rooms, and office premises were also regularly done. Effective space utilisation was ensured at the workspaces, labs and office premises by disposing of junk. During the Swachhata campaigns, awareness programmes were conducted for the staff members through organising yoga sessions, competitions for staff and students and organising talks, webinars and workshops. Safe and effective disposal of solid waste at office and residential quarters were promoted through the installation of fuel-free incinerators, bio-composting units and biogas plants. The institute has taken measures to ensure safe disposal of waste generated during the research activities in its headquarters as well as regional centres. The institute also collaborates with local governments in solid waste disposal and management activities.

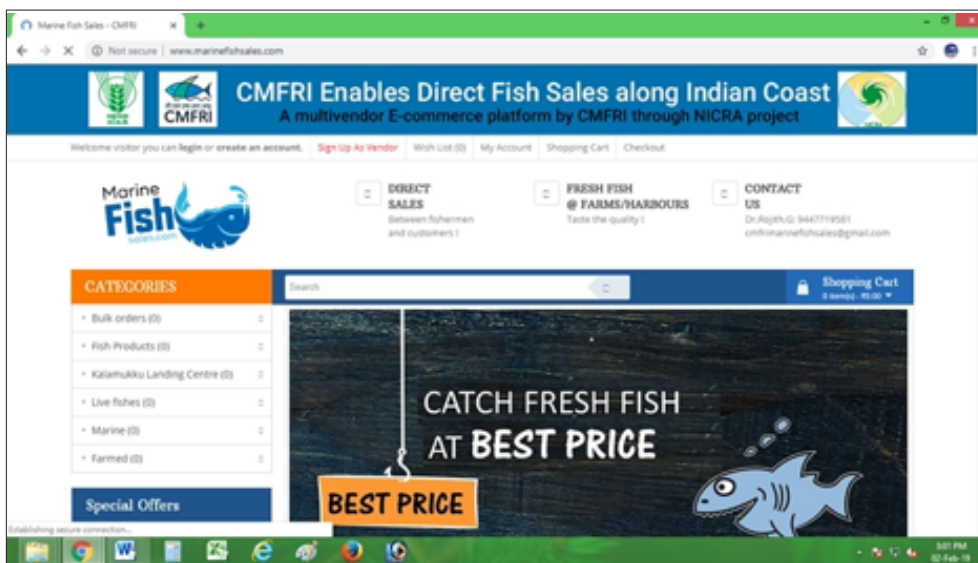
## ICAR-CMFRI initiatives towards digitization

Nearly 80% of official works have been digitized and official communications to the staff and other institutions etc. has been done either through e-office, email and WhatsApp messages to avert paper usage and protect the environment and nature. With the aim to achieve the vision of Digital India, ICAR-CMFRI is in the forefront to be digitally empowered and various steps have been initiated for the same. The institute has developed mobile apps and softwares for improving the efficiency in research data collection, analysis and digital technologies for supporting and enhancing the income of stakeholders. The media cell of the institute gives wide publicity to the institute technologies, citizen centric activities and achievements through

digital media, social media and WhatsApp broadcast messages. Some of the highlights of the initiatives towards digitisation are as follows:

## E-commerce Website and Mobile App

The multivendor E-commerce website ([www.marinefishsales.com](http://www.marinefishsales.com)) and associated android app (marinefishsales) developed by the ICAR-Central Marine Fisheries Research Institute (CMFRI) through the National Innovations on Climate Resilient Agriculture (NICRA) project was released by Dr.Trilochan Mohapatra, Director General, ICAR & Secretary DARE, on 7th August 2018 at NASC, New Delhi. The web application and mobile app is an adaptation strategy to improve the income of fishermen and to help them cope with the employment and income loss due to adverse climatic events.



<http://www.marinefishsales.com/>

## **mKRISHI® Fisheries mobile app**

mKRISHI® Fisheries is a mobile app developed by Tata Consultancy Services (TCS) Innovation Lab – Mumbai, in collaboration with ICAR- Central Marine Fisheries Research Institute and Indian National Centre for Ocean Information Services (INCOIS) Hyderabad. This app is a result of multi-dimensional research and field work involving the expertise of all the partner organisations. INCOIS generates Potential Fishing Zone (PFZ), a fish shoals prediction information based on the remote sensing data received from NOAA and Indian satellites, sea surface temperature and the presence of phytoplankton which form the food of several fish species. mKRISHI® Fisheries app consolidates this information and presents advisories in local language, with easy-to-use icons on Java and Android mobile phones. Mumbai Research Centre of ICAR- CMFRI piloted this service in 56 fishermen societies in Raigad, Maharashtra. Fishermen can use this service to plan their fishing trip and venture into sea which helps to reduce unnecessary trips and the associated cost of diesel, ice and labour. From a study conducted in 13 fishermen societies, ICAR- CMFRI estimated that it resulted in the saving of upto 30% in diesel costs which has huge benefits in terms of environmental impact.

## **TurbAqua mobile app**

TurbAqua is a mobile application developed by CMFRI to monitor water quality. The app works in conjunction with a hand-held, pocket-sized 3D printed Secchi disc fabricated by Plymouth Marine Laboratory, UK. The Secchi disc is used to measure the clarity of water. On operating the Secchi disc, the operator inputs data like transparency depth, and the app gives a picture of the water quality parameters like water temperature, water colour and turbidity. The application is of immense potential in aquaculture as well as in water quality related studies as it gives almost accurate information based on the colour changes observed in the water body.

## **Open Access Institutional Digital Repository (Eprints@CMFRI)**

Publications of the Institute's staff members in journals, conferences, seminars, symposia, technical reports, thesis, patents and related publications are available in digital form in CMFRI Institutional Repository i.e. 'Eprints@CMFRI'. This repository is administrated by CMFRI Library and Documentation Centre. Eprints@CMFRI is ranked second among all the global open access repositories on fisheries and marine sciences. It is ranked second among the Indian Open Access Repositories in all streams. Another digital repository 'DSpace@CMFRI' for storage and retrieval of in-house collection of old rare volume books and out of print documents is also available which contains more than 6000 documents. CMFRI Digital Library hosted in CMFRI webpage is an aggregate of multiple digital platforms such as 'Eprints@CMFRI', 'DSpace@CMFRI', 'JGate@CMFRI', 'CMFRI Library Catalogue Liberty', 'Aquatic Sciences and Fisheries Abstracts' (ASFA), 'National Digital Library of India (NDLI)', 'Indiastatagri' etc. Workshops and trainings on Digital Library Management were conducted to share new concepts of digital storage of information as well as retrieval, management of the challenges in digital libraries in collection, development, organization, utilization and services of information, networking of libraries, consortia mode of acquisition and maintenance of digital libraries and developing soft skills of library professionals.



## Cashless transactions: CMFRI Received 'Cashless ICAR Institute Award'

ICAR-Central Marine Fisheries Research Institute (CMFRI) received 'Cashless ICAR Institute Award' from Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers Welfare, for implementing cashless transactions in the institute. The award comprises the citation and a cheque of Rs.5 lakhs. The Krishi Vigyan Kendra, Ernakulam of ICAR-CMFRI also received the award for cashless transactions.



Dr. A. Gopalakrishnan, Director, CMFRI receiving the Cashless ICAR Institute Award from Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers Welfare



## GIS-based database on fish landing centres in India to ensure security of fishermen at sea

The ICAR- Central Marine Fisheries Research Institute (CMFRI) developed a GIS-based database about the marine fish landing centres along the Indian coast. Aimed at ensuring the safety and security of the fishermen at sea, the ICAR-CMFRI prepared the inventory of all the fish landing centres in the country, describing their GIS (Geographic Information System) location, types of fishing activity, seasonality of fishing and the extend of fishing operations from each fishing centres. The institute handed over the database to the Indian Navy in order to make the security measures in coastal regions easier. Dr. A.Gopalakrishnan, Former Director, ICAR-CMFRI handed over the document to Vice Admiral A. R. Karve, AVSM, Flag officer Commanding-in-Chief, Southern Naval Command, Kochi. The database includes details of traditional landing



ICAR-CMFRI handing over the database to Indian Navy

centres and modern fishing harbours and is expected to be a major development towards ensuring safety and security of fishermen and monitoring intrusion into Indian territorial waters from neighbouring countries.

## Fish Catch Survey and Analysis (FCSA) software

ICAR-CMFRI developed a user-friendly web-based application software called Fish Catch Survey and Analysis (FCSA). The software enables tablet-based data collection from the fish landing centres, minimise paper usage in survey-based research and conserves time in data analysis. FCSA consists of different segments, viz., online data entry using tablets, utilities for scrutiny of data, analysis, estimation and various report generation. It allows a multilevel user system ranging from field observers who collect the real-time data from the landing centres to the system administrator who controls the whole system. The FCSA tablet interface is used by field observers who visit various marine fish landing centres to collect landing data. The work programme for the field observer received from FCSA is displayed on the first page once that user is logged in, and from that point, the user can suitably choose the landing centre, date and period for which the survey data are to be collected and entered.

## Science and Technology Innovation Hub (STI Hub)

A Science and Technology Innovation Hub (STI Hub) was established at ICAR-CMFRI, Kochi with state-of-the-art digital training hall, Entrepreneur Consultancy Cell and mobile training unit with ICT facilities through the Department of Science and Technology (DST) funded project. The data documentation centre of the Science and Technology Innovation Hub (STI Hub) facilitates digitization and documentation of fisheries technologies and success stories of technological interventions of the institute. The state-of-the-art digital training hall and Entrepreneur Consultancy Cell enables effective technology dissemination and ensures sustainability of fishery based entrepreneurial technology interventions. The Science and Technology Innovation



Training hall with state-of-the-art digital facilities at STI Hub at CMFRI, Kochi

hub is actively involved in promoting waste to wealth technologies developed in the institute for the effective conversion and utilization of fish wastes to fertilizer and generating income for the fisherfolk, fish farmers and women entrepreneurs.

## Effective maintenance of office and cleanliness at workspaces and office premises

ICAR-CMFRI takes all necessary measures to ensure effective functioning of the office by weeding out of physical files, timely closure of e-files and cleanliness and hygiene at work spaces. During the COVID-19 pandemic, the institute has taken all necessary steps to ensure hygiene and sanitation in the campus. *Swachhta Pakhwada* campaigns in all the centres were undertaken during the pandemic years following COVID -19 guidelines stipulated by the Government of India. The activities were carried out by the staff members wearing gloves, masks and by maintaining physical distance. Automatic hand sanitisers are installed at main entrance, lift areas, wash rooms, as well as conference halls of the institute. Smart temperature monitoring system is installed at the front entrance of the institute HQ for monitoring the temperature of the staff and visitors. Digital punching machines with bar code reader facility is introduced for improving the efficiency in recording attendance. Digital display boards are installed at all strategic spots and conference rooms to facilitate effective dissemination of technological and other information.



Smart temperature monitoring system and digital boards at ICAR-CMFRI, Kochi

## Cleanliness drives at workspaces and office premises

The campus of ICAR-CMFRI HQ and regional centres are research stations at all locations are always kept clean and maintained aesthetically by the whole hearted involvement of all the staff members and housekeeping staff. The office premise and garden of ICAR-CMFRI is being maintained in a greenish manner after successful implementation of Swachh Bharat program through judicious utilization of water and reuse of kitchen waste water. Bio- composting units and bio gas plants are installed at various centres of CMFRI for processing of biodegradable wastes and fish waste generated in research laboratories. Swachh Bharat Abhiyan activity was carried out regularly by dedicating one day in a week to clean the work spaces and office premises.



Cleaning the entrance of CMFRI HQ, Kochi





Cleanliness drive at CMFRI HQ, Kochi

Ernakulam Krishi Vigyan Kendra functioning under ICAR- CMFRI regularly conducts cleanliness drives at KVK premises in Narakkal during the Swachhata campaigns. Plastic wastes deposited during high tides at the premises were removed and sorted for disposing. Awareness to staff members was given to segregate biodegradable and non-degradable wastes and to avoid unnecessary burning of plastic wastes which create environmental pollution.



Campus cleaning at KVK, Ernakulam



Cleanliness drive at premises of Vizhinjam RC of CMFRI



Cleanliness drive at Vizhinjam RC of CMFRI



Cleanliness drive at foot path near Calicut RS of CMFRI

During the swachhata campaigns weeding out of physical files and closure of e-files were done systematically. Cleanliness drives were regularly conducted at workspaces, corridors, labs, store rooms, terrace areas, aquariums, hatcheries, trainee's hostels, residential quarters, library and drainage cleaning activities in the campuses were also done. The old files, unused expired laboratory consumables, broken glasswares, shredded leaves and tree branches were cleared off to make the campuses clean and green. The staff members also carried out cleanliness campaigns in their respective residential colonies throughout the *Swachhata Pakhwada* celebrations.



Cleanliness drive at Mumbai RS of CMFRI



Cleanliness drive at workspaces in CMFRI HQ



Cleanliness drive at MRS of CMFRI, Chennai

The Special Campaigns on *swachhata* is primarily aimed at the basic maintenance of offices, scrap disposal and effective space utilization. During the Special Campaigns, cleanliness drives at labs, store room areas, terraces, areas where discarded materials are dumped and drainage cleaning was also done by the staff. The discarded office furniture kept for condemnation, office scrap and other unused items were removed to ensure effective space utilization and timely auctioning done to generate revenue. The active involvement of students and public are also ensured during the cleanliness campaigns. The staff of Tuticorin RS of CMFRI organised cleanliness drive with the involvement of students and KVK staff at office premises of TRS of CMFRI during the Swachhata Hi Seva 2024 campaign



Cleaning the office premises with students at Tuticorin RS of CMFRI



Cleanliness drives at work spaces and labs in various centres



Cleanliness drive at CMFRI International Trainees Hostel area, Mandapam Camp



Drainage cleaning activities at CMFRI, Mandapam RC



Cleaning store room area at Mandapam RC



Cleanliness drive at office premises of Karwar RS of CMFRI

At Visakhapatnam RC of CMFRI canteen premises, parking area, lawn area, office, hatchery area and mariculture laboratory premises were cleaned during the Swachhata campaigns. During cleaning process plastic waste, noxious weeds, dry leaves and other waste scraps were collected and disposed.



Cleanliness drive at Visakhapatnam RC of CMFRI

## Swachhata awareness among the staff members

ICAR-CMFRI took several initiatives to propagate the swachhata message among its staff members. During the Swachh Bharat Abhiyan campaigns, Swachhata awareness to staff and students of CMFRI was conducted through administering pledges at all offices. Quiz, painting, essay competitions, slogan writing and debates were conducted to create swachhata awareness among the staff members. Swachhata talks, workshops, seminars and webinars were also organised. Yoga sessions and health check-ups were also organised for improving the health and well-being of staff members.

## Swachhata pledge at various centres

During the Swachhata campaigns, the staff members of the institute took Swachhata pledge to express their commitment towards making the workplace, villages and localities clean in the endeavour to achieve a clean India.



Swachhata pledge at CMFRI HQ, Kochi



Swachhata pledge at Calicut RS of CMFRI

During the swachhata campaigns plant samplings were distributed to staff members in various centres and pledge was taken to protect the plants for the well-being of nature and mankind.



Swachhata pledge at Vizhinjam RC of CMFRI



Swachhata pledge at Mandapam RC of CMFRI



Swachhata pledge at MRS of CMFRI, Chennai

Various competitions including slogan writing, essay competitions, debates, storytelling, quiz competitions etc. were organised for staff members to propagate the swachhata message. ICAR-CMFRI, Kochi conducted a quiz competition for staff members in connection with the Swachh Bharat Abhiyan Special Campaign 3.0 on the theme Swachh Bharat: Towards a Garbage-Free World.



Quiz competition for staff at CMFRI, Kochi



Prize distribution for winners of Quiz competition at CMFRI, Kochi



Winners of quiz competition at CMFRI HQ Kochi.

