

ICAR Sponsored  
Winter School on

# Advanced Analytical Tools for Social Science Research

11-31 January 2023



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

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



## Introduction

Like in every other field of study, the use of pertinent and statistically valid judgments derived from research programmes is the foundation for the growth of social science disciplines. Social science demands high-quality research outputs to effectively design policies and implement programmes as it examines how people interact with one another and with their environment. It calls for the use of precise and cutting-edge analytical tools for deriving conclusions from scientifically gathered data and hence improving scientific research and reporting efficiency. Technology advancements and the development of analytical software have made the data analysis process less laborious. However, it is crucial that researchers, particularly those working in social science research considering agriculture / fisheries / animal science, have a solid understanding of modern statistical and econometric methods so that they can use them appropriately and make the proper inferences. Therefore, this course aims to give social science researchers working under the national agricultural research and education system (NARES) an opportunity to update their analytical skills and become more familiar with cutting-edge analytical methods and software. The focus of the course is mostly on the application part, with a greater emphasis on the interpretation of the results. It uses a mix of lectures and hands-on exercises using statistical packages like R, SPSS etc.

## Objectives

- To familiarize the participants with the advanced analytical tools for social science research
- To acquaint the participants with the use of statistical software packages for data analysis
- To help in upgrading the analytical skills of the participants under the national agricultural research and education system

## Main Themes

- Fundamental statistical tools for data analysis
- Exploratory data analysis
- Sampling techniques for social science research
- Data classificatory techniques
- Dimensionality reduction techniques
- Non-parametric methods
- Statistical software packages
- Tools for econometric/economic analysis
- Case study research
- Linear and nonlinear time-series modeling/ forecasting tools
- GIS and spatial modeling
- Cointegration technique
- Stochastic volatility models
- Scaling techniques
- Multivariate time series analysis
- Data mining and big data analytics
- Machine learning techniques
- Social network analysis
- Qualitative regression analysis
- Impact assessment tool
- Tools for ecosystem service evaluation

The course is divided into several theme-based modules, including classroom lectures and hands-on exercises using statistical software. The analytical and inferential aspects of social science research in agriculture / fisheries and animal science will be the main focus of the course. The emphasis would be on statistical software package-based data analysis in addition to theory and applications. All participants will have access to the instructional guides/ training manuals that make up the course contents. The participants are requested to bring one or two sets of the participants' own study data with them. These data sets can be analyzed using the appropriate statistical analytical procedures, and the findings can be discussed in class.

## About ICAR-CMFRI

The ICAR-Central Marine Fisheries Research Institute (CMFRI) was founded by the Government of India on February 3, 1947, and is currently recognized as one of the world's top tropical marine fisheries research institutions. Since its establishment, the CMFRI has expanded greatly in size and stature, developed a suitable research infrastructure, recruited qualified personnel, and more. The institute is mandated to monitor and assess the marine fisheries resources of the Exclusive Economic Zone, including the impact of climate and anthropogenic activity and develop sustainable fishery management plans apart from the research being carried out in mariculture to enhance production. One of the major achievements of CMFRI is the development and refinement of a unique method for the estimation of fishery catch and effort from the over 8000 km coastline through the Stratified Multistage Random Sampling (SMRS). The institute is maintaining the National Marine Fisheries Data Centre (NMFDC) with over 9 million catch and effort data (collected and estimated using SMRS) records from all maritime states of India of more than 1000 fished species. The Institute has a distinct and separate social science division that is actively involved in updating and maintaining enormous databases on marine fish landings, conducting fish stock assessments, valuation of marine fish landings, management advisories, policy formulation and documentation, etc. Therefore, it makes perfect sense that the institute is organizing a training of this kind for the NARES.



## Eligibility

Faculty and researchers in social science and related disciplines from State Agricultural Universities / ICAR Institutes / Central / State fisheries and veterinary universities / KVKs under NARES, not below the rank of Assistant Professor / Scientist or equivalent in the concerned subject are eligible to apply.

## Selection of Participants

Twenty-five participants will be selected for the programme. Candidates with experience in fields pertaining to the training will be given preference. Participants' nomination from the respective heads of organizations does not entail confirmed participation in the programme. The ICAR-CMFRI will provide an official confirmation letter outlining the candidates' selection.

## How to Apply

The eligible candidates should register and submit their application online using the CBP portal of the Agricultural Education Division, ICAR (<https://cbp.icar.gov.in>). After filling up the online application, take a printout of the application form and get it approved by the competent authority of your organization. Upload the approved form (scan copy) on the CBP portal. The original copy along with ₹ 50/- in the form of a Demand Draft/Indian Postal Order (Non-refundable) drawn in favour of The Director, CMFRI, payable at SBI Ernakulam Branch, Kochi, should be sent to Dr. Eldho Varghese, Winter School Director, Fishery Resources Assessment and Economics Division, ICAR-Central Marine Fisheries Research Institute, Post Box. No. 1603, Ernakulam North P.O., Kochi-682 018, Kerala, India. The DD/PO should be valid for 6 months till May 2023.

An advance copy of the application (scan copy) may be emailed to the course director at [wscmfri22@gmail.com](mailto:wscmfri22@gmail.com), to avoid any postal delays. However, the application will only be taken into consideration for the final selection once the approved original copy has been received. You can acquire

detailed guidelines for participating in the ICAR winter school on the CBP webpage.

## Dates to Remember

**Last date for receipt of applications : 30 November 2022**

**Intimation to selected candidates : 10 December 2022**

## Travel, Boarding and Lodging

Free boarding and lodging will be provided to the participants during the training programme as per the approved ICAR norms for Winter School. The candidates are eligible for Travelling Allowance only for travelling by train to the maximum of AC II-tier (AC III-tier for Rajdhani / Duronto train) fare by the shortest route. Please note that, strictly, no accommodation in the guest house will be provided to the family members or guests of the participants.

## For more information contact

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