



## About CMFRI

ICAR-Central Marine Fisheries Research Institute (CMFRI) was established on 3rd February 1947 and celebrated the 75th Anniversary in 2022. CMFRI is the premier Institute to conduct basic and applied research in marine fisheries and mariculture in India. Human resource development by organizing specialized training courses is a major commitment of the Institute to upgrade the knowledge base of scientists, teachers, subject matter specialists, farmers, and planners engaged in the area of marine fisheries in the country. The Institute has excellent facilities for undertaking R&D activities in the areas of mariculture activities, such as brood bank for high valued fishes, hatchery, larval rearing facilities, cage farms, well equipped analytical laboratory with analytical equipment for assessment of water quality, nutrition studies, biotechnological analyses and health management and monitoring. The institute has one of the leading library facilities in the Asian region for fisheries with an open access for publications as [Eprints@cmfri](mailto:Eprints@cmfri). Institute has a national referral museum for marine organisms with many rare specimens in it. The Institute is located close to the Kerala High Court and is 3 km from Ernakulam railway station and 30 km from airport. During February, the weather is pleasant and stay will be comfortable.

## About the Winter School

The winter school on "Mariculture technologies for income multiplication, employment, livelihood and empowerment" is a topic of current importance. During the last fifteen years,

mariculture technologies have been developed remarkably in India, mainly with the efforts of ICAR-CMFRI. Since aquaculture, especially mariculture is dominated by small-scale farmers who are either fishermen or farmer, raising productivity per unit volume of water is the most important factor, if income of these groups is to be multiplied. In the present stage of slow and gradual development, input costs in mariculture is affordable. However, on establishing into an industrial sector, mariculture will be forced to change its course due to economic concerns such as rise in the cost of energy, feeds and seed for culture, low market prices, deterioration of environmental conditions and many other factors of concern. Before these constraints are tried to be resolved, advanced scientific knowledge and technologies must be integrated to develop sustainable practices. Leaving coastal aquaculture, expansion of mariculture activities to open-sea and off shore areas would be one route to follow then. Technologies for hatchery production of seed, development of diets not only for young but also for adults and larvae, establishment of feeding standards, prevention of diseases etc. must be taken care for the establishment of enhanced production and sustainable mariculture. CMFRI has been established as the leading mariculture research institute in the country and in the Asiatic region. The winter school would provide an opportunity for the researchers towards exposure on to a lasting experience in mariculture research of the institute. The participants could listen to many eminent researchers in mariculture and there will be field visits and exposure meetings.

## Objective

The objective of the winter school is to provide exposure to the participants in mariculture research in India with a wider exposure on activities carried out by CMFRI.

## Course Content

The winter school curriculum will be largely based on the needs of the participants and include various aspects of Mariculture research. The classes will be conducted by eminent scientists of CMFRI as well as guest faculties from different organizations. Some of the topics covered are as follows:

- Overview of Mariculture
- Molluscan mariculture & seed production
- Crustacean mariculture and seed production
- Prioritisation of finfishes for mariculture
- Seed production and grow-out culture of high valued finfishes
- Live feed culture
- Cost-effective cage farming technology
- Health Management in mariculture
- Feeds & Feed Management in mariculture
- Environment management in mariculture
- Super intensive biofloc production technologies
- RAS Technology for intensive farming
- IMTA (Fish & molluscs)
- Socio-economics in mariculture



## Eligibility

The ICAR sponsored winter school is open for participants from ICAR Institutes/ State Agricultural Universities/ Central Agricultural Universities/ Krishi Vigyan Kendras/ Universities and Colleges with related activities. The participants should possess M.Sc. degree from any of the recognized university in Fisheries/Life Sciences subjects, working in the relevant fields as mentioned above not below the rank of Assistant Professor or equivalent. Participants will be selected on the basis of their qualification and relevance in the present area of working. A maximum of 25 participants will be selected based on their experience and area of working. One to two participants may be sponsored from each Institute/Organization.

## How to Apply?

The eligible candidates may see the guidelines available at the web site for the winter school at <http://lasri.res.in/cbp/ToDownload/Guidelines/training/program.pdf> and also send their applications through proper channel in the prescribed format to Dr. Imelda Joseph, Winter School Director, ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi-18. The last date for the receipt of the nomination is **31<sup>st</sup> December 2022**. The selected candidates will be informed by **10<sup>th</sup> January 2023**. Please scan the QR code provided in the brochure for application format.

## Registration Fees

The participants are required to pay a sum of Rs. 50/- (Rupees Fifty only) as registration fee (Non-refundable) along with the completed application in the form of an Indian Postal Order in favour of Director, CMFRI, payable at Kochi.

## Boarding and Lodging

Free boarding and lodging will be provided to the participants as per the approved ICAR norms for winter school. Please note that, no accommodation will be provided to the family members or guests of the participants.

## Travel

Participants will be paid travel fare to and fro through the shortest route from their respective institution to CMFRI, Kochi and back for journey by AC-II/III class train fare or bus as the case may be. TA will be paid on production of the tickets by the participant.

## How to Reach CMFRI, Kochi

Kochi is well connected by air, rail and road. Pre-paid auto rickshaw and taxi can be availed at railway station to reach CMFRI, which is located very close to the Kerala High Court.

## For more information contact

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Please scan this  
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**Indian Council of  
Agricultural Research (ICAR),  
New Delhi  
Sponsored**

**Winter School on  
Mariculture Technologies for  
Income Multiplication,  
Employment, Livelihood and  
Empowerment**

**February 07-27, 2023**



Organized by

**ICAR-Central Marine Fisheries Research Institute (CMFRI)**

Post Box No. 1603, Ernakulam North P.O., Kochi-682 018,  
Kerala, India