During the swachhata campaigns drawing, painting, essay writing and slogan writing competitions were also conducted in various centres. During the Swachhata Hi Seva 2023 Campaign, an essay writing competition was conducted for the staff of Calicut RS of CMFRI on the topic Swachh Sagar Swachh Bharat.



Essay writing competition for staff at Calicut RS

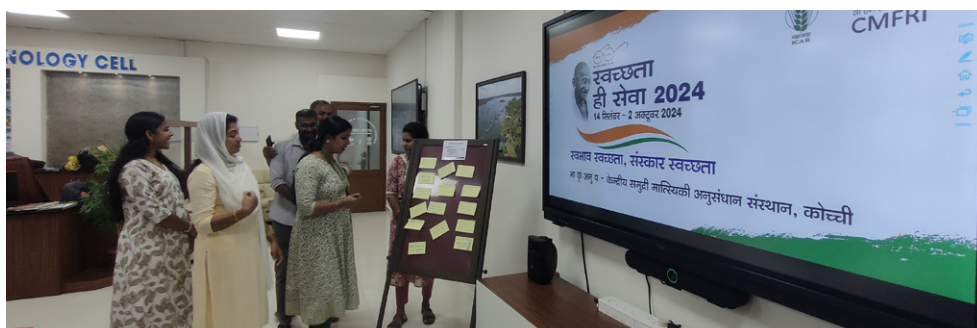


Drawing competition for office staff at Veraval RS



Prize distribution to staff at Mumbai RS

Swachhata Slogan writing competitions were organized for the staff members at various centres to create awareness about cleanliness, personal hygiene etc. The best slogans were given prizes and selected for display at prominent places and website.



Swachhata slogan writing at CMFRI HQ



Swachhata awareness to staff members at CMFRI HQ, Kochi

Yoga and swachhata are treated similar as yoga help to clean the minds, swachhata helps to clean the environment. Preventive health check-ups and yoga sessions were organised regularly at CMFRI HQ and various centres to improve the health and wellbeing of the staff members. The yoga sessions were aimed to educate the staff members on the benefits of yoga in promoting physical fitness and mental well-being.



Yoga sessions for staff at CMFRI, Kochi

## Awareness talks/Webinars for staff members

Awareness talks and webinars were arranged for staff members during the Swachh Bharat campaigns. Oral talks on e-office implementation, seafood waste management, bioplastics, household solid waste management etc. were organised for the staff members.



A talk on e-office implementation to staff during the special campaign

ICAR-CMFRI, Kochi organised a webinar “A vibrant India with effective disaster management -lessons learnt and moving forward” on 29th December, 2020 by Dr.Muralee Thummarukudi, Operations Manager, Crisis Management, UNEP, Geneva.



Dr.Muralee Thummarukudi, Operations Manager ,UNEP, Geneva at CMFRI, Kochi

# Cleanliness drives at public places and coastal clean-up activities

Cleanliness drives at public places including roads, parks, schools, fish landing centres, fishing villages, religious places, onboard coastal clean-up drives and beach cleaning activities were regularly undertaken by the staff across the coastal states of the country. The cleanliness drives at public places and coastal clean-up drives were undertaken with the active involvement of local bodies, officials of various departments, NGOs, women self-help groups and educational institutions to create awareness on the swachhata campaigns and to encourage the citizens to keep cities, public places, oceans and beaches litter free to achieve the clean India goal. The CMFRI staff also took initiatives to clean extremely difficult to clean areas in many places with the support of local organisations which aroused interest and appreciation from local people.

## Cleanliness drives at public places

During the Swachhta Pakhwada campaigns cleanliness drives at public places including roads, parks, schools, fish landing centres, bird sanctuaries, bus shelters, play grounds, religious places etc. were conducted to spread the swachhata message to public. Active participation of citizens including students, fisherfolk, women self-help group (SHG) members, NGOs, officials from various departments and organisations in the locality were ensured in the cleanliness programmes. The staff of CMFRI also undertook sanitation rallies and drainage cleaning activities during the campaigns.

## Cleanliness drive at Ayyappa temple premises, Mulavukadu, Kochi and initiation of Swachh Bharat Abhiyan campaigns

The Swachh Bharat Abhiyan Campaign of ICAR-CMFRI, Kochi was initiated by organising a cleanliness drive at the Ayyappa temple premises, Mulavukadu, Kochi. Dr. A. Gopalakrishnan, Former Director of the institute inaugurated the programme by providing two garbage bins for the temple authorities to segregate and dispose degradable and non-degradable wastes. The staff members of CMFRI along with the local Kudumbasree (SHG) members actively participated in the programme. The campaign was carried out with zeal and was well appreciated by the temple authorities and panchayat members.



Cleanliness drive at Mulavukadu, Kochi



Cleanliness drive at Mulavukadu, Kochi

## Cleanliness drive at Kalamukku landing centre

The staff of ICAR-CMFRI, Kochi regularly conducted cleanliness drives at Kalamukku fish landing centre in Ernakulam during the Swachhta Pakhwada campaigns. The campaigns were conducted with the intention of creating awareness on cleanliness in the fish landing centres and fishing harbour among the fishers and other stakeholders.



Cleanliness drive at Kalamukku fish landing centre

## Cleanliness drive at Abraham Madamakkal road, Kochi

The staff of ICAR-CMFRI, Kochi regularly conducts cleanliness drives at Abraham Madamakkal Road in front of CMFRI office.



Cleanliness drive at Abraham Madamakkal road, Kochi

The staff of Central Marine Fisheries Research Institute (CMFRI) undertook cleanliness drive at several public places in Ernakulam district including Rajendra Maidan, Gandhi Square, Durbar Hall ground, High Court Junction bus stand, Mangalavanam bird sanctuary etc. during the Swachhata Pakhwada campaigns.

## Cleanliness drive at Mangalavanam bird sanctuary, Kochi

The staff of CMFRI, Kochi regularly conducts cleanliness drives at the premises of Mangalavanam bird sanctuary during the Swachhata Pakhwada campaigns. Mangalavanam is an ecologically sensitive area situated at the centre of Cochin city behind the CMFRI HQ office building. It also houses a shallow tidal lake connected with Kochi backwaters by a canal. It is a nesting ground for a large variety of migratory birds and supports many types of mangroves. Mangalavanam plays a crucial role in keeping the city's air pollution under check.



Cleanliness drive at Mangalavanam bird sanctuary, Kochi



Cleanliness drive at Mangalavanam bird sanctuary, Kochi



Cleaning of high court junction bus shelter, Kochi



Cleanliness drive at public places in Kochi



## Cleanliness drive at Arignar Anna Zoological Park, Tamil Nadu

The Swachhata Hi Seva Special Campaign 3.0 was conducted by Madras Regional Station of ICAR-CMFRI at Arignar Anna Zoological Park, the best scientifically managed zoo of the country and the largest in South-East Asia located at Vandalur, Chengalpattu District of Tamil Nadu. The programme was conducted with the tagline “Garbage and Litter Free Zoo”. The zoo premises





surrounding aquarium and reptile enclosures were cleaned thoroughly free of garbage and plastics. The staff members, forest guards, zoo curators, zoo biologists and local safai mitras participated in the cleaning activity. The visitors and school children were sensitized regarding prevention of littering and overall cleanliness with an aim to provide a clean, green, healthy environment for all classes of animals in the zoo.

During the Swachhata Pakhwada campaigns cleanliness drives were organised at religious places with the involvement of local people and religious leaders.

## Eradication campaign of 'Seemai Karuvelam' (*Prosopis juliflora*) in Mandapam

Seemai Karuvelam (*Prosopis juliflora*) is an invasive tree that causes enormous damage to the environment and inhibits the growth of indigenous plants. The eradication campaign of 'Seemai



Before and After eradication



Cleanliness drive at playground area, Mandapam

Karuvelam' under "Swachh Bharat Abhiyan" activities at the residential area of Mandapam Regional Centre of ICAR-CMFRI was undertaken for the benefit of environment and society from February 2017 onwards. During May 2017, staff and contractual members of the centre actively participated in complete eradication of 'seemai karuvelam' within the residential area of the Regional Centre. A Hydraulic earth mover was also engaged in the eradication activity.

The staff of Mandapm RC of CMFRI also organised cleanliness drives at paly ground areas and residential campus at Mandapam.

## Cleanliness drive at Roche Park and Inigo Nagar Bus Stop, Tuticorin

Roche Park, and Inigo Nagar Bus Stop at Tuticorin were cleaned during the Swachhata campaigns. The campaigns aroused interest of local people who were surprised to see the CMFRI staff cleaning the areas, and appreciated them for the cleanliness campaign.



## Sanitation awareness rally and cleanliness drive at Veraval Fishing Harbour

A sanitation awareness rally was organized from Veraval Research Station to Veraval fishing harbour to sensitize the fisher folks on the need for sanitation. A massive cleanliness drive was also organized in this connection by actively involving the fisherman of the area. The Veraval centre team including the fisherman cleaned the harbour and cleared the debris and fish wastes. The two teams with the help of Veraval Municipal Corporation also cleaned certain



Cleaning of clogged drainage in Veraval



Sanitation awareness rally in Veraval



Cleaning of Bhidia circle and Bandar in Veraval

difficult to clean areas in Veraval, which had been used by the local people and industries for dumping domestic and industrial wastes, which had not only polluted the area but also choked the drainage leading to stinking and overflow. The cleanliness drive at this area was highly appreciated by the local people and the authorities, who swore to keep the area clean and out of trash and garbage

## Coastal clean-up drives

ICAR-CMFRI is actively involved in coastal clean-up activities through cleaning the coastal waters and beaches, onboard clean-up drives and awareness programmes on coastal pollution. The institute regularly conducts vessel-based clean-up drives in the coastal waters and beach cleaning activities. Coastal clean-up drives were undertaken with the active participation of local people, governmental and non-governmental organisations, and school and college students during the world environment day and world ocean day celebrations. Pamphlets and brochures on marine and coastal pollution were distributed to the local people during the cleanliness campaigns. Banners were displayed in the beach areas to sensitize the general public and tourists regarding the impact of anthropogenic activities on polluting the coastal environment. Kuzhuppilly, Narakkal and Fort Kochi beaches in Kochi, Konadu beach in Calicut, Pattinapakkam beach, Nochikuppam coastal village and Kovalam beach in Chennai, Pirappanvalasai beach in Ramanathapuram district, Agni Theertham in Rameswaram, Ariyaman beach in Palk Bay, Maraikayarpattinam Seashore area in Rameswaram Island, Arichalmunai beach in Rameswaram Island, Aligadda beach in Karwar, Tuticorin South beach road, Visakhapatnam beach, Versova rocky beach and beach areas in Lakshadweep were among the major beaches cleaned during the coastal clean-up drives.

## Coastal clean-up drive at Kuzhuppilly beach, Kochi

ICAR-CMFRI, Kochi regularly organise coastal clean-up drives in the endeavour to create awareness on keeping the oceans and beaches clean. The staff of the institute organised on-board vessel clean-up drive in off -Kochi cruise onboard FV Silver Pompano along with the Swachhata Hi Seva campaign in September 2024 during which best efforts were made to collect floating and column debris along its route. A beach cleaning drive was conducted



Beach clean-up at Kuzhuppilly beach, Vypin Island, Kochi

along Kuzhuppilly Beach, Vypin Island. The Marine Biodiversity and Environment Management Division (MBEMD) of ICAR-CMFRI coordinated the event on behalf of the Institute. The staff and students of the Division, and Swachh Bharat team members of the Institute actively participated in the clean-up drive.

## Narakkal beach, Kochi

Krishi Vigyan Kendra (Ernakulam) functioning under Central Marine Fisheries Research Institute (ICAR) conducted cleaning of Narakkal beach which is visited by local as well as foreign tourists. Single use plastic bottles, bags and other non-degradable items were collected and



sorted for disposing to spread the message among public as well as staff to separate and segregate wastes at the source and avoid environment pollution as part of Swachhta Pakhwada programme in 2018.

## Beach cleaning at Konadu Beach, Calicut

Beach clean-up programmes were organised regularly by Calicut Regional Station at Konadu beach, Calicut. In order to create awareness among coastal communities, a pamphlet entitled 'Save the Sea, Say No to Plastics' was distributed to people in the locality. The pamphlet emphasised the deleterious impact of macro and microplastics on marine eco-sensitive habitats, fishery resources and ultimately on mankind. The pamphlet indicated that if the practice of plastic littering by humans continued, there would be more plastic than fish in the ocean by 2050.



Beach clean -up drive at Konadu beach by staff, Calicut RS

## Beach clean-up drive at Pattinapakkam beach, Chennai

As part of Swachh Bharat Abhiyan Special Campaign 2.0, Pattinapakkam beach area in Chennai was cleaned by collecting plastic covers, plastic bottles, glass bottles etc. in gunny bags and the collected wastes were transferred to corporation garbage collection units. An awareness campaign was also conducted outside the ICAR-CIBA campus at MRC Nagar. The staff members

collectively reached the main entrance area and stood there by holding the charts drawn by the school children and staff of CMFRI to exhibit them to the public.

This beach is adjacent to the Pattinapakkam fishermen village and it is a tourist spot besides beaching of country crafts. The staff members of this centre undertook swachhta programme by cleaning the beach.



Cleaning of Pattinapakkam beach area by CMFRI, Chennai

## Cleaning of Chinna Neelankarai beach

The staff of MRS of CMFRI, Chennai joined hands with 'Namma Beach Namma Chennai' volunteers along with Kiwi Learners a pre-school in Neelankarai in the cleaning programme of Chinna Neelankarai beach.



## Cleaning Nochikuppam beach, Chennai

Nochikuppam beach is a fish landing centre for indigenous crafts. There is a very good fresh fish market here which attracts lot of public to this place. This beach is also considered as a good tourist place. The Swachhat Hi Seva 2024 campaign was conducted at Nochikuppam coastal village, Chennai District with the tagline "Garbage Free Coastal India in 2024". Staff members cleaned the beach by removing plastic materials and other trash materials scattered along the beach. The staff members and local safai mitras participated in the beach cleaning activity to promote a clean and green coast.



Cleanliness drive at Nochikuppam beach

## Cleaning of Kovalam beach, Chennai

Banners were displayed all along the Kovalam fishing village beach area to sensitize the general public and tourists regarding the anthropogenic activities and its impact on polluting the coastal environment.



Kovalam beach is 29 km away from Chennai Research Station of CMFRI and adjacent to the field laboratory Kovalam. Kovalam is a fishermen village and the beach is a good tourist spot besides beaching of country crafts. The staff members of MRS, Chennai undertook Swachhta programme by cleaning the beach.



Cleanliness drive at Kovalam beach

## Beach clean-up drive at Pirappanvalasai beach, Ramanathapuram District

Mandapam Regional Centre of CMFRI organised a beach clean-up activity at Pirappanvalasai beach along the Palk Bay coast in Ramanathapuram district. Pirappanvalasai beach is one among the 75 beaches listed by the Government of India for the clean-up activity for the “Swachh Sagar, Surakshit Sagar/Clean Coast Safe Sea” campaign. Officials from the Department of Fisheries, Mandapam also took part in the event. The cleaning drive was held at the one-kilometre stretch of the beach and the plastic debris comprising worn-out fishing nets, ropes, plastic chappals, thermocol, and glass bottles to the tune of 300 kg was removed and disposed of through municipal waste management.

## Agni Theertham, Rameswaram

ICAR-CMFRI organized Swachhata Hi Seva campaign at Agni Theertham, Rameswaram. Along with the staff of ICAR-CMFRI, 158 volunteers from Ramanathapuram District Administration, Indian Coast Guard Station, Mandapam, INS Parundu, Uchipuli, Green Rameswaram, JKR



Administering the Swachhata pledge



Cleanliness drive at Agni Theertham

Resorts & Spa, Yathrai Paniyalar Sangam, Dr. A. P.J. Abdul Kalam International Foundation and Daiwik Hotel, Rameswaram joined hands together for the cleaning drive at Agni Theertham, Rameswaram. In order to prevent the erosion vetiver grass was also planted.

