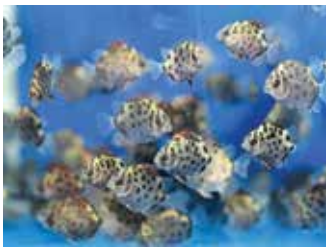
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Editor,
Fish Tech Digest



From the desk of Dean…

Dear esteemed Authors and Readers

It gives us immense pleasure to present this special issue of Fish Tech Digest, dedicated to the fisheries wealth, aquatic ecosystems, and coastal communities of Kanniyakumari District. Located at the southernmost tip of India, Kanniyakumari is blessed with diverse marine and inland aquatic resources that support livelihoods, biodiversity, and economic development.

This issue features insightful articles on the Ramsar wetlands of Vembannur and Suchindram–Theroor, the rich seaweed resources of Cape Comorin, and the vital role of Thengaipattinam Fishing Harbour in the marine fish export chain and coastal economy. Together, these contributions highlight the district's unique ecological and fisheries significance.

We are particularly pleased to showcase articles contributed by the faculty and students of St. Devasahayam Institute of Fisheries Science and Technology (DIFST), reflecting the institution's commitment to fisheries education, research, innovation, and sustainable development.

As the Blue Economy gains momentum, Kanniyakumari stands as a model where natural resources, traditional knowledge, scientific research, and community participation converge to create opportunities for sustainable growth. We hope this issue inspires readers to appreciate, conserve, and responsibly utilize these valuable aquatic resources for future generations.

I extend my heartiest congratulations to all the authors for their invaluable contributions. Your insights significantly enrich our collective academic knowledge and will undoubtedly inspire future research pathways. I trust that this issue of Fish Tech Digest will serve as a highly inspiring and practical resource for you all, as we continue to uphold our institutional benchmark for excellence in fisheries education, research, and community extension.

Best regards,
Prof. S. Felix
Chief Editor
Fish Tech Digest

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Role of Thengapattinam Fishing Harbour in Marine Fish Export Supply Chains and Coastal Livelihoods in Kanyakumari District, Tamil Nadu

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Abstract

Thengapattinam Fishing Harbour in Kanyakumari District, Tamil Nadu, plays a significant role in regional marine fisheries production and seafood export supply chains despite not functioning as a direct export harbour. The harbour serves as a major landing and aggregation centre for commercially valuable finfish, cephalopods, and crustaceans such as tuna, seer fish, sharks, and cuttlefish. Fish landed here are auctioned locally and transported to nearby processing hubs including Muttom, Kanyakumari, and Kadiyapattinam for grading, freezing, packaging, and export. Thus, Thengapattinam contributes indirectly but substantially to the regional seafood export economy. The harbour sustains coastal livelihoods through a structured occupational system involving boat owners, traders, and women fish vendors. Its infrastructure, harbour management, and market linkages generate steady employment and revenue. Strengthening cold chain, processing, and export facilities could transform Thengapattinam into a direct export hub, enhancing profitability and reducing dependence on neighbouring centres while promoting sustainable coastal economic development in Kanyakumari District.

Keywords: Marine fish export; Thengapattinam Fishing Harbour; seafood supply chain; coastal livelihoods; Kanyakumari fisheries.

1. Introduction

Kanyakumari District possesses rich marine resources and a vibrant fishing community that contributes significantly to Tamil Nadu's marine fisheries and seafood exports. The district has a coastline of about 71.5 km and supports 42 fishing villages with major harbours at Chinnamuttom, Colachel, and Thengapattinam, along with several landing centres. Marine catches include sardines, mackerels, tuna, seer fish, cephalopods, and other high-value export species. The fisher population and cooperative network indicate strong livelihood dependence on fisheries and export activities.

Tamil Nadu produced about 5.65 lakh tonnes of marine fish in 2023, of which Kanyakumari contributed roughly 1.19 lakh tonnes (≈21%), ranking first in the state. This high production supports processing industries and export supply chains. Among the district harbours, Thengapattinam has emerged as an important landing aggregation centre handling mechanized and motorized vessels. Although it lacks direct export facilities, the harbour functions as a key node linking marine

resources, fishing communities, and regional seafood markets through transport to nearby processing hubs.

1. Thengapattinam Fishing Harbour

Thengapattinam Fishing Harbour was initiated in 2008 and became operational in 2019 as a major fisheries infrastructure facility in southern Tamil Nadu. The harbour includes breakwaters, quay space, basin area, auction halls, workshops, storage sheds, lighting, water supply, and internal roads that support safe vessel operations and efficient fish landing and marketing. It accommodates a large fleet of mechanized and motorized vessels and country crafts, establishing it as an important landing centre in the region.

The harbour is administratively managed through a regulated financial system based on user charges such as berthing and service fees, which are reinvested for maintenance and operations. Its stable revenue and infrastructure enable continuous landing, auctioning, and distribution of fish to regional markets and export processors. Overall, Thengapattinam functions as a comprehensive fisheries hub supporting landing, marketing, vessel services, employment, and supply chain connectivity in Kanyakumari District



2. Major Fishery Resources Landed

A wide range of commercially important pelagic, demersal, and coastal fishes along with cephalopods are landed at Thengapattinam. Major pelagic species include seer fish (*Scomberomorus commerson*), yellowfin tuna (*Thunnus albacares*), skipjack tuna (*Katsuwonus pelamis)*, cobia (*Rachycentron canadum*), barracudas (*Sphyraena spp*.), and sharks (Carcharhinus spp.). Reef and demersal fishes such as snappers (*Lutjanus spp*.), groupers (*Epinephelus, Cephalopholis),* emperors *(Lethrinus nebulosus*), and sole fish are also common. Coastal and estuarine species include milkfish (*Chanos chanos*) and ladyfish (*Elops saurus*). Cephalopods such as squid (*Loligo duvaucelii),* cuttlefish (Sepia officinalis), and cuttlefish (*Sepia officinalis)*form valuable export resources.

