

## ICAR-CIFT Mumbai Launches "Vikalpika" – India's First Electric Fishing Vessel

*Revolutionizing Sustainable Marine Fisheries with Clean Energy Solutions*

9 June 2025, Mumbai

In a landmark development for India's marine fisheries sector, the Mumbai Research Centre of the ICAR-Central Institute of Fisheries Technology successfully launched "Vikalpika", the nation's first electric fishing vessel, on 26 May 2025 at Gorai Creek, Mumbai. This pioneering innovation marks a critical step towards decarbonizing marine operations, aligning with India's commitment to sustainable and climate-resilient development.

The project is the result of a strategic collaboration between ICAR-CIFT and the Automotive Research Association of India (ARAI), Pune, supported by the Department of Fisheries, Government of Maharashtra, and the Mangrove Foundation, Mumbai. A formal Memorandum of Understanding (MoU) for this collaboration was signed on 6 February 2024.



### Key Features of "Vikalpika"

- Length: 7.92 meters (26 feet)
- Propulsion: Series Hybrid System
  - o 20 HP Diesel Engine (for emergency use)
  - o 23 kWh Lithium Battery (primary propulsion)
  - o 1.65 kW Solar Panel System (supplementary source)
- Operational Range: Up to 10 km offshore
- Endurance: 8–10 hours on a full charge
- Fuel Reduction: Up to 70% compared to conventional vessels
- Cost of Retrofitting: ₹15,00,000 (for vessels with 10–40 HP engines)
- Annual Operation Cost: Approx. ₹50,000 (battery charging)
- Return on Investment (ROI): Estimated at 3.18 years (without subsidy)

Dr. George Ninan, Director, ICAR-CIFT, reaffirmed the institute's dedication to sustainable fisheries through innovation and clean energy adoption.

The launch was graced by Dr. N. P. Sahu, Director (In-Charge), ICAR-CIFE Mumbai, as the Chief Guest. He emphasized the urgency of adopting green technologies for India to achieve its net-zero emission targets and praised the model partnership between ICAR-CIFT and ARAI.

Following the formal proceedings, the flagging-off ceremony of Vikalpika took place at Gorai Creek, accompanied by media interactions, group photographs, and a networking lunch.

In his closing remarks, Dr. George Ninan stated that "Vikalpika stands as a shining example of cross-sectoral collaboration and technological innovation for sustainable fisheries development."

Vikalpika is now set for field trials at selected coastal locations in Maharashtra to evaluate its performance, energy efficiency, and economic viability under



The initiative is led by Shri Shravan Kumar Sharma, Scientist at ICAR-CIFT Mumbai, as Principal Investigator under the Alternate Fuel and Energy Systems (AFES) Project. Key team members include Dr. Baiju M. V. and Shri Paras Nath Jha from ICAR-CIFT, and Dr. Sushil S. Ramdasi and Shri Rakesh Mullick from ARAI, Pune.

The launch event witnessed participation from multiple stakeholders, including officials from the Department of Fisheries, Government of Maharashtra, ICAR-Central Institute of Fisheries Education, Mumbai, ICAR-Central Marine Fisheries Research Institute, Mumbai, Fishery Survey of India, MPEDA Mumbai, SASMIRA Mumbai, ARAI Pune, Bank of India HQ, Mumbai, Fibre Tech Gorai (Boat Builder), Innovegic India, Bangalore (EV Kits and Solar Supplier), MP Ensystems, Goa, Gorai Machchimar Society and other local fishermen groups.

A significant milestone during the event was the signing of an MoU between ICAR-CIFT and Bank of India, aimed at facilitating financial support and expanding the adoption of ICAR-CIFT-developed technologies, including Vikalpika.

The launch of Vikalpika represents a significant advancement in India's transition toward environmentally sustainable marine fisheries. By reducing dependence on fossil fuels and enhancing operational efficiency, the vessel paves the way for cleaner, more economical, and climate-resilient fishing practices across the Indian coastline.