## Ariyaman Beach, Palk Bay

The ICAR-CMFRI, organized cleanliness drive at Ariyaman beach, Palk Bay. The staff of Mandapam RC, CMFRI actively participated in the Ariyaman beach cleanliness drive.



Cleanliness drive organised at Ariyaman beach



Cleanliness drive organised at Ariyaman beach

## Maraikayarpatinam Seashore area

The ICAR-CMFRI, Mandapam Regional Centre organized Swachhata Hi Seva 2024, at the premises of Maraikayarpatinam Seashore area which is an extremely difficult to clean area. The staff of ICAR-CMFRI, Mandapam actively participated in the Swachhta Hi Seva cleanliness activity.



Cleaning Maraikayarpatinam Seashore area by staff of CMFRI, Mandapam RC

## Peikarumbu, Rameswaram Island

The staff of CMFRI, Mandapam RC actively participated in the Swachhta Hi Seva awareness campaign, from Ariyankundu village to Dr. A.P.J. Abdul Kalam national memorial, Peikarumbu, Rameswaram Island. During this occasion, pamphlets related to cleanliness, hygienic environment etc. were also distributed to the public.



## Cleanliness drive and awareness programme at Arichalmunai beach, Rameswaram Island

Awareness creation & cleaning activities at Dhanuskodi near Old church and Arichalmunai beach, Rameswaram Island. Pamphlets related to cleanliness, sanitation & hygienic environment practices (in Tamil language) were distributed to local residents and tourists.



## Beach cleaning programme at Inigo Nagar, Tuticorin

The World Ocean Day 2017 was celebrated at TRC of CMFRI by conducting “Beach cleaning programme” at Inigo Nagar, Tuticorin. The overall theme for World Ocean Day 2017 was “Our Oceans, Our Future,” and mainly focused on the prevention of plastic pollution in the ocean for a healthier ocean and a better future. The programme was started with an awareness rally from office to Inigo Nagar by staff of TRC of CMFRI to create awareness among the public. The beach cleaning activity begun with a briefing of coastal pollution especially the effect of plastic in the ocean. The fishermen of Inigo Nagar village actively involved in the programme. They were also motivated and encouraged to understand the need and importance of clean oceans in their daily life. During this programme, the cleaning activity was carried out along the beach of Inigo Nagar. The waste materials especially plastic items, unusable damaged fishing gears and broken glass remains were segregated and disposed of safely in dust bins.

## Coastal clean-up drive along the Tuticorin South beach road

As a part of “International coastal clean-up day” – Tuticorin RS of ICAR-CMFRI organized a Coastal clean-up drive in association with “We Care Trust” with the active participation of Kamaraj college and VOC college of engineering students during September, 2024. Around 200 students, volunteers of we care trust, ICAR-CMFRI staff members and other organizations participated in the coastal clean-up drive along the Tuticorin south beach road spanning a distance of 1.5 km. The participants were given gunny bags to collect the debris. The participants walked along the 1.5 km stretch holding banners for creating awareness to the beachgoers and general public. The collected debris were handed over to civic authorities volunteers for proper disposal through the garbage truck. At the end of the programme an awareness campaign was carried out for the participants about marine plastic debris.



Coastal clean-up drive along the Tuticorin south beach road

## Cleanliness drive and Swachhata awareness walk at Versova rocky beach

The Swachhata awareness walk was organized on Versova beach during the swachhata campaign. Local fishers and residents were informed to avoid the disposal of plastic in the sea and to segregate dry and wet household garbage before discarding it. On the occasion of world environment day 2017, Mumbai RS of CMFRI conducted beach cleanliness drive along with Bombay Municipal Corporations (BMC) staff and local citizens. During the drive two trolley of garbage have been removed from the beach and loaded on tractor trolley for transportation to nearest waste dumping station.



Beach clean-up drive at Versova by staff of Mumbai RS



Disposal of garbage collected during the cleanliness drive at Versova beach



Versova beach before and after the cleanliness drive



Cleanliness drive at Versova beach, Mumbai

## Coastal clean-up drive at Aligadda beach, Karwar

Cleanliness campaign was organized at Aligadda beach, Karwar. The staff members of Karwar RS of CMFRI actively participated in the coastal clean-up activities.



Coastal clean-up drive at Aligadda beach, Karwar

## Coastal clean-up drive at Visakhapatnam beach

As a part of the implementation of the Swachh Bharat Mission, "Swachhta of Nearby Tourist Spots" day was organized in 2018 at Visakhapatnam beach. A cleanliness drive was conducted. A beach walkathon was also organised at Visakhapatnam beach to create swachhata awareness among the public and tourists.



## Coastal clean-up drive at Veraval

The staff of Veraval RS of CMFRI conducted cleanliness drive at Veraval beach with the active involvement of staff from Indian Coast Guard. Cleaning of Somnath beach was also undertaken along with active participation of staff members of CIFT, Veraval.



Coastal clean-up drive along with Indian Coast Guard at Veraval, Gujarat

## Beach clean-up drive at Lakshadweep islands

In connection with the Swachhata Hi Seva 2024 campaign KVK of CMFRI, Lakshadweep organized cleanliness drive at tourist spot near sea beach in Lakshadweep



Beach clean-up drive during Swachhata campaign in Lakshadweep

# Promoting sustainable sanitation and solid waste management in offices, villages

ICAR-CMFRI promotes sustainable sanitation and solid waste management in offices and nearby villages. Demonstration and distribution of biobins to schools and local people were done during the swachhta campaigns. To promote hygienic handling and processing of solid waste, a fuel free incinerator was installed at the residential campus of CMFRI, Kochi which has a processing capacity of 40 kg solid waste including waste paper, sanitary napkins etc. per day. Biogas plant and bio composting units are installed at Mangalore and Calicut centres of the institute for promoting waste management. Training for vermicomposting was given to local people for promoting solid waste management. Household waste collection drives and door to door awareness programmes were also organised during the campaigns. Training was also given for women entrepreneurs for making manure from the fish waste available in the locality using coirpith and composting mineral mix.

## Construction of toilet facility at Mandapam fish landing centre

As a part of the Prime Minister's special National Sanitation Campaign, "Swachh Bharat Abhiyan", ICAR-CMFRI constructed a toilet facility at Mandapam Fish Landing Centre. This facility was created for the marine fishers in this region.





Toilet constructed by CMFRI at Mandpam Fish Landing Centre

## Napkin Vending Machine

Self dispensing of the napkin at the drop of coin and Eco- Friendly *Sanitary Napkin Disposal Machine* for Instant disposal of used napkins in a very scientific and hygienic way, has been installed in the ICAR – CMFRI Headquarters, Kochi.



## Go green initiatives

Krishi Vigyan Kendra (Ernakulam) functioning under Central Marine Fisheries Research Institute (ICAR) has initiated a public awareness campaign for reducing usage of plastic and promoting reuse of plastic bottles by reusing the cleaned organic input bottles received at the KVK sales counter for packing and sales of fresh organic inputs as part of Swachhta Pakhwada programme. A nominal amount per bottle is given to the farmers to promote and spread the message to farmers and to practice the same principle at their farms and homes to reduce plastic usage for reducing environment pollution. The farmers visiting the counter are given awareness about this programme initiated by KVK.

## Treatment of bio-degradable / non-biodegradable wastes

One of the programmes defined is to convert waste into organic manures and promoting organic farming. KVK Ernakulam of CMFRI has initiated composting of marine fish waste into organic manure in a commercial scale and branded it as Fishlizer. These wastes are otherwise dumped into public water bodies, road sides etc. creating hazards to public. The marine fish waste from Ernakulam market is collected and composted on a regular basis.

## Compost pits and biogas plants installed at offices for biowaste conversion

Kitchen waste processing units are installed at various centres of CMFRI for production of bio compost and biogas generation for cooking. Awareness programmes to staff on utilization of biodegradable wastes and organic farming are conducted by experts. Vegetable gardens are maintained at research centres of CMFRI by utilizing the bio-degradable wastes generated in compost pits. Calicut RS and Mangalore RC of CMFRI maintain vegetable gardens using the manure produced in compost pits. The staff of these research centres were given training to maintain the vegetable gardens. The slurry from biogas plant at Mangalore RC is used for



Vermi-compost pits at Mangalore RC of CMFRI



Part of the compost pit was converted to biogas slurry manure preparation unit

vegetable patch after seasoning in vermi-compost pit. Terrace gardens are also maintained for effective utilization of biowastes. Awareness workshop for fisher women on cleanliness of fish market and other fish processing was conducted at Vizhinjam Research Centre and fish selling areas.

In order to use the fish waste which is coming regularly from the fish analysis, a biogas unit was installed at Mangalore RC of CMFRI. The gas produced is utilized in the tiffin room of the centre.



*Cooking in tiffin room using bio-gas at Mangalore RC of CMFRI*



Dr. Chandre Gowda, Director, ICAR-ATARI, Bengaluru and Shri. B. Dhananjaya Senior Scientist and Head KVK, Brahmavara, Udupi visited Mangalore Research Centre and appreciated the efforts made by the staff for gainful conversion and utilization of the solid fish waste.





Vegetable gardens are maintained at offices for effective use of bio-wastes.



Vegetable garden maintained at Mangalore RC of CMFRI using the manure from compost pits



The bio-gas unit at Calicut RS of CMFRI setup with help of The Regional Agro Industrial Development Co-operative of Kerala Ltd. (Raidco). Biogas production from vegetable waste and fish waste was demonstrated in the campus for empowering the public to practice the conversion of waste to wealth



Loading the biogas plant with the bio-waste generated at the canteen and the fish biology laboratory.

## Solid waste management in villages

A demonstration class on waste management and household composting with Black Soldier Fly Larvae (BSFL) using bio-bins for the residents of Narakkal panchayat was conducted. The utilization of BSF larvae for supplementary feeding as a protein source in view of increased cost of poultry feed was also explained.





Incinerator installed at CMFRI residential campus

## Fuel free incinerator for solid waste management at CMFRI residential campus, Kochi

To promote hygienic handling and processing of solid waste, a fuel free incinerator was installed at the residential campus of CMFRI, Kochi which has a processing capacity of 40 kg solid waste including waste paper, sanitary napkins etc. per day. The incinerator runs without fuel and uses the technique of injecting controlled oxygen through the specially designed nozzles to the prelit waste materials in the combustion chamber. The incinerator uses a minimal space and is portable. The built in emission control devices effectively prevent particulates and minimises hazardous emissions, density of smoke and odour.



Dr. A.Gopalakrishnan Former Director, CMFRI inaugurating the incinerator at CMFRI residential campus, Kochi

## Glass crushing unit to manage laboratory glass wastes

The Central Marine Fisheries Research Institute (CMFRI) has set up a glass crushing unit that will manage the recycling of refuse glass bottles used in laboratories by pulverizing them into sand-like granules, which could be used for construction works. The unit, which was designed by Shri Anoop Augustin of the Estate and Maintenance Cell of the CMFRI, is part of the Swachha Bharat programme of the Institute. A one-litre glass bottle could be crushed into tiny shreds within two seconds at the unit, which requires 6-unit electricity per hour operation. Besides



laboratory glass bottles, all refuse glass materials, including tube lights, could be recycled in the same way using the facility.

## Household waste collection drives

The ICAR-CMFRI, Mandapam Regional Centre has organized household waste collection drive at CMFRI residential quarters, Mandapam camp during the Swachhata Pakhwada Campaign.



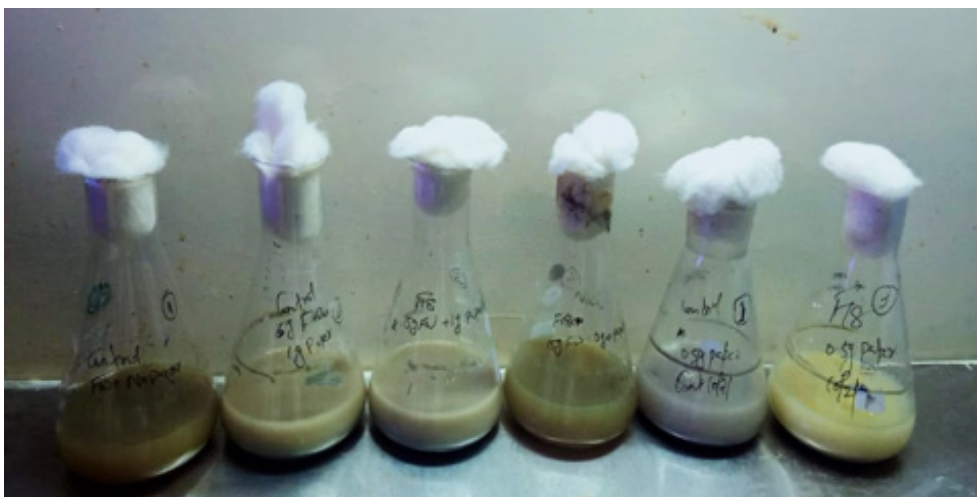
*Household waste collection drive at CMFRI residential quarters, Mandapam camp*

# Development and promotion of novel technologies

CMFRI has developed several eco-friendly and low carbon technologies for fishing and farming including cage fish farming in the open sea and backwaters, sea weed farming, mussel and edible oyster farming, integrated multitrophic aquaculture, Recirculatory Aquaculture System for nursery rearing of marine fishes, biofloc farming etc. The institute has developed an indigenous microbial consortium and a novel composting technology that can efficiently convert marine fish waste into valuable organic fertilizer and is actively involved in promoting the commercial production of fish fertilizer from fish wastes through women entrepreneurs. Demonstration classes on waste management and household composting with Black Soldier fly (BSF) larvae using Bio-bins was promoted for waste disposal in villages. Waste to wealth technologies promote effective waste disposal at the same time serve as alternate livelihood source for local people including women entrepreneurs.

## Technology for fish waste conversion into a fertilizer

The dramatic increase in fish waste creates massive economic and environmental concerns, raising the necessity for developing valuable cheap waste treatment and reclamation strategies. Realizing this, ICAR-CMFRI has developed an indigenous microbial consortium and a novel composting technology that can efficiently convert various marine fish waste into valuable organic fertilizer. The initial bench-scale experiments were conducted in the Fish Microbiology Lab, Marine Biotechnology, Fish Nutrition & Health Division, ICAR-CMFRI. Afterward, the pilot scale experiments were conducted at KVK, Njarakkal, initially using 10 Kg, then 20 Kg, and





finally 50 Kg fish waste and optimized different process parameters to study the efficacy of the developed fish waste composting technology. For this, fish waste was mixed with consortia and selected carbon source material, and the composting was performed for 25 days. A second set of fish wastes, without consortia and carbon material, was kept under similar experimental conditions to serve as the control. The compost was mixed periodically (5th, 8th, 10th, and 15th day) to maintain proper aeration. Moisture content was adjusted at each turning time and maintained by adding water. The physical parameters of the process were monitored for 25 days. The results of these parameters showed that the compost became fully matured and stable after 25 days of composting, suggesting the efficiency of the developed strategy. The field-level evaluation done using the fish waste generated in the various capture fisheries divisions of the institute also revealed promising results.

## Training for women entrepreneurs for commercial production of fish fertilizer from fish wastes

CMFRI is promoting waste to wealth through development and promotion of organic manure from fish waste which is marketed as 'Fishlizer'. This product is produced through microbial degradation of marine fish waste in coir pith medium, a waste product from the coir industry. Fishlizer contains all essential elements for plant growth. The amino acids present in the marine fish would enhance flowering and fruit setting in plants, favouring enhanced production. Fishlizer contains all the nutrients involved in plant development. The amino acids found in marine fish would help plants flower and set fruit, resulting in increased yield. The women entrepreneurs were trained for producing 'Fishlizer' through Ernakulam Krishi Vigyan Kendra (KVK) of CMFRI. The science and technology innovation hub of the institute is also promoting waste to wealth through training of women in fish fertilizer production.



