

Economic efficiency of gill net fishing in Munambam, Ernakulam

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The most important fisheries management reforms in Kerala is the monsoon trawl ban when fishing using mechanized vessