STI-Hub at ICAR-CMFRI for advanced scientific collaboration and innovation

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The 'Science Technology and Innovation (STI) Hub in Fisheries Sector' is a visionary project by ICAR-Central Marine Fisheries Research Institute (CMFRI), funded by the Department of Science & Technology (DST), New Delhi, with a budget of 3.18 crores over three years (2022-2025). This transformative initiative aims to revamp infrastructure and implement fishery-based entrepreneurial interventions, particularly benefiting Scheduled Caste (SC) communities. Starting in Ernakulam and expanding across Kerala, it promises to enhance livelihoods and foster sustainable fishing practices. The state-of-the-art STI-Hub at ICAR-CMFRI is being developed as a beacon of scientific collaboration and innovation, propelling entrepreneurial capacity building on fishery-based technologies and unlocking new opportunities for sustainable growth.

The project focuses on identifying fishery-based micro-enterprises based on the predominant livelihood options that meet the needs of SC stakeholders and promotes Entrepreneurial Capacity Building (ECB) through training and sustainable ventures. Successes in ECB are recorded and shared using innovative ICT methods to boost the hub's impact. Additionally, the hub helps SHGs and entrepreneurs connect with institutional, financial, and technical support groups to further their empowerment.

The project empowers the fisheries community through Participatory Learning and Action (PLA). By analyzing the specific needs of each location, the project forms Self-Help Groups (SHGs) focused on fishery-based micro-enterprises that align with the predominant livelihood of fisherfolk. These groups receive ECB training to engage in sustainable, economically viable activities. The project assesses each phase's technical and financial viability through participatory evaluations and video documentation. Success stories are showcased to inspire collective action. The project addresses the challenges faced by SC fisherfolk by gathering data via structured interviews and ICT-based tools. It connects SHGs and entrepreneurs with technical, institutional, and financial resources, fostering empowerment and sustainable livelihoods. The STI-Hub for the fisheries sector focuses on the Central Zone of Kerala, starting with Ernakulam district's coastal areas, including Vypin, Narakkal, Elamkunnappuzha, and others. The project aims to directly benefit 500 SC
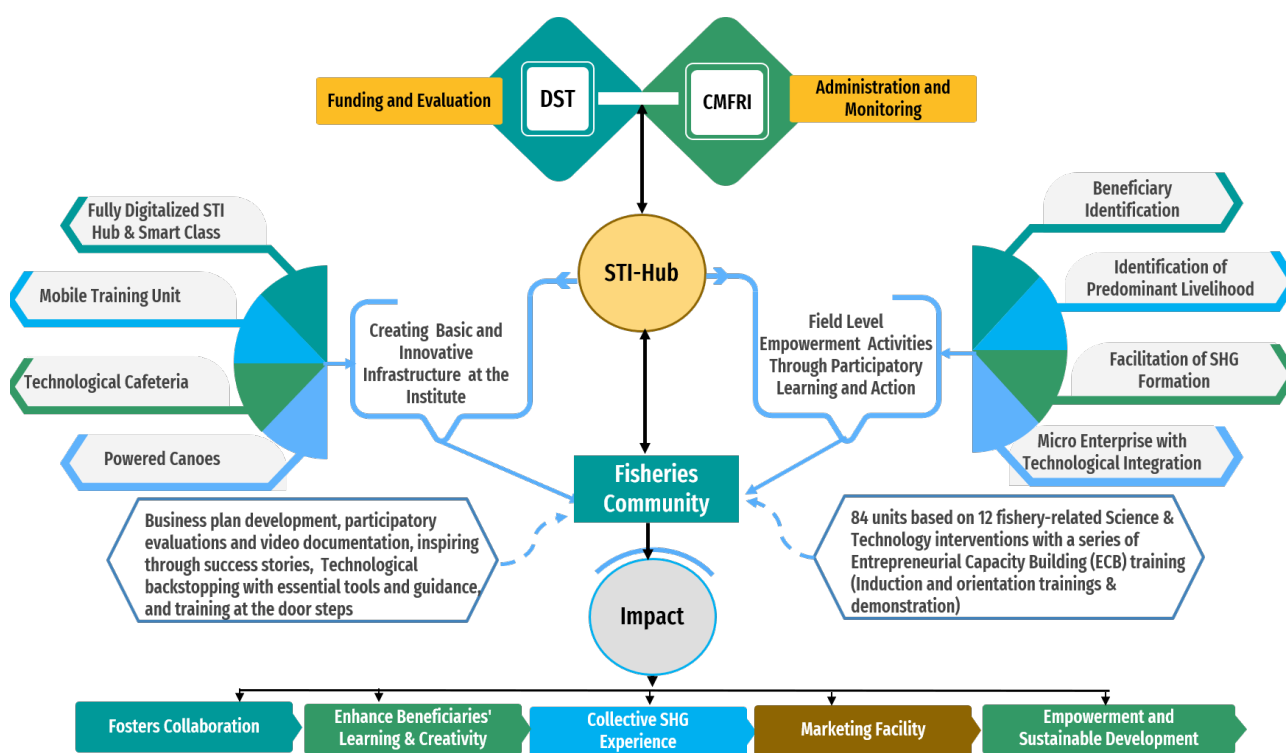
Conceptual Framework of STI-Hub, Ernakulam

fishermen and indirectly support 2,500 others, with plans for future expansion to additional coastal districts.

The project has established innovative infrastructure at the institute, including a fully digitalized STI-Hub, a smart classroom, a mobile training unit, a technological cafeteria, and powered canoes, all designed to enhance beneficiaries' learning, creativity, and empowerment. The STI-Hub provides essential tools and guidance, while the mobile training unit delivers training directly to the beneficiaries. The technology cafeteria fosters collaboration between the fishing community and the research organization. These advancements drive sustainable development, enabling beneficiaries to realize their full potential and make a positive impact on their communities.

The STI-Hub project is focused on practical, location-specific, and environmentally friendly fishery technologies to improve the livelihoods of SC fisherfolk. The ECB training in technologies such as cage culture, pearlspot seed production, fish vending, and more included orientation, awareness programs, and demonstrations. The documented success stories and interventions, practical training using a Mobile Training Unit equipped with ICT facilities, lab equipment, and canoes with safety gadgets and digital recording devices has helped it to address challenges like unemployment, debt, and loss of traditional skills by helping SHGs and individual entrepreneurs connect with government and financial institutions for credit and entitlements through HRD programs. The project leverages collective SHG experience for sustainable business management. Collaborating with ICAR-CMFRI's ATIC and KVK, the Hub has also provided a sales outlet for SHG products, ensuring sustainability. The fully digitalized Hub has worked with NGOs, academic institutions, and SHGs to promote sustainable practices.

A total of 57 microenterprises (23 in 2022-23) and 34 interventions in the second year (2023-24) at Ernakulam, Thrissur, Kottayam, Alappuzha, Kannur, Kozhikkode, Pathanamthitta and Kollam districts of Kerala based on 12 fishery-related Science & Technology interventions, including cage culture, pearlspot seed production, fish vending, fish culture, ornamental fish culture, integrated fish farming, fish fertilizer production, value-added fish products, mussel culture, oyster culture, clam processing units and dry fish units were done. In the current year 200 additional beneficiaries (98 Male, 98 Female and 4 transgender stakeholders) were included into the project. Two women stakeholder beneficiaries of the project, in which, one was a trans-female, engaged in ornamental fish culture and another engaged in fish fertiliser production were honoured respectively during the International Women's Day celebrations of the institute in 2023 and 2024.

Acknowledgement