Fish fertilizer production from fish waste



Fish fertilizer production unit of a woman entrepreneur in Kochi

### Wealth from Fish Waste

**A KVK Intervention on Entrepreneurial Capacity Building**

**Background:**  
The remote islands of Lakshadweep need right handling of the wastes from its production systems to sustain the ecosystem and the aesthetics of the islands. Fishing is the major economic activity of these islands and processing of fishes produces large quantity of waste. Presently, the waste is buried on the seashore or thrown in open places which pollute the islands besides affecting the aesthetic value of this important tourist destination. The fish waste is an excellent source of protein and many other nutrients which are important raw materials for many useful products. Rightful utilisation of this valuable waste can provide additional income for the households while keeping the islands clean. Considering the above, to begin with, the ICAR-KVK Lakshadweep designed the training programme in collaboration with the Kavaratti Village Panchayath for orienting the existing micro-enterprises for taking up fish waste utilisation.

**Technical Collaborators:**  
ICAR-Central Institute of Fisheries Technology, the ICAR-CIFT has been working on production of useful products from fish waste. They have recently developed a technology for production of poultry feed from fish waste. Experts from the institute will train the beneficiaries on production of different products from fish waste including poultry feed.

ICAR-KVK-Enakulam: The KVK has been popularising several technologies developed by different ICAR institutions on production of useful products from agricultural wastes including fish waste. Manure and plant protection materials produced from fish waste by the KVK are well accepted and very popular in Kerala.

ICAR-Central Marine Fisheries Research Institute: The Social Economic Evaluation and Technology Transfer division (SEETTD) of ICAR-CMFRI is involved in organising Entrepreneurial Capacity Building training programmes on micro-enterprises in fisheries sector for better performance and diversification.

**Beneficiaries:**  
Members of the active women Self Help Groups in Kavaratti identified by the Kavaratti Deepap Panchayath.

Published by:  
Dr.A.Gopalkrishnan, Director, ICAR-CMFRI, Kochi,  
ICAR Krishi Vigyan Kendra, Lakshadweep

Prepared by: Mohammed Koya K., Vigneshwar V.P., Ramachandran C., Binu P.K. and Sreevatha P. (2020)  
Design: A.La. Ind., Kerala IIT.



## Black Soldier Fly Larvae (BSFL) based organic waste bio-conversion system

ICAR-CMFRI has developed innovative, eco- friendly and financially viable bio-conversion technologies for waste management. The major advantage of organic waste bio-conversion is that during the process valuable products are generated without producing any harmful chemicals. The technology for valorization of organic waste to fish feeds using black soldier fly larvae (*Hermetia illucens*) is an innovative and eco-friendly organic waste bioconversion

technology. Organic waste including canteen waste and fish sampling wastes could be valorized into alternative protein and lipid rich aquafeed ingredients and compost. This is an innovative & eco-friendly organic bio-conversion model for the generation of high value sustainable protein and lipid rich ingredient for incorporation in fish feeds



A demonstration class on was conducted for the residents of Narakkal panchayat for household composting with Black Soldier Fly Larvae (BSFL) using Bio-bins. The utilization of BSF larvae for supplementary feeding as a protein source in view of increased cost of poultry feed was also explained

## Juvenile Grass Carp fish to control aquatic weeds

Many of our freshwater resources are infected by different types of aquatic weeds and algae resulting conversion of these precious water resources into waste dumping yards. This not



only lowers ground water levels, but also leads to flooding during monsoon. Application of weedicides to control this cause damage to the fish stock and also to the ecosystem. Rearing herbivorous fishes to feed algae/aquatic weed plants is a viable environmental friendly solution. Grass Carp (*Ctenopharyngodon Idella*) is an ideal candidate that has ability to feed aquatic weed voraciously about 2 to 3 times of its body weight daily. Since this fish cannot breed in the ponds, its management is easy. Demonstration of this technology initiated by ICAR-Krishi Vigyan Kendra (Ernakulam) of CMFRI at Thripunithura, Perunninakkulam Shiva temple pond. Grass carp fish fingerlings were released during a function held on 6th December 2016.

The KVK Ernakulam conducted a training on program biological management of aquatic weeds as part of *Swachhata Pakhwada* on 27th December 2021 for members of Moozhikulam Sala, a cultural & environmental collective located at Moozhikulam, Ernakulam.

## Soil-less medium for farming developed by Krishi Vigyan Kendra, Ernakulam

The Ernakulam KVK, functioning under the CMFRI, developed the soil-less medium that can be used as an alternative to soil in farming by using composted pressmud, a by-product from sugar mills along with coirpith, powdered cowdung, neem cake, dolomite and bio-control agents. While the scarcity of quality soil is posing a challenge to the organic farmers in cities, the soil-less mix could be of great advantage to them for growing vegetables and other plants. One packet of the product weighing 10 kg could be used for growing one plant and no growbag is required for the same. KVK is also providing training programmes for commercial manufacturing of the product. Sales melas were also conducted for popularising the soil-less medium among the public.

The KVK conducted a training programme at CMFRI, Kochi in an effort to develop entrepreneurs across the state for the commercial production of the soil-less media. As part of the entrepreneurship development training, there was demonstration of the mechanized production techniques of the soil-less media and class on marketing strategies.



The KVK would provide continuous technology backstopping for those who venture in this enterprise. Training and technical support will be given in accordance with the demand for the same from the public.

## Vegetable farming with efficient water management

KVK-Ernakulam conducted a training on "Vegetable farming with efficient water management" for students in association with UniY Aluva and Govt Boys Higher Secondary School, Aluva on the 7th November 2022. As part of the training, the students also set up a demonstration vegetable farm at the school. The Ernakulam KVK in collaboration with District Agricultural Technology Management Agency (ATMA) conducted farmer's training on "Water management to boost productivity in Horticultural crops" at Kadungallur Grama Panchayath hall.



## Water Hyacinth eradication during Swachhata Pakhwada

Water hyacinth (*Eichhornia crassipes*) that grows in water bodies creates havoc to fish farmers as it considerably reduces water flow and depletes oxygen in fish farms. The fish farmed in cages are most affected. Water hyacinth also acts as a breeding ground for parasites and other hazardous organisms that cause diseases to fish. It comes to fish farms along with monsoon run-off water, establishes during July to August and generally decays during October as the salinity levels increase. However extended monsoon and release of water from dams resulted low salinity leading to a favorable environment for water hyacinth even during November and December. The fish stock ready for harvest during December is greatly affected by the presence of water hyacinth. In this context, KVK conducted an orientation programme on ill effects of water hyacinth on fish production and its eradication methods. A massive cleaning drive was conducted by engaging young fish farmers at Ezhikkara, Ernakulam where the water hyacinth accumulation was cleared from an area of 2 acres on 24th December 2021 as part of KVK's Swachhata Pakhwada



# Swachhata awareness programmes

To propagate the swachhata message, ICAR-CMFRI conducts several awareness programmes consisting of human chains, walkathons, webinars, awareness rallies including cycle rallies, bike rallies, door to door awareness programmes at fishing harbours and fishing villages, street plays, public signing campaigns, slogan writing campaigns, competitions and awareness talks for school and college students. The staff of the institute join hands with various local bodies, NGOs, other government departments, self-help groups, school and college students to ensure large scale participation of various stakeholders and to give wide publicity to the Swachh Bharat campaigns. Door to door awareness programmes at fishing villages were conducted to initiate behaviour change on sanitation in villages. Tree plantation drives were organised at schools and public places during the campaigns to symbolise the commitment to a greener and healthier environment and encourage people to take an active role in environmental conservation. The institute also adopts innovative approaches to awareness by organising street plays, folk dances, waste to art competitions and wall painting for swachhata awareness.

## Human chain formation

Human chain is a symbolic event where people join hands to raise awareness and demonstrate commitment to cleanliness and sanitation. During the Swachhata campaigns, human chains were formed at various centres of CMFRI. The staff formed human chains by holding hands in public places and displayed swachhata messages using placards.



Human Chain formation on the road side to highlight the importance of *Swachhta Hi Seva*



Human chains in various centres during Swachhata campaigns

As part of the Swachhta Hi Seva campaign, a human chain was organized at ICAR-CMFRI, Kochi bringing together participants in a symbolic gesture of unity and commitment to cleanliness and sanitation. The event saw enthusiastic participation from community members, staff, and students, all joining hands to raise awareness about the importance of maintaining a clean environment.



Human chain by CMFRI staff at Kochi

The ICAR-CMFRI, Mandapam Regional Centre organized human chain during the Swachhata Hi Seva 2024 campaign at the premises of administrative building area of CMFRI, Mandapam camp.



Swachhata human chain at CMFRI Mandapam camp

Public awareness programmes were also conducted during the swachhata campaigns through display of posters, banners and distribution of notices on swachhata.

## Cycle rally/ Two-wheeler rally

The CMFRI sports committee conducted Cycle/Two-wheeler rally, starting from CMFRI headquarters to Gandhi Square near Rajendra Maidan, Ernakulam as part of the swachhata campaign in 2018. The team consisting of CMFRI staff, their children and family members participated in the event to create awareness among the society on the need for a clean environment. Holding placards containing messages on cleaner India and hazards of plastic wastes and their effects on the environment, they raised slogans; and propagated the significance of Swatch Bharat Abhiyaan.

A bike rally from Vizhinjam to Kovalam, Thiruvananthapuram for swacchta awareness was organised by Vizhinjam RC of CMFRI as part of the Swachhata Hi Seva campaign in 2023.

An awareness programme for 'Reducing Environmental pollution and Improving health' was organized in Chennai.

As part of the Swachh Bharat Campaign 2024, Mangalore RC of ICAR-Central Marine Fisheries Research Institute (CMFRI) organized a walkathon in collaboration with the NSS unit of the College of Fisheries, Yekkur, and Yashwasini Fish Meal and Oil Company. The event aimed



Bike rallies were conducted in ICAR-CMFRI, Kochi to spread the swachhata message to public.

to raise public awareness about the importance of a clean and green India. A total of 125 participants, including staff, students, and members of the public, actively took part in the walkathon, demonstrating a strong community spirit. The participants carried placards and



Bike rally conducted as part of swachhata campaign in Kochi in 2018



Bike rally in Vizhinjam during the swachhata campaign in 2023

banners promoting environmental cleanliness and sustainability, encouraging onlookers to join the movement toward a cleaner India. The event not only highlighted the importance of

public involvement in maintaining clean surroundings but also fostered a sense of responsibility among the younger generation. The walkathon was a testament to the collaborative efforts of CMFRI, the College of Fisheries, and local industry in promoting the Swachh Bharat mission. Overall, the initiative successfully engaged the community, creating awareness and inspiring action toward a cleaner environment.

An awareness campaign and rally from Gundicha Temple to Puri Beach was done by the staff of Puri Field centre of CMFRI, Odisha. In this meeting the District Magistrate and Collector Puri, Addl. Collector, Tahsildar, Puri, District Forest Officer Puri, District Fishery Officer, staff from various offices and Local NGOs joined. The rally was primarily aimed to create awareness on restricting the use of single use plastics and other plastic items in day-to-day life. The collector emphasized on the use of jute/cloth bags, keeping the environment and beach clean considering its significance as a tourist spot.



Walkathon by CMFRI staff in Mangalore



Walkathon by CMFRI staff in Mangalore



Swachhata awareness march by staff of Calicut RS of CMFRI

## Competitions for students

To spread the swachhata message and inspire the young minds, CMFRI regularly conducts various competitions for school children including quiz competitions, painting competitions, essay writing competition, elocution etc. and prizes and certificates were distributed to winners and participants.

A district level elocution competition was conducted at Kothakulam, Paravur in Ernakulam district by KVK of CMFRI as part of the Swachhta Pakhwada campaign. The programme was conducted in association with the Prarthana foundation and Moozhikulamsala.

Calicut Regional Station conducted an awareness programme “*Swachh Bharat – Swachh Sagar*” and a painting competition for school children on the topic “Coastal and Marine Pollution”. Almost 130 students from nearly 40 schools around Calicut district participated in the programme.

In order to inculcate the importance of hygiene and sanitation in young minds, a quiz competition on the topic-Sanitation and hygiene was conducted as part of the Swachhata



Conducting drawing competition at Veraval



Prize distribution in Veraval



Elocution competition at Bhidia Govt. school, Veraval



Winners of competitions

Hi Seva campaign at KVK campus on 28th September 2017. 59 students from Government Vocational Higher Secondary School, Narakkal, Ernakulam participated in the competition.

An elocution competition on the topic 'Green Energy-Opportunities and Challenges' was conducted at the Tuticorin Research Centre of ICAR-CMFRI. Drawing competition on marine biodiversity and its conservation was also conducted.

As part of a series of conservation and awareness programme on marine life, the Mandapam



Painting competition for students at Calicut RS of CMFRI



Regional Centre of ICAR-CMFRI organized colouring/drawing competition on the theme of "Conservation of Marine life", for the children of Kendriya Vidyalaya, Mandapam in order to create awareness on marine life and the conservation measures needed at the grass root level. A total of 236 students from grade 6 to 12 have participated in the event and the best coloured/ drawing posters were awarded with prize in a ceremony organized on 30th November 2017.

A drawing competition was conducted for the students of Punitha Yagappan Higher Secondary School at Thangatchimadam as part of a series of conservation and awareness programme on marine life. A total of 368 students participated in the competition. On 21st February 2018 a function was held at the school premise to award prizes to the best drawings. On this occasion the students' drawings were put on exhibition to showcase their talents. A drawing competition was also conducted for the students of Panchayat Union Middle School at Gandhi Nagar, Mandapam. A total of 114 students participated in the competition. On 4th April 2018 alongside of the annual day function of the school trophies and certificates were distributed for the best drawings and certificate of participation to all the student participants.

Veraval RS of CMFRI conducted a speech competition on the theme "Importance of personal hygiene" at Govt. school, Bhidiya. The students actively participated in the event. A drawing competition on the theme "Swachh Bharat" was conducted at Girls Govt. School, Bhidiya where the kids of fishermen study.



Colouring/drawing competition on the theme of "Conservation of Marine life"

The students who participated in the drawing and speech competition were encouraged with certificate and prizes.

To propagate the Swachhta message to society, the Swachh Bharat Abhiyan committee of ICAR-CMFRI, Kochi organised a painting competition for the students of The Fr.Agostino Vicini's



Awareness programme in schools by staff of Mandapam RC

Special School, Mundamveli, Kochi during the Swachhata Hi Seva campaign in 2024. It is a special school for hearing impaired students in Mundamveli, Kochi, Kerala. Nearly 80 students from the school participated in the event. The winners were distributed prizes by the Swachh Bharat committee members of CMFRI. Swachh Bharat committee members along with the staff and students also undertook cleaning activities in the premises of the school. Cultural performance of the students was also done during the occasion.



The Regional Centre of ICAR-CMFRI, Mangalore, organized an essay writing competition during the Swachhata Hi Seva 2024 campaign for the students of the College of Fisheries, Yekkur, on the topic "Impact of Pollution on Marine Life: What We Can Do." The event aimed to raise



Prize distribution for the winners of drawing and speech competition at Veraval

awareness among students about the detrimental effects of pollution on marine ecosystems and encourage them to think critically about solutions. Participants showcased their knowledge and creativity, highlighting the various threats posed by pollution to marine biodiversity and proposing actionable measures to mitigate these impacts. The competition provided a platform for students to voice their concerns and inspire others to take responsibility for protecting marine life. Through this initiative, the campaign emphasized the role of young minds in advocating for cleaner oceans and a sustainable future.



Winners of the Swachhata Painting competition conducted at Fr.Agostino Vicini's Special School, Kochi



Essay competition for students at Mangalore

## Swachhta Samvad

Dialogues and discussions were organized at Mangalore RC during the Swachhata Hi Seva 2024 campaign to promote awareness and community involvement in cleanliness initiatives. These interactive sessions engaged participants from various sections of the community, including staff, and local residents, fostering a shared sense of responsibility towards maintaining cleanliness. These sessions served as a platform to inspire and mobilize collective action, reinforcing the message that cleanliness is a shared responsibility.