These resources support both local consumption and regional seafood processing industries, forming the biological base of the harbour's economic importance.



seer fish (Scomberomorus commerson)



skipjack tuna (Katsuwonus pelamis)



yellowfin tuna (Thunnus albacares)



cobia (Rachycentron canadum)



barracudas (Sphyraena spp)



sharks (Carcharhinus spp.)



snappers (Lutjanus spp.)



groupers (Epinephelus spp.)



snappers (Lutjanus spp.)



milkfish (Chanos chanos)



ladyfish (Elops saurus)



squid (Loligo duvaucelii)



cuttlefish (Sepia officinalis)



cuttlefish (Sepia officinalis)

Fig. 1: Major Fishes Occurrence in Thengaipattinam Fishing Harbour

2. Export Linkages and Marketing Chain

2.1 Indirect Export System

Thengapattinam does not operate as a direct export harbour; instead, fish are transported after auction to nearby centres such as Muttom, Kanyakumari, and Kadiyapattinam where cold storage, processing, and export facilities exist. High-value species including tuna, seer fish, sharks, and cephalopods are graded, frozen, packaged, and exported from these hubs. Annual export-oriented landings from Thengapattinam are estimated at 30,000–40,000 tonnes with substantial economic value, demonstrating its indirect but critical role in the regional seafood export economy.

2.2 Role in Regional Supply Chain

The harbour functions as a primary aggregation centre linking capture fisheries to export processors through the chain: capture → landing → auction → transport → processing → export (Fig.2). Seasonal patterns influence supply, with peak tuna and seer fish landings from October to February. Traders and export agents procure fish at auctions and transport them to processing plants, ensuring continuous flow to domestic and international markets.



Fig. 2: Thengapattinam Supply chain clips

2.3 Livelihood and Occupational Structure

Thengapattinam supports a large coastal population through a structured occupational system:

- Boat owners invest in vessels, gear, and operations.
- Fish traders manage auctioning and marketing.
- Women vendors handle retail sales and small-scale processing.

The harbour fleet includes mechanized boats, motorized FRP boats, and traditional crafts using gillnets, longlines, purse seines, and trawls. This structure sustains employment in fishing, marketing, transport, and allied services and demonstrates a gender-inclusive fisheries economy.

2.4 Post-Harvest Handling and Cold Chain

Fish are iced onboard and handled in auction sheds, but limited cold chain infrastructure restricts storage and quality maintenance. Consequently, fish must be transported quickly to neighbouring processing hubs. Improving ice plants, chilling, and insulated transport would enhance product quality and export competitiveness.

2.5 Socio-Economic Importance

The harbour generates employment in fishing, auctioning, vending, transport, and repair services and enables fishermen to access better prices through export linkages. Even without direct export operations, it remains a vital economic centre sustaining coastal livelihoods and regional seafood trade.

2.6 Scope for Export Development

Thengapattinam has strong potential to develop into a direct export-oriented fishing harbour. At

present, a considerable share of the fish landed here is transported to neighbouring centres for processing, storage, and export activities. This dependence on external harbours increases handling costs and reduces the profit margins of local fishers and traders. Developing export facilities within Thengapattinam would therefore help retain value locally and improve income opportunities for the fishing community.

The establishment of basic processing infrastructure such as cleaning, grading, freezing, and packaging units would support export readiness and promote value addition. Alongside this, the creation of cold storage facilities and ice plants is essential to maintain fish quality and reduce post-harvest losses. A reliable cold chain would enable better preservation, allow temporary storage during market fluctuations, and ensure compliance with export quality standards.

Institutional support from fisheries departments and development schemes can play a key role in upgrading harbour infrastructure, promoting hygienic handling practices, and building capacity among stakeholders. With targeted investments and policy support, Thengapattinam can gradually emerge as a self-sustaining export centre, reducing reliance on neighbouring harbours and enhancing local profitability.

2.7 Sustainability Considerations

Key challenges include overfishing, bycatch of juvenile sharks and rays, and climate-related stock fluctuations. Adoption of responsible fishing practices, seasonal regulations, and community-based management is necessary to ensure long-term resource sustainability and economic stability.

Conclusion

Thengapattinam Fishing Harbour is a strategically important fisheries infrastructure supporting marine fish production, marketing, and export linkages in Kanyakumari District. Although it currently operates as an indirect export hub, its contribution to the regional seafood export economy is substantial due to high landings and strong connections with processing centres. The harbour sustains coastal livelihoods through inclusive participation of fishermen, traders, and women vendors and provides stable employment and income opportunities.With investments in cold chain, hygienic handling, processing, and export logistics, Thengapattinam has strong potential to evolve into a direct seafood export centre. Such development would enhance income, reduce transport dependence, and strengthen the marine fisheries economy of southern Tamil Nadu. Therefore, the harbour represents not only a landing centre but also a key driver of socio-economic growth and sustainable coastal resource utilization in Kanyakumari District.

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