The ICAR-CMFRI, Mandapam Regional Centre organized an awareness class on cleanliness and sanitation talk to the students from Department of Zoology, Bharathiyar University, Coimbatore along with CMFRI staff at the premises of CMFRI, Mandapam camp during the *Swachhata Hi Seva* 2024 campaign. Staff of CMFRI Mandapam RC and students actively participated in the Swachhata Hi Seva activity.

ICAR-KVK of CMFRI, Lakshadweep organized a swachhata samvad programme during the *swachhata hi seva* campaign with farmers and local people of Kavaratti to discuss the importance of cleanliness and promote awareness and community involvement in cleanliness initiatives.





An awareness talk on cleanliness and sanitation to the students of Department of Zoology, Bharathiyar University by staff, Mandapam RC of CMFRI



## Door -to -door awareness programmes

Various centre of CMFRI conducted door- to -door awareness programme at residential colonies and fishing villages with the aim to create behavioural change on sanitation and swachhata. Awareness among fishers and youth on maintaining cleanliness at fish landing centres was also given.

KVK of CMFRI, Ernakulam Conducted door-to-door meetings to drive behaviour change with respect to sanitation was undertaken at Narakkal, Ernakulam. Awareness on Cleanliness and sanitation aspects to be adopted post flood in houses, animal housings and surroundings was imparted to the women of the village. Proper disposal of degradable and non-degradable waste was emphasized.

Swachhata awareness was also conducted by visiting nearby villages, residential areas of fishers, and *Angan vadies* in fishing villages and distribution of waste bins.

As a part of Swachha Bharat Abhiyan, staff of the Mumbai RC of ICAR-CMFRI had participated



Door- to -door Visit of CMFRI staff in residential area of fisherfolk in Veraval



Door- to -door Visit of CMFRI staff in residential area of fisherfolk in Veraval



Door -to- -door Visit of CMFRI staff in residential area of fisherfolk



Door- to- -door Visit of CMFRI staff in residential area of fisherfolk

in awareness campaign with inhabitants of Sagar Kutir, Versova Beach, Seven Bungalows during 31st March to 2nd April 2018. The campaign was conducted in view of plastic ban imposed by Maharashtra State Government and appeal made to people for segregation of wet and dry domestic garbage for subsequent resourceful disposal. Staff of Mumbai RC of ICAR-CMFRI assisted Shri Afroz Shah and Versova Resident Volunteers (VRV) team during the campaign actively. The team joined in explaining disadvantages of plastic litter to marine environment. Staff of Mumbai RC explained residents to segregate the domestic garbage and



Door -to- -door awareness at Narakkal, Ernakulam



Door- to- door awareness programme in Mandapam

to store it in different bins which will facilitate collection by local governing body i. e. Brihan Mumbai Municipal Corporation for efficient recycling and to avoid direct disposal of garbage directly in to the sea or beach.



## Awareness regarding disposal of stranded marine mammals

Awareness regarding disposal of stranded marine mammals at Juhutara beach after beaching of stranded cetaceans. This was done among the stakeholders including tourists, officials from forest, state fisheries department and Greater Mumbai Municipal Corporation.



## Organising Swachhta talks

During Gandhi Jayanthi celebrations at Mangalore, Shri. M.L.Doddamani, Managing Director, Karnataka Fisheries Development Board and Additional charge of Joint Director (Fisheries Harbour), Department of Fisheries, Govt. of Karnataka delivered an inspiring talk on Swachhta activities in the coastal areas, beaches and fish markets and fishing harbours.

A talk of Swami Paramasukhananda, Sri Ramakrishna Math, Chennai on 'Importance of Cleanliness of Mind, Body and Environment' in connection with Swachh Bharat Abhiyan programme at MRS of CMFRI, Chennai.

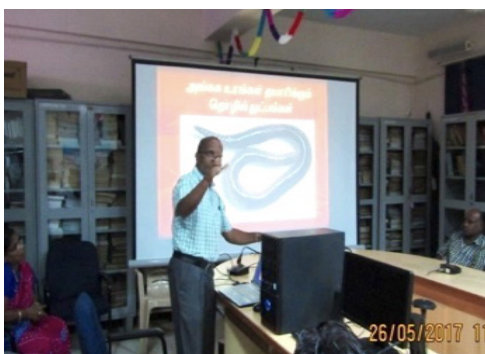
MRS Chennai organised a talk on '*Suitable methods for domestic waste management*' by Prof. K. Valliappan, Head, Dept. of Information and training Centre, Tamil Nadu Agricultural University, Chennai for creating awareness and knowledge on waste management among staff members and also to disseminate the technical know-how to friends, relatives, neighbours and nearby villages.

Dr. Nilesh Pawar, Sr. Technical Officer from Mumbai RC of ICAR-CMFRI participated in a panel discussion on "Conserving Our Oceans from Plastic Pollution" organized by the U. S. Consulate





General, Mumbai and Sustainability Nexus in the virtue of World Oceans Day on 8th June 2018 at Bandra Kurla Complex, Mumbai. Screening of a short film “A Plastic Ocean” was organized during the programme to portray severity of increasing plastic pollution of oceans.





At MRS of CMFRI, Chennai the paintings drawn by the students of Chennai middle school and staff members of CMFRI on Swachh Bharat were exhibited outside the campus for creating awareness among the public.

Veraval Regional Centre conducted awareness programme under the theme *Plastic pollution and personal hygiene and health* considering the importance of the same in the region and among fishermen community. Bhidia and Jaleshwar were identified as the two areas where most of fisher folk reside and the area warrants serious attention in terms of health and hygiene. The young kids going to primary or middle schools were major focal points of the awareness programs. Sanitation kits (hand wash, room sanitizer, toilet sanitizer and cleaning brushes etc.) were provided to these schools to cater immediate sanitation needs and urged them to continue the practice of cleanliness. It was also realized that limiting the awareness campaign to the school and kids will not have enough and elder members of the families also need to be motivated. A door-to-door visit to the fishermen dwelling, explaining them the need of hygiene and cleanliness at home and surroundings keeping in mind the lack of proper medical facilities in the region. Hand sanitizers (hand wash) were provided to fisher folk and they were asked to inculcate the habit of using them.



Awareness class on plastic pollution in schools

Krishi Vigyan Kendra (Ernakulam) functioning under Central Marine Fisheries Research Institute has initiated a public awareness campaign in 2018 for reducing usage of plastic and promoting reuse of plastic bottles by reusing the cleaned organic input bottles received at the KVK sales counter for packing and sales of fresh organic inputs as part of Swachhata Pakhwada programme. A nominal amount per bottle is given to the farmers to promote and spread the message to farmers to practice the same principle at their farms and homes to reduce plastic usage for reducing environment pollution. The farmers visiting the counter were given awareness about this programme initiated by KVK.

As part of *Swachhta Pakhwada* programme 2018, Krishi Vigyan Kendra (Ernakulam) has designed a poster depicting importance of waste segregation at source and reduction and reuse of plastics for display in stalls as part of exhibition to promote green protocol on reducing usage of plastic and promoting sanitation for a cleaner environment. The farmers visiting the stall were given awareness about Swachhta Pakhwada and activities promoted under this programme.

## Signature campaign

A signature campaign at the *Sagarika Marine Research Aquarium* of Vizhinjam Regional Centre of ICAR- CMFRI as part of the Swachhta Hi Seva campaign. A collage of the photographs of the public signing in support of the Swachh Bharat campaign was also displayed at Vizhinjam Regional Centre of ICAR- CMFRI to create awareness among the visitors.



To create awareness, a Swachhta Slogan writing board was kept in front of the Agricultural Technology Information Centre (ATIC) of ICAR-CMFRI HQ, Kochi to create awareness among the visitors. The selected slogans were documented and displayed at prominent places during the Swachh Bharat campaigns.



Swachhta Slogan writing at CMFRI HQ, Kochi

## Awareness programmes during world environment day and world ocean day celebrations

The World Environmental Day 2017 was celebrated with the theme 'Connecting people to Nature' by Central Marine Fisheries Research Institute Headquarters through various activities in Ernakulam and Thrissur districts of Kerala from 5th -20th June, 2017. Three programmes on LED bulb assembling (as a measure for conserving electric energy) and eco-friendly bag fabrication for reducing use of plastic bags were organized at Cheranelloor Panchayat in different venues. The programmes were organized in association with Ernakulam District Residents Association Apex Council (EDRAAC) and representatives from 16 Residents Association participated in this programme. Members from resident groups Thanal, VVK Valath, Ambalakadav, Eera, Snehatheeram, Mitram, Sreepadam, Swaruma, Estra, Haritha, Santhwan, PWRA, Krishnakripa, Gura, Mathirapilli and others participated. A talk on the importance of saving energy to abate climate change and reduce the use of non-degradable item to conserve the nature was delivered by Dr. V. Kripa, Pr. Scientist & Head-in-Charge of Fishery Environment Management Division. A talk on 'Connecting people with nature' was delivered at SDPY School on June 5th followed by a quiz programme for the high schools.

The World Ocean Day was celebrated on 8th June 2017 at TRC of CMFRI by conducting "Beach cleaning programme" at Inigo Nagar, Tuticorin. The overall theme for World Ocean Day 2017 was "Our Oceans, Our Future," and mainly focused on the prevention of plastic pollution in the ocean for a healthier ocean and a better future. The beach cleaning activity begun with a briefing of coastal pollution especially the effect of plastic in the ocean. The fishermen of Inigo Nagar village actively involved in the programme. They were also motivated and encouraged to understand the need and importance of clean oceans in their daily life.

The ICAR-Central Institute of Brackishwater Aquaculture, Madras Research Centre of the ICAR-Central Marine Research Institute (MRC of CMFRI) and the Society of Coastal Aquaculture and Fisheries (SCAFi), CIBA-Chennai jointly observed the World Environment Day and World Ocean Day at CIBA with the theme “Life Systems in the Ocean Environment with reference to Fisheries and Aquaculture. Dr.K.K.Vijayan, Director, ICAR-CIBA in his presidential address stressed that the anthropogenic activities and man-made irresponsible and greedy activities are to be curtailed to save the earth and the oceans.

## Public awareness programmes with the involvement of local bodies, NGOs and women self-help groups in Odisha

A public awareness campaign at Pir Jahania of Astaranga block a “Plastic Free Zone” was organised by Puri Field Centre of Central Marine Fisheries Research Institute in collaboration with Forest Department, Puri, Astaranga Block Development and NGO in 2017.

Pir Jahania, a famous shrine is situated 2 km away from the village Kanamana of Churiana panchayat. The women of the village Gundalba have pioneered in forming the *Pir Jahania Jungle Surakhya* (Pir Jahania Forest Protection) Women's Committee in 2000. The village has 60 households and one woman from each household is part a of the *Pir Jahania* Women's Committee. With this strong foundation of 60 members, the Committee adopted the practice of rotational patrolling of two to four women at a time to protect the forest within their traditionally identified boundary. But due to human interference the place has become an area with plastic pollution which was really a concern for the environmentalists.

The staff members of Puri Field Centre of CMFRI conducted an awareness campaign on the issue of plastic pollution in the tourist place of the Pir Jahania. The meeting was organized



with the Chairman of Astaranga Block Mr. Swadhin Kumar Behera, Range Officer of Astaranga with the team of the forest department, Mr. Kanhu Charan Sethi, deputy Sarpanch of Churiana Panchayat, Mr. Subhankar Behera, NGO Green Life Rural Association, the mullah of the Mosque Pir Jahania. More than 100 women belonging to different self-help groups from the village and neighbouring villages actively participated in the meeting.

The staff of CMFRI Mandapam Regional Centre, Mandapam camp actively involved in the Swachhata Hi Seva, Awareness creation & cleaning activities at Dhanuskodi near Old church and Arichalmunai beach, Rameswaram island. Pamphlets related to cleanliness, sanitation & hygienic environment practices (in Tamil language) were distributed to local residents and tourists.

## Swachhata awareness through cultural programmes

Awareness street plays, Yakshagana's portraying the need to reduce non-bio-degradable wastes, make the beaches litter free and ensure sustainable fishery were enacted at Mangaluru Fisheries Harbour. Staff at the Research Centre made a conscience effort to minimize the use of plastic and most of the commonly used plastic materials such as water jugs, tumblers, containers were replaced with eco-friendly bio-degradable materials.



Yakshagana to create swachhata awareness at Mangaluru Fisheries Harbour



Yakshagana to create swachhata awareness at Mangaluru Fisheries Harbour

## Tree plantation drives

As part of the Swachhta Pakhwada Campaign in 2022, a tree plantation drive was conducted at CMFRI Residential campus, Kochi. The staff and family members at the residential campus actively participated in the campus cleanliness drive and tree plantation drive.

As part of the Swachhta Hi Seva 2024 campaign, the Regional Centre of ICAR-CMFRI, Mangalore, organized the 'Ek Ped Maa Ke Naam' plantation drive. In collaboration with the staff and students of the Government Higher Primary School, the Centre conducted a special plantation drive aimed at enhancing green cover and beautifying the surroundings. Saplings were planted in and around the school premises, symbolizing the commitment to



Tree planting at CMFRI residential campus, Kochi



Tree plantation by the staff, Mangalore RC

a greener and healthier environment. The event also served as an educational experience, encouraging students to take an active role in environmental conservation. This initiative reflects the institute's dedication to promoting sustainability and community involvement in environmental stewardship.

Tuticorin RS of CMFRI organized a mangrove plantation campaign in office campus annexes and in the model mangrove farm at ICAR-TRS of CMFRI on during the Swachhta Hi Seva 2024 campaign. Initiation of restoration efforts of two species of mangrove plant seedlings



Tree saplings planted at the premises of CMFRI, Mandapam RC

*Rhizophora* & *Bruguiera* collected from the Manakudy, Kanyakumari SEED nursery were used for plantation campaign. Staff members, research scholars/associates of TRS of CMFRI participated in the plantation event.

The staff of Veraval RS joined hands with the students of Govt. school to undertake plantation drive. The initiation was done to create awareness among the children regarding the importance of plants for the overall health and cleanliness of the ecosystem



Mangrove plantation campaign at TRS of CMFRI, Tuticorin



Plant4Mother campaign by the staff of Veraval RS of CMFRI

## Installation of Selfie points

Swacch Bharat themed Photo-point at “Sagarika Marine Aquarium” was inaugurated at Vizhinjam Regional Centre of ICAR-CMFRI to promote awareness about Swachhata Hi Seva campaign among general public and tourists visiting the aquarium. The design of the Photo-point was finalised after conducting an in-house competition for the scientists, staff and students of the centre based on the theme- ‘Swabhav Swachhata- Sanskar Swachhata’. Four entries were short-listed and the ideas integrated into the final design. The winners were presented a token gift for their involvement and effort in designing the photo-point.



Swacch Bharat themed Photo Point at Sagarika Marine Aquarium

## Swachhata awareness through the art route

The institute adopts innovative approaches to swachhata awareness through organising waste to art competitions and exhibitions and wall paintings with swachhata messages.

## Waste to art competitions and exhibitions

Waste to art competitions and exhibitions were organised during the Swachhata Hi Seva 2024 campaign at various centres of CMFRI. The goal of the campaign was to demonstrate the potential of waste to be transformed into creative, functional, and meaningful art pieces, while raising awareness about environmental sustainability.



Exhibition of art from waste at Vizhinjam RC of CMFRI



'Waste to Art' competition organised at Mangalore RC of CMFRI

Mangalore RC of CMFRI organised 'Art from Waste' Campaign and Exhibition which included a vibrant and thought-provoking exhibition showcasing artwork made from discarded materials.

## Wall paintings at CMFRI, Kochi

As part of the Swachhta Pakhwada campaign in 2018, ICAR-CMFRI, Kochi organised an awareness programme through wall paintings. Compound walls of ICAR-CMFRI, Kochi was



Wall painting at CMFRI, Kochi

Painted with attractive messages and pictures towards awareness on Swachh Bharat Abhiyan.

Mandapam RC of CMFRI organized wall paintings with Swachh Bharat messages at the premises of ICAR-CMFRI, Mandapam camp during the Swachhata Hi Seva 2024 campaign.



# Massive community mobilization and public awareness on plastic pollution

In order to create awareness on the ill effects of marine pollution, mass awareness programmes with community participation were organised. A huge art installation 'Fish Cemetery' covering an area of more than 2500 sq ft was set up by CMFRI at Fort Kochi to create awareness against dumping of plastic wastes into sea and on public places. Promotion and sale of reusable carry bags are also done by the staff of the institute to discourage the use of single use plastic. Removal of plastic waste from back waters with community participation was also done. The institute also undertake on- board cleaning activities to create awareness on marine pollution. Awareness programmes were also conducted by organising talks on plastic pollution and distribution of brochures and leaflets to coastal people.

## Promoting eco-friendly bags: an alternative to plastic carry bags



One of the major threats the ecosystem faces in the present world is the impact due to non-degradable wastes especially plastics. Innumerable numbers of plastics in the form of carry bags enter in to our houses and it has become an inevitable item in the daily life. But the improper waste disposal due to poor waste management facilities available in our society causes the accumulation of these non-degradable plastic materials on the road sides and open grounds there by polluting the ecosystem. The institute is promoting the production and sale of eco-friendly carry bags to discourage the use of single use plastics.

## Awareness on marine plastic pollution through art installation: Fish Cemetery

ICAR- CMFRI has initiated several programmes to create awareness on marine litter. ICAR-CMFRI took the art route to create awareness on marine pollution, by setting up a huge art installation 'Fish Cemetery' covering an area of more than 2500 sq ft at Fort Kochi to create awareness against dumping of plastic wastes into sea and on public places in January, 2017 and a 2-month long awareness campaign was launched. The art installation attracted thousands of local people and tourists and created awareness on plastic pollution in sea

Similarly a 'Mad Crab' installation which occupied a ground area of 400 sq.ft and with height of 17 ft and 19 feet width was erected using discarded plastics on the beach by involving the local communities and visitors at Cherai beach beach in the campaign.



*Kochi Corporation Mayor Soumini Jain inaugurating the art installation 'Fish Cemetery'*



*View of the Fish Cemetery, a symbolic art installation, set up by the ICAR-CMFRI*

# മിനുകളെയും വിഴുങ്ങാൻ പ്ലാസ്റ്റിക്; ശ്രദ്ധനേടി ശ്മശാനഭ്യശ്ശം

കൊച്ചി • കടലിൽ തലമുറകളായി നീങ്ങിക്കൊണ്ടിരുന്ന മത്സ്യങ്ങൾക്കും മറ്റ് ജീവികൾക്കും പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കേണ്ടി വന്നു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

മത്സ്യങ്ങൾക്കും മറ്റ് ജീവികൾക്കും പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കേണ്ടി വന്നു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു. പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.



കടലിൽ കണ്ടുപിടിച്ച പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ. ചില പ്ലാസ്റ്റിക് മാലിന്യങ്ങൾ ഭക്ഷിക്കുന്ന മത്സ്യങ്ങൾക്ക് അത്ഭുതപ്പെട്ടതായി കണ്ടു.

## Pamphlets on marine plastic pollution

A pamphlet entitled 'Save the Sea, Say No to Plastics' was prepared to create awareness on plastic pollution. The pamphlet emphasised the deleterious impact of macro and microplastics on marine eco-sensitive habitats, fishery resources and ultimately on mankind. The pamphlet indicated that if the practice of plastic littering by humans continued, there would be more plastic than fish in the ocean by 2050. The pamphlets were distributed to coastal people to create awareness on plastic pollution.

### 2. Secondary microplastics

These are the microplastics that get fragmented to microplastic upon continuous exposure to sunlight and wave-tidal action. About 69 to 81% of microplastics in the ocean are considered secondary microplastics ([www.unaui.org](http://www.unaui.org)).

The so transported microplastics are accidentally taken up by marine living organisms including fishes and other biota; such as birds which may be leading to the bioaccumulation of plastic additives (Bisphenol A, diethyl phthalate) or contaminants (PCBs and HCBs). Ingestion of microplastics is a matter of concern in the case of benthic sessile organisms such as filter feeders, as these may reach the food chain (Colard, et al., 2017). The plastic garbage also lead to the gradual destruction of eco-sensitive habitats like seagrass meadows, coral reef ecosystems and associated biota. The discarded fishing nets in the sea consequently lead to ghost net fishing which threatens the life of marine organisms as they get entangled in it.

The main reason for plastic pollution is human lifestyle and behaviour. The discarded single-use plastic items accumulate over time and ultimately finds their way to ocean. Therefore, minimizing the usage of plastics and recycling the used plastics is the way forward to create a plastic-free future in the years to come. The recent research suggests that within the next 30 years, ocean will be having more plastics than the land (Ellen MacArthur, World Economic Forum, 2016) and report says that if the plastic production goes on in accordance to

current trends, the total plastic production is estimated to rise by 33 billion tonnes by 2050 (Plastics, et al., 2015).

Strict implementation of rules by the concerned agencies to do away with single-use plastics and creating awareness among the people on the deleterious effects of plastic contaminants is an urgent need. It is the right time to decide the future life of plastics and if we fail to do so, the situation in sea would be grim and the damages would be irreversible.

**It is not awareness but a warning**

*"By 2050 there will be more plastic than fish in the world's oceans"*

- Sarah Kaplan

Ramya Abhijith, Reeta Jayasankar, M.T. Shilpa, P.K. Ankan, K. Vinod  
 Published by: The Director, ICAR-CMFRRI  
 Chennai ([www.icar-cmfrri.org](http://www.icar-cmfrri.org))

### Save the Sea Say "No" To plastics

Think, The 2020 COVID economic loss, but plastic still as there existed huge economy. It is significant reduction, about 10% of it. It is estimated that 84 up to the ocean every year (plastics, et al., 2015). The discarded single-use used and ultimately reach and streams, in this way or indirectly thrown into ocean a dumping yard of

The macro plastics which gain entry into the sea are subjected to continuous wave action and exposure to sunlight which consequently leads to the fragmentation of them to smaller microplastics and microplastics. Of these, the microplastics and plastics of still smaller sizes are of much concern as they are suitable to enter eye and might be ingested accidentally by living organisms. The Microplastics have greater environmental hazards to marine life. Of the plastics in the sea, about 92% are microplastics in nature which remains for hundreds of years. The sources of plastics are mainly land-based, unregulated coastal tourism and to some extent through fishing activities.

**Types of microplastics**

#### 1. Primary microplastics

Generally, these are manufactured as microplastics for commercial purposes. These kinds of microplastics are mainly used in cosmetics and other industrial applications. The plastic scrubs and beads that are mainly used in facewash, sunscreen and handwash are called primary microplastics. About 10 to 31% of microplastics in the ocean are considered primary microplastics ([www.unaui.org](http://www.unaui.org)).

Plastics are categorized as:

- 1. Macroplastics: More than 25mm
- 2. Mesoplastic: 1mm to 25mm
- 3. Microplastic: 1µm to 1mm
- 4. Nano plastic: 1µm to 1µm

Though advantageous, plastics have become equally dreadful to the environment, including the marine ecosystems.

**Plastics: The dreaded polymers**

During 1940s, the production of plastics was only one million tonnes (World Economic Forum, 2016). The Global plastic production increased substantially to 311 million tonnes in 2014 and further rose to 364 million tonnes in 2019. China is the main producer of plastics and contributes 31%

## Installation art: The Mad Crab

The Mad Crab on the beach, an installation art with plastic waste. Plastics and similar non-biodegradable wastes form the most important threat to marine ecosystems in the 21st



century. This was an effort which CMFRI initiated as a continuation in creating awareness on reducing plastic debris and curbing coastal pollution

A crab made of fishing nets and it was being filled with plastic garbage that had been collected from the beach. The crab was representative both of the sea creatures who succumb due to pollution in the seas and also of the rising incidence of cancers due to environmental pollution.



Installation art by CMFRI at Cherai beach

# Workshops and Exhibitions

ICAR-CMFRI conducts exhibitions to popularise and promote eco-friendly technologies and products developed in the institute. The institute conducted mega exhibitions along with the Scientific symposiums, SAFARI-2 and COMAD in 2018 and Millet and Fish exhibition in 2023. The institute also regularly conducts stakeholder workshops for technology dissemination to fishers, fish farmers and public.

## SAFARI 2 (Societal Applications in Fisheries and Aquaculture using Remote Sensing Imagery) symposium and exhibition

SAFARI 2 symposium and exhibition was organised during 15-17 January 2018 by ICAR-Central Marine Fisheries Research Institute, Kochi, India. Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) inaugurated the second International symposium of the Societal Applications in Fisheries and Aquaculture using Remote Sensing Imagery (SAFARI-2) at the ICAR-Central Marine Fisheries Research Institute, Kochi. The three-day exhibition organised in connection with the symposium provided opportunities for the fishers, farmers, researchers and public to interact with experts in the institute and to gain knowledge on the eco-friendly and novel technologies and products developed in the institute.





Sale of eco- friendly products during SAFARI-II exhibition

## National Conference on Marine Debris (COMAD 2018) and Exhibition

The Marine Biological Association of India organized a National Conference on Marine Debris at CMFRI, Kochi on 11-12 April 2018. The lakes, rivers, estuaries and oceans have become a dumping yard for terrestrial waste and this has threatened the survival of plants and animals of these ecosystems. The marine debris is worse than any other problem faced by aquatic ecosystems. Debris ranging from cigarette butts to large plastic sheets has emerged as the latest threat to sustainability of coastal and marine ecosystem, endangering the fauna, flora, the physical and chemical processes and ultimately the livelihood of thousands of fishers and farmers. The conference served as a platform for researchers to present the actual impact of marine debris and its mitigation to reduce the pollution in the aquatic systems. The exhibition organised in connection with CoMAD 2018 created awareness on eco-friendly products and single use plastic alternatives through sale of these products by various organisations.



## Millet-fish fusion fest offers a grand feast to city foodies

EXPRESS NEWS SERVICE

**A** three-day millet-fish fusion festival began at Central Marine Fisheries Research Institute in Kochi on Thursday. Value added products of millet farmers from Karnataka and food stalls of women's self-help groups are the main attractions of the fest.

The fest showcases a delightful array of millet-fish dishes such as kodo millet-shrimp biryani, little millet-seafood sadya, octopus fry, seaweed halwa, pearl millet smoothie, millet sweets, and many more for every food enthusiasts.

A special highlight of the festival is the Karnataka vegetarian millet food stall, run by a team of 12 farmers, including women, from northern Karnataka. Their offerings include dishes such as cholappam (bread with sorghum), finger millet porri, and many varieties of sweets.

The sale of live fish is another major attraction.

Adding an exciting competi-



tive edge, the fest organised a recipe contest on Thursday, featuring a wide range of millet-fish combo dishes.

Innovations such as fish nirvana, millet khawa, multi-millet steam cake and different varieties of millet biryani were the highlight of the contest.

The festival also features a variety of activities, including a buyer-seller meet, sale of millet and millet-based products besides nutrition health talks and seminars.

Farmers, farmers' producer organisations (FPOs), self-

help groups and agri-startups are exhibiting their products at the festival.

Fruit saplings, vegetable seeds from the Kerala Agricultural University and the meat products procured Kerala Veterinary and Animal Sciences University are also available at the festival. A millet cookery show by culinary experts from Karnataka will be the highlight event on Friday.

A pavilion dedicated to Lakshadweep cuisine is another attraction.

People can visit the fest from 11am to 8pm till Saturday

The fest showcases a delightful array of millet-fish dishes such as kodo millet-shrimp biryani, little millet-seafood sadya, octopus fry, and millet sweets

## Millet and Fish festival

Ernakulam Krishi Vigyan Kendra functioning under the ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI) organised a three-day Millet and Fish festival at ICAR-CMFRI, Kochi, Kerala from 28th to 30th December 2023. The festival, held in line with the observance of the International Year of Millets-2023, had its focus on creating awareness about the rich nutritional value and health benefits of millets as well as their harmonious fusion with fish for a balanced diet. The fest featured a variety of activities, including millet and



fish food festival, buyer-seller meet, live fish sale, sale of millets and millet-based products, millet cookery show, millet recipe contest, technology exhibition, nutrition and health talks, seminars and panel discussion.

A panel discussion at the fest highlighted that increased efforts to promote and popularise the millet products should continue even after the International Year of Millets in 2023. ICAR-Indian Institute of Spices Research, Kozhikode, National Bank for Agriculture and Rural Development, National Fisheries Development Board, Hyderabad, ICAR-Indian Institute of Millets Research, Hyderabad, and ICAR-Central Institute of Fisheries Technology, Kochi were among the partners of the event.

## Workshops

### Workshop on solid waste management

A training-cum-workshop was organised by the ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi on Household waste management using smart biobins. Dr. D. Girija, ICAR Emeritus Professor at the Kerala Agricultural University delivered a lecture on methods for solid waste management at home. The workshop, which was held as part of the 'Swachhta Pakhwada campaign in 2022, also observed that people's faulty outlook is a major impediment to effective and meaningful waste management and stressed the need for a positive behavioural change to make a clean society. She also gave insight into effective composting methods such as KAU smart biobins and Thumbboormozhi aerobic composting developed by Kerala Agricultural University, which are considered practical methods suitable to city life.



Workshop on solid waste management at CMFRI, Kochi

## Workshop on technology for rapid bioconversion of fish waste to fertiliser

Under the waste to wealth initiative, a workshop was conducted at CMFRI, Kochi during the Swachhta Pakhwada campaign in 2023 to sensitize the stakeholders involved in fish farming, processing and trade on technology for rapid bioconversion of fish waste to healthy fertiliser. The institute has developed an indigenous microbial consortium and a novel composting technology that can efficiently convert marine fish waste into valuable organic fertilizer. The technology was promoted through demonstration units.



Workshop on technology for rapid bioconversion of fish waste at CMFRI, Kochi

# Celebrations

Celebrations were conducted during the campaigns by observing *Swachhta Diwas* and *Kisan Diwas*. During *Swachhta Diwas* and *Kisan Diwas*, farmers, fishermen and Safaimitras were honoured. Local leaders and VIPs were also invited during the celebrations.

Under the *Thank you Safai Mitra* initiative, the housekeeping staff at ICAR-CMFRI HQ and various centres were felicitated by presenting mementoes



Honouring the housekeeping staff at CMFRI HQ, Kochi



Honouring the housekeeping staff at Calicut RS of CMFRI



Swachhta Diwas celebrations at CMFRI, Kochi

## Kisan Diwas celebrations

Kisan Diwas (Farmer's Day) was celebrated at various centres of CMFRI during the Swachhta Pakhwada campaigns. During the celebrations, fishers, farmers, officials from various departments and other stakeholders were invited to CMFRI centres. The fishers and farmers were felicitated by presenting mementoes for their efforts to popularise CMFRI technologies. The swachhata awareness was given to the stakeholders and the stakeholders were invited to share their experiences on swachhata. Cultural programmes were also organized as part of the celebrations.

As part of Swachhta pakwada programme, Kisan Diwas was celebrated at Ernavurkuppam by MRS of CMFRI, Chennai. In the meeting 60 villagers participated in addition to the staff members. In the welcome address Dr. R. Narayanakumar, Scientist in charge explained the purpose of the meeting and highlighted CMFRI's role in propagating Swachh Bharat Programme and also stressed the need of hygiene in our life and surroundings. In the meeting, fishermen





also raised their problems related to fishing and sustenance. This was followed by a cultural programme by staff members.

Kisan Diwas was celebrated on 23 December 2023 by the Madras Regional Station at Senjamman Nagar, Pazhaverkadu coastal fishing village, Ponneri Taluk, Tiruvallur District of Tamil Nadu. The Irular tribal community beneficiaries along with the staff members had an on-site visit where the open sea cage cultures are being undertaken. On this occasion, the beneficiaries' farmers were felicitated by the MRS of CMFRI Chennai.



The ICAR-CMFRI, Mandapam Regional Centre has organized Fishermen interaction meet, experience and knowledge sharing for the celebration of Kisan Diwas at Seeniyappa Dharga on 23rd December 2022.



Kisan Diwas was also observed as part of the Swachhta Pakhwada campaign at the Mandapam Regional Centre of ICAR-CMFRI on 23rd December, 2023. A total of 27 sea cage and seaweed farmers from Munaikadu, Mandapam and Vedalai villages in Ramanathapuram district participated and interacted with Scientists of Mandapam Regional Centre of ICAR-CMFRI. Dr. K. Vinod, Principal Scientist & Head delivered the presidential address and briefed the importance of the day. Farmers narrated their success story in seaweed and sea cage farming activities. They also expressed their wholehearted thanks to the Mandapam Regional Centre of ICAR-CMFRI and Govt. of India for supporting their activities



Felicitaton to the progressive fish farmer of Andhra Pradesh by Dr. Joe Kizhakudan, HoRC, Visakhapatnam and Dr. P.Janakiram, Head, DMLR, Andhra University



Farmer's Day was celebrated at New Ferry Wharf by Mumbai RS of CMFRI. Maharashtra State Fisheries Dept. officials, fishermen, and fish trader representatives attended the program. Shri Ajay Nakhawa, Scientist delivered a talk on the importance of personal cleanliness and hygienic practices during post-harvest fish handling. The fishermen and fish trader representatives were felicitated with a flower bouquet and appreciated the efforts taken for the country's nutritional security.

At Calicut RS of CMFRI, Kisan Diwas was celebrated on 23rd December 2022 by felicitating four innovative cage culture farmers, Shri Sathyan, Shri Kunhiraman, Shri Suneesh and Shri Sushilal. A farmer-students-scientists interaction was arranged and students of St. Joseph's college, Devagiri were invited for this interaction. The farmers explained the culture activities to the enthusiastic students.



Kisan Diwas celebration at Calicut RS of CMFRI



Kisan Diwas at Vizhinjam RC of CMFRI



Kisan Diwas at Karwar RS of CMFRI

Veraval Regional Station of ICAR-CMFRI observed Kisan Diwas on 23.12.2023. Progressive fish farmers of schedule caste and schedule tribe have joined the event. Dr. Swathi Lekshmi P.S., Principal Scientist and SIC of the center, acknowledged the keen interest of farmers in adoption of upcoming and innovative mariculture technologies like Integrated Multi-trophic aquaculture (IMTA) and intercropping on Pompano in coastal shrimp farmers. The community leaders of Siddi tribal community, Shri Hasambhai Musagara shared his experience and success stories in lobster farming with technical support of ICAR-CMFRI and he is looking forward to similar success in IMTA based farming. Shri. Vijay Bhai, farmer leader from the SC community, also appreciated the technical support and expertise extended to them in successfully demonstrating the pompano intercropping in the region.



Kisan Diwas at Veraval RS of CMFRI

In connection with the Swachhta Pakhwada activity, Tuticorin Regional Station of CMFRI successfully observed Kisan Diwas on 23rd December 2022. A total of 18 Fishers from three different locations from Threshpuram, Puthiyamputhur and Pullaveli, with the active participation of the staff members of Tuticorin Regional station of CMFRI. Mr Sankar Fisher from Threshpuram informed that people from his region are very aware of the Swachhta cleaning activities initiatives by the Government of India and Tamil Nadu. He also mentioned that municipal corporation employees regularly visit each household to collect waste and get it sorted. After the effective implementation of the Swachh Bharat mission, 1500 toilets were built. People were bringing awareness about the use of toilets and refused open defecation in streets and shore sides. Mr Jaykumar fisher from Puthiyamputhur mentioned that after the implementation of the Swachh Bharat Mission, people from his panchayat became more aware of the cleanliness and waste management and dustbins kept at a commonplace in the village premises for an accessible collection of wastes. He also informed that for the last two years, the village people controlled the solid wastes by handing over the sorted wastes to the panchayat workers for easy management. More than 50 to 60 percent of families had to build toilets as part of the Swachh Bharat Mission to avoid open defecation. According to Mr Ramesh Kumar Fisher of Pullavezhi, 300 households in his hamlet accepted and built toilet facilities as part of the Swachh Bharat initiative.



Interaction with fishers about Swachhta Pakhwada during Kisan Diwas



Kisan Diwas celebration at TRS of CMFRI, Tuticorin

In connection with monthly *Swachhta* celebration at Calicut RS of ICAR-CMFRI, an awareness programme on marine pollution was organised for school students. Almost 30 students participated on the day covering 15 schools of Calicut region. The chief guest of the programme was Kumari Rekha C, Chairperson, Education and Sports Standing committee, Calicut Corporation and interacted with the students by igniting their young minds and making them understand the importance of cleanliness in their daily life.



# Publicity through print, electronic and social media

Wide publicity to the *Swachhata Pakhwada* initiatives of the institute was given through print and electronic media including local and national new papers, social media platforms, website, newsletters and pamphlets to propagate the *swachhata* message.

**Smart biobins suggested for home waste mgmt**

TNN | Dec 23, 2022, 08:38 AM IST



Kochi: Managing kitchen waste is the primary responsibility of any household and there is a need for effective waste management at homes. "People's faulty outlook is the major impediment to effective and meaningful waste management," said Kerala Agricultural University (KAU) emeritus professor D Girija, while speaking at a training-cum-workshop organized as part of the Swachh Bharat campaign at the Central Marine Fisheries Research Institute on Thursday.

Citing the poor practice of waste management in cities, Girija suggested effective composting methods such as smart biobin and Thumboormuzhi model aerobic composting as the practical methods suitable to city life. She further demonstrated the operation of the 'KAU Smart Biobin' developed by the agricultural university.



Twitter interface showing a tweet from CMFRI - Central Marine Fisheries Research Institute. The tweet is dated Nov 1, 2022, and mentions a Swachh Bharat Abhiyan Special campaign 2.0: Cleanliness drive at Dr. Salim Ali Road, Kochi by MBEM & MBFNH Divisions, @ICAR\_CMFRI Headquarters, Kochi. The tweet includes a photo of a cleanliness drive and a group of people holding a banner.



## KVK releases grass carps to clear aquatic weeds

The Hindu dated 3rd November 2022

In an eco-friendly move to clear aquatic weeds, the Ernakulam Krishi Vigyan Kendra (KVK) of ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi released juveniles of grass carp, a freshwater fish that eats aquatic plants, into Kadupadam Chira, Mookkannur in Angamaly. A joint mission to rejuvenate the waterbody with the support of Kadupadam Chira Samrakshana Samithi and Matsya Club, the fish-ranching was part of the Central government's Swachh Bharat campaign.



03 November 2022

### Ernakulam KVK of ICAR-CMFRI releases grass carp fish to clear aquatic weeds



Kochi: In an eco-friendly move to clear aquatic weeds, the Ernakulam Krishi Vigyan Kendra (KVK) of ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi released juveniles of grass carp, a freshwater fish that eats aquatic plants, into Kadupadam Chira, Mookkannur in Angamaly. A joint mission to rejuvenate the waterbody with the support of Kadupadam Chira Samrakshana Samithi and Matsya Club, the fish-ranching was part of the

Central government's Swachh Bharat campaign.

Grass carp fish (*Ctenopharyngodon idella*) had been successfully used in the past too by the KVK to tackle the weed menace in the district. The KVK, functioning under the CMFRI, stepped in to grow these fish in ponds as the waterbodies continue to be fast-infested with weeds even after repeated manual clearing.

## കുടുംബം ചിറ വൃത്തിയാക്കാൻ ഇനി ഗ്രാസ് കാർപ്പ് മീനുകൾ

Aagolavartha dated 3rd November 2022

03 November 2022

### കുടുംബം ചിറ വൃത്തിയാക്കാൻ ഇനി ഗ്രാസ് കാർപ്പ് മീനുകൾ



കൊല്ലി: പാമുൽ നിറഞ്ഞ അങ്കമാലി മുക്കുന്നൂർ കുടുംബം ചിറ വൃത്തിയാക്കാൻ ഇനി ഗ്രാസ് കാർപ്പ് മീനുകൾ. കുക്കുന്ദംകോവിന്റെ സ്വച്ഛഭാരത് കാമ്പയിന്റെ ഭാഗമായി എറണാകുളം കൃഷി വിജ്ഞാന കേന്ദ്രത്തിന്റെ നേതൃത്വത്തിലാണ് പാമുൽ കുക്കുന്ദംചിറ വൃത്തിയാക്കുന്ന ഈ മീനുകളെ വിതരണം നിർവ്വഹിച്ചത്. കുടുംബം ചിറ സംരക്ഷണ സമിതി, മത്സ്യമത്സ്യ എൻവയർമെന്റ് സഹകരിപ്പാണ് ചിറ പുനരുദ്ധനത്തിനായി കൃഷി ചെയ്തതായും ഗ്രാസ് കാർപ്പ് മീനുകളെ നിർവ്വഹിച്ചത്. സാധാരണയിൽ മീൻ ആകൃഷ്ടമായുള്ള വൃത്തിയാക്കലിന് ശേഷം വീണ്ടും കളങ്ങളിൽ പാമുൽ നിറമുള്ള സാഹചര്യത്തിലാണ് ഇതിനായി മീനുകളെ ആകർഷിച്ചത്.

ജലാശയങ്ങൾ വൃത്തിയാക്കുന്നതിന് മില്ലിൽ മൂന്നും കെ വി കെ മൂന്നും നേതൃത്വത്തിൽ ഗ്രാസ് കാർപ്പ് മത്സ്യങ്ങളെ വിതരണമായി പ്രവേശിപ്പിച്ചു. ശരാശരി ഒരു ഗ്രാസ് കാർപ്പ് മത്സ്യം അവയുടെ ആകെ ശരീരത്തിന്റെ രണ്ടു മുതൽ മൂന്നു മുതൽ വരെ പാമുൽ ശേഖരണമാണ്. ഈ മത്സ്യങ്ങൾ കളങ്ങളിൽ പ്രജനനം നടത്താൻ വിതരണത്തിൽ പെടുന്നതിനാൽ ഇവ പേറ്റ് പെടുന്ന പ്രവൃത്തി ഉണ്ടാകുന്നില്ല. ഒരു ഏക്കർ വലിപ്പമുള്ള പാമുൽ നിറഞ്ഞ കളം വൃത്തിയാക്കുന്നതിന് 20 വലിയ ഗ്രാസ് കാർപ്പ് മത്സ്യങ്ങൾ മതിയാകും.

## കേന്ദ്രത്തിന്റെ സ്വച്ഛഭാരത് പദ്ധതി: പാമുൽ നിറഞ്ഞ ചിറ ഇനി മീനുകൾ വൃത്തിയാക്കും

Channel Today dated 3rd November 2022

CHANNEL TODAY 03 November 2022

### കേന്ദ്രത്തിന്റെ സ്വച്ഛഭാരത് പദ്ധതി: പാമുൽ നിറഞ്ഞ ചിറ ഇനി മീനുകൾ വൃത്തിയാക്കും



കൊല്ലി: പാമുൽ നിറഞ്ഞ അങ്കമാലി മുക്കുന്നൂർ കുടുംബം ചിറ വൃത്തിയാക്കാൻ ഇനി ഗ്രാസ് കാർപ്പ് മീനുകൾ. കുക്കുന്ദംകോവിന്റെ സ്വച്ഛഭാരത് കാമ്പയിന്റെ ഭാഗമായി എറണാകുളം കൃഷി വിജ്ഞാന കേന്ദ്രത്തിന്റെ നേതൃത്വത്തിലാണ് പാമുൽ കുക്കുന്ദംചിറ വൃത്തിയാക്കുന്ന ഈ മീനുകളെ വിതരണം നിർവ്വഹിച്ചത്. കുടുംബം ചിറ സംരക്ഷണ സമിതി, മത്സ്യമത്സ്യ എൻവയർമെന്റ് സഹകരിപ്പാണ് ചിറ പുനരുദ്ധനത്തിനായി കൃഷി ചെയ്തതായും ഗ്രാസ് കാർപ്പ് മീനുകളെ നിർവ്വഹിച്ചത്. സാധാരണയിൽ മീൻ ആകൃഷ്ടമായുള്ള വൃത്തിയാക്കലിന് ശേഷം വീണ്ടും കളങ്ങളിൽ പാമുൽ നിറമുള്ള സാഹചര്യത്തിലാണ് ഇതിനായി മീനുകളെ ആകർഷിച്ചത്.

ജലാശയങ്ങൾ വൃത്തിയാക്കുന്നതിനായി മില്ലിൽ മൂന്നും കെ വി കെ മൂന്നും നേതൃത്വത്തിൽ ഗ്രാസ് കാർപ്പ് മത്സ്യങ്ങളെ വിതരണമായി പ്രവേശിപ്പിച്ചു. ശരാശരി ഒരു ഗ്രാസ് കാർപ്പ് മത്സ്യം അവയുടെ ആകെ ശരീരത്തിന്റെ രണ്ടു മുതൽ മൂന്നു മുതൽ വരെ പാമുൽ ശേഖരണമാണ്. ഈ മത്സ്യങ്ങൾ കളങ്ങളിൽ പ്രജനനം നടത്താൻ വിതരണത്തിൽ പെടുന്നതിനാൽ ഇവ പേറ്റ് പെടുന്ന പ്രവൃത്തി ഉണ്ടാകുന്നില്ല. ഒരു ഏക്കർ വലിപ്പമുള്ള പാമുൽ നിറഞ്ഞ കളം വൃത്തിയാക്കുന്നതിന് 20 വലിയ ഗ്രാസ് കാർപ്പ് മത്സ്യങ്ങൾ മതിയാകും.

# Painting Competition in connection with Swachh Bharat



31 October 2022

## ചിത്രരചനാ മത്സരം സംഘടിപ്പിച്ചു

കോഴിക്കോട് സ്വച്ഛ ഭാരത് അഭിയാൻ പരിപാടിയുടെ ഭാഗമായി സെന്റ്രൽ മറ്റേൻ ഫിഷറീസ് ഇൻസ്റ്റിറ്റ്യൂട്ട് (സിഎഫ്ഐആർഐ) കോഴിക്കോട് മേഖല കേന്ദ്രത്തിൽ സ്കൂൾ വിദ്യാർത്ഥികൾക്ക് ചിത്രരചനാ മത്സരം സംഘടിപ്പിച്ചു. സയന്റിസ്റ്റ് ഇൻ ചാർജ് ഡോ. പി.കെ.അശോകൻ, പ്രിൻസിപ്പൽ സയന്റിസ്റ്റ് ഡോ. കെ.വിനോദ്, സ്വച്ഛ ഭാരത് കോ-ഓർഡിനേറ്റർ രാജു അഭിജിത്ത്, സീനിയർ സയന്റിസ്റ്റ് അനൂലക്ഷ്മി ചെല്ലപ്പൻ, സയന്റിസ്റ്റുമാരായ ഡോ. ഷിർട്ട് ഏ.തോമസ്, ഡോ.കെ.വി അഖിലേഷ് എന്നിവർ നേതൃത്വം നൽകി.



സിഎഫ്ഐആർഐ കോഴിക്കോട് മേഖല കേന്ദ്രം വിദ്യാർത്ഥികൾക്കായി നടത്തിയ ചിത്രരചനാമത്സരത്തിൽ നിന്ന്

Krishi Vigyan Kendra (Ernakulam) functioning under Central Marine Fisheries Research Institute (ICAR) displayed a poster depicting importance of waste segregation at source itself and reduction and reuse of plastics in its stall as part of 4 days long exhibition promoting green protocol as a public awareness campaign for a cleaner environment as part of Swachhta Pakhwada programme. Many extension functionaries of State departments like Agricultural officers, Deputy Directors, ADA, Scientists from other ICAR institutes like CIFT visited the stall. 1600 farmers visited the stall and awareness about plastic reuse and reduction in usages was conveyed to them. Further, as follow up programme of the training conducted on Organic manure production using household wastes, the microbial consortium used for composting of wastes was distributed to the trainees

### ശുചിത്വ ഭാരതത്തിനായി മനുഷ്യചങ്ങല തീർത്തു

കൊല്ലം ജില്ലയിലെ മറ്റേൻ ഫിഷറീസ് ഇൻസ്റ്റിറ്റ്യൂട്ട് (സിഎഫ്ഐആർഐ) കോഴിക്കോട് മേഖല കേന്ദ്രത്തിൽ സ്കൂൾ വിദ്യാർത്ഥികൾക്ക് ചിത്രരചനാ മത്സരം സംഘടിപ്പിച്ചു. സയന്റിസ്റ്റ് ഇൻ ചാർജ് ഡോ. പി.കെ.അശോകൻ, പ്രിൻസിപ്പൽ സയന്റിസ്റ്റ് ഡോ. കെ.വിനോദ്, സ്വച്ഛ ഭാരത് കോ-ഓർഡിനേറ്റർ രാജു അഭിജിത്ത്, സീനിയർ സയന്റിസ്റ്റ് അനൂലക്ഷ്മി ചെല്ലപ്പൻ, സയന്റിസ്റ്റുമാരായ ഡോ. ഷിർട്ട് ഏ.തോമസ്, ഡോ.കെ.വി അഖിലേഷ് എന്നിവർ നേതൃത്വം നൽകി.



ശുചിത്വ ഭാരതത്തിൽ നിന്ന്



An installation being moved from Fort Kochi beach on Sunday. The installation, set up by Central Marine Fisheries Research Institute and Cochin Shipyard, aimed at creating awareness among public on coastal pollution. It was kept at Fort Kochi beach for almost five months

**സുരഭിഭാരം**

കൊച്ചി തീരക്കടലിൽനിന്നു വലകൾ ഉപയോഗിച്ച് മാലിന്യം നീക്കുന്ന സി.എം.എഫ്.ആർ.ഐ സംഘം

**കൊച്ചി തീരക്കടലിൽ ശുചീകരണവുമായി സി.എം.എഫ്.ആർ.ഐ**

കൊച്ചി: അന്താരാഷ്ട്ര തീര ശുചീകരണ ദിനമാകുന്ന ഓക്ടോബർ 19 നുവേണ്ടി കൊച്ചി തീരക്കടലിൽനിന്നു വലകൾ ഉപയോഗിച്ച് മാലിന്യം നീക്കുന്ന സി.എം.എഫ്.ആർ.ഐ സംഘം

**സിവിൽ ഹൽവ, തിരച്ചൽ ശ്രമം, ചാമ സാഗരസേവ, വരൾ ബിരിയാണി...**

## ഭക്ഷ്യപ്രേമികളെ ആകർഷിച്ച് മില്ലറും മീനും പ്രവർത്തന ഭക്ഷ്യമേള

കൊച്ചി കടൽത്തീരത്ത് (സൗദി) ഹൽവ, മീനും, ചാമ സാഗരസേവ, വരൾ ബിരിയാണി... ഭക്ഷ്യപ്രേമികളെ ആകർഷിച്ച് മില്ലറും മീനും പ്രവർത്തന ഭക്ഷ്യമേള. കൊച്ചി കടൽത്തീരത്ത് (സൗദി) ഹൽവ, മീനും, ചാമ സാഗരസേവ, വരൾ ബിരിയാണി... ഭക്ഷ്യപ്രേമികളെ ആകർഷിച്ച് മില്ലറും മീനും പ്രവർത്തന ഭക്ഷ്യമേള.

കൊച്ചി കടൽത്തീരത്ത് (സൗദി) ഹൽവ, മീനും, ചാമ സാഗരസേവ, വരൾ ബിരിയാണി... ഭക്ഷ്യപ്രേമികളെ ആകർഷിച്ച് മില്ലറും മീനും പ്രവർത്തന ഭക്ഷ്യമേള.

As part of the Swachh Bharat Abhiyan, the Central Marine Fisheries Research Institute (CMFRI) has launched the Swachhata Pakhwada, a 14-day cleanliness drive, at their headquarters in Kochi and its various research and field centres in the country. Under the programme, the staff of the CMFRI will clean public places including fisheries harbours and beaches. Besides cleaning activities, awareness classes and various competitions will also be conducted during the period from October 17 to 31. During the inaugural meeting in Kochi, a 'Swachhata Pledge' was taken by all the participants.

INDIAN EXPRESS Wed, 19 October 2016 epaper.newindianexpress.com

## ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി

ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി. ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി. ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി.

ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി. ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി. ഗാനധി ജയന്തി: ശുചീകരണം നടത്തി.

# Awards / Accolades

ICAR-CMFRI made significant contributions to the Clean India movement of the country through successful implementation of Swachh Bharat Abhiyan. In recognition to its contributions towards a Garbage Free India, the institute was awarded second prize in the prestigious 'Swachhta Pakhwada award in 2018 among the institutes functioning under Indian Council of Agricultural Research (ICAR). ICAR-CMFRI also secured first place in the Swachhta Pakhwada award / ranking of ICAR institutes in 2022. The awards were given for the institute's commendable contributions to the swachhta movement through development and promotion of eco-friendly and novel technologies for conversion of waste, use of digital technologies, waste to wealth initiatives, efforts to create awareness among the public on the dangers of plastic litter in marine ecosystem, coastal clean-up activities and massive awareness programmes involving community participation. ICAR-CMFRI received the Sardar Patel Outstanding ICAR Institution Award (For large institute category) in 2019



Director, CMFRI receiving the Swachhta Pakhwada Award (2018)

A short movie titled 'Ocean or plocean?' with a message to reduce littering produced by ICAR-CMFRI won the Beaver Bronze award under the science documentary section in Rashtriya Vigyan Chalachitra Mela and Competition, 2014 (National Science Film Festival,) organised by Vigyan Prasara, National Institute of Science and Technology Communication, Noida and National Council of Science Museums, Kolkata, held at Bengaluru in February, 2014.

ICAR-Central Marine Fisheries Research Institute (CMFRI) also received 'Cashless ICAR Institute Award' from Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers Welfare, for implementing cashless transactions in the institute. The Krishi Vigyan Kendra, Ernakulam of ICAR-CMFRI also received the award for cashless transactions.

# Swachh Bharat Abhiyan at ICAR- CMFRI: Significant achievements in the past decade

ICAR-CMFRI made significant headway in the Clean India Movement of the country through the successful implementation of the Swachh Bharat Abhiyan Campaign. CMFRI developed several eco-friendly and low carbon technologies for fishing and farming to ensure sustainable fish production from the marine and coastal waters of the country. The institute has developed several novel technologies aligning with the goals of the Swachh Bharat Mission. The major milestones in the success journey of Swachh Bharat Abhiyan at CMFRI are;

- Implementation of digitisation in all aspects of official functioning through effectively implementing e-office and promotion of digital technologies which minimised paper use and enabled faster communication
- Development of waste to wealth technologies such as Black Soldier Fly Larvae (BSFL) based organic bio-conversion system and microbial consortium for rapid bioconversion of fish waste to fertilizer
- Promoting commercial production of fish fertilizer (Fishlizer) from fish wastes through women entrepreneurs and self-help group members for effective waste management and a viable option for income generation
- Effective solid waste management in campuses by installing compost pits, biogas plants, glass crusher units, fuel free incinerators, sanitary napkin incinerators etc.
- Development and promotion of technology for soilless medium for farming using composted pressmud, a by-product from sugar mills is another waste to wealth initiative
- Promotion of Grass carp fish to control aquatic weeds to prevent pollution and flooding in aquatic systems
- Significant efforts to promote clean and healthy oceans and sustainable fish production through conducting beach and ocean clean-up drives with the active involvement of local communities, non-governmental organizations (NGOs), and volunteers in clean-up efforts to build a sense of responsibility among citizens
- Innovative massive public awareness programmes on plastic pollution through huge art installations such as Fish cemetery and Mad Crab in public places.

- CMFRI undertook extensive work on assessing the marine litter in Intertidal region, fishing grounds and backwaters along Indian coast line and also in gut of marine organisms since 2012. The litter status of Indian beaches are given in CMFRI infographics page a graphic visual representation of beach-wise litter related information intended for mass communication
- Measures to encourage the recycling and reuse of plastics and discourage the use single use plastic by promoting the production and sale of eco-friendly bags.
- Awareness programmes across the coastal states of the country with active participation of various government departments, NGOs, local bodies, self-help groups, educational institutions to propagate the swachhata message

## Moving Forward

To sustain the Clean India Movement, the future efforts should focus on collective action of organisations and communities to develop, promote and adopt sustainable technologies for sanitation, solid waste management and plastic waste recycling. The following measures are suggested for advancing the Swachhata movement to achieve the ambitious goals in the next stage.

- Promoting the cost -effective and eco- friendly technologies developed in the institute for solid waste management in villages and cities
- Indigenous technologies to tackle water pollution and access to safe and clean drinking water
- Promoting eco- friendly alternatives to single use plastics and cost-effective technologies for plastic waste recycling
- Technologies for biofuel production from agricultural wastes and sea weeds to reduce the carbon footprint
- Investment in cost- effective technologies to remove plastic debris and micro plastics from water bodies
- Mitigating marine plastic pollution through regulatory measures, public awareness campaigns, technological innovation, and collective action and incentives to promote cleaner and healthy oceans
- Enforcement of strict regulations for proper disposal of plastic waste and impose penalties for illegal dumping
- Social and behavioural change campaigns for sustainable sanitation in villages and cities involving community leaders, volunteers and information and communication technologies

# Acknowledgements

We express our sincere gratitude to the Scientist-in -Charges of all Regional Centres, Research Stations, Heads of Krishi Vigyan Kendras and Swachh Bharat Committee Nodal officers and committee members at CMFRI HQ, Kochi, Regional Centres and Research Stations for their commendable contributions for the successful conduct of the Swachh Bharat Abhiyan at CMFRI during the past decade. Thanks are also due to all Heads of Divisions and staff members CMFRI for their active participation in the Swachh Bharat Abhiyan programmes of the institute.

# Appendix

## Swachh Bharat Abhiyan Committee of ICAR- CMFRI, Kochi (2016-2021)

Sl No.	Name	Role
1.	Dr. Shyam S. Salim	Nodal officer
2.	Dr. Molly Varghese	Member
3.	Dr. Rekha J. Nair	Member
4.	Dr. V.P. Vipin Kumar	Member
5.	Dr Miriam Paul Sreeram	Member
6.	Dr.Vivekananda Bharathi	Member
7.	Dr. Reshma Gills	Member
8.	Dr. Shinoj Subramannian	Member
9.	Dr. G. Shylaja	Member
10.	Shri. Thomas Joy	Member
11.	Shri. A.T. Sunil	Member
12.	Shri. Joseph Mathew	Member
13.	Shri. P.S. Anil Kumar	Member
14.	Shri. K.M. David	Member
15.	Shri. Jestin Joy K.M.	Member
16.	Smt. Dipti N.V.	Member
17.	Dr. Sajeela K. A.	Member
18.	Smt. Smitha K	Member
19.	Shri. T. Rajesh Babu	Member
20.	Shri. Sunil P.V.	Member
21.	Shri. M.T. Vijayan	Member
22.	Shri. Augustine Sipson N.A	Member
23.	Shri. Vipinkumar K.K.	Member
24.	Shri. Jijil K.M.	Member
25.	Shri. Thobias P Antony	Member
26.	Smt. Reshma K.S.	Member
27.	Smt. Hima P.H.	Member
28.	Shri. Kiran K.M.	Member
29.	Smt. Annies Mary Paulose	Member
30.	Shri. Rajesh T. K.	Member
31.	Smt. Aswathy A. S.	Member
32.	Shri. Akhil Babu V.	Member
33.	Shri. Akhil A. R.	Member
34.	Shri. Prashanth P. K.	Member
35.	Smt. V.K. Sobha	Member Secretary

## Swachh Bharat Abhiyan Committee of ICAR- CMFRI, Kochi (2022-2024)

Sl No.	Name	Role
1.	Dr. N. Aswathy	Nodal Officer
2.	Dr. Miriam Paul Sreeram	Member
3.	Dr. V.P. Vipinkumar	Member
4.	Dr. Rekha J. Nair	Member
5.	Dr. Shinoj Subramannian	Member
6.	Dr. G. Shylaja	Member
7.	Shri. P.S. Anilkumar	Member
8.	Shri. Thomas Joy	Member
9.	Smt. Smitha K.	Member
10.	Shri. A.T. Sunil	Member
11.	Shri. K.M. David	Member
12.	Shri. Jestin Joy K.M.	Member
13.	Shri. Sunil P.V.	Member
14.	Shri. M.T Vijayan T	Member
15.	Shri. Augustine Sipson N.A.	Member
16.	Shri. Vipinkumar K.K.	Member
17.	Shri. Thobias P. Antony	Member
18.	Smt. Reshma K.S.	Member
19.	Smt. Hima P.H.	Member
20.	Shri. Vysakhan P.	Member
21.	Shri. Roopesh E.A.	Member
22.	Smt. V.K. Shoba	Member Secretary

**From:** ADG Coordination, ICAR <adgcoordination@gmail.com>

**Sent:** Wednesday, February 14, 2024 1:15 PM

**To:** Director CMFRI; Agricultural Technology Application Research Institute, Ludhiana; Director IIWM; Director CIFT; Director, NINFET; Director CIBA; Director Spices; Director NBFGR; Director CPRI; cish.lucknow; Director CIRCOT

**Cc:** Dr Sanjeev Panwar; section officer; Assistant Director General - Coordination Unit/ Awards Cell

**Subject:** Swachhta Pakhwada Rank/Award for the year 2022

Sir,

It gives me immense pleasure to inform you that, as per the directions of Cabinet Secretary and Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti, GOI, the Swachhta Pakhwada was celebrated/observed in the DARE/ICAR (Department of Agricultural Research and Education/Indian Council of Agricultural Research) during 16-31 December 2022. The rank/award of the same is decided on the basis of guidelines provided by DDWS and applications received from the ICAR establishments. The Award/Rank of Swachhta Pakhwada for the year 2022 have been decided by the competent authority and the same is as follows:

<b><u>Award/Rank</u></b>	
<b>Rank/Award 1</b>	ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi, Kerala
<b><u>Joint Award/Rank</u></b>	
<b>Rank/Award 2</b>	ATARI Zone-I, Ludhiana
	ICAR-Indian Institute of Water Management (IIWM), Bhubaneswar
<b>Rank/Award 3</b>	ICAR-Central Institute of Fisheries Technology (CIFT), Cochin
	ICAR- National Institute of Natural Fibre Engineering and Technology (NINFET), Kolkata
<b><u>Appreciation Award</u></b>	
	ICAR-Central Institute of Brackishwater Aquaculture (CIBA), Chennai
	ICAR-Indian Institute of Spices Research (IISR), Kozhikode
	ICAR-National Bureau of Fish Genetic Resources (NBFGR), Lucknow
	ICAR-Central Potato Research Institute (CPRI), Shimla
	ICAR-Central Institute of Subtropical Horticulture (CISH), Lucknow
	ICAR-Central Institute for Research on Cotton Technology, (CIRCOT)Mumbai

With regards,

Sincerely,

--

**Dr. Anil Kumar**

**Assistant Director General (Coordination), ICAR**

Indian Council of Agricultural Research

Krishi Bhawan, New Delhi, 110001

Mobile-91-8851904246







Indian Council of Agricultural Research  
**Central Marine Fisheries Research Institute**

Post Box No.1603, Ernakulam North P.O., Kochi-682 018, Kerala, India.  
Phone: +91 484 2394357, 2394867 Fax: +91 484 2394909  
E-mail: [director@cmfri.org.in](mailto:director@cmfri.org.in), [director.cmfri@icar.gov.in](mailto:director.cmfri@icar.gov.in)  
[www.cmfri.org.in](http://www.cmfri.org.in)



ISSN 0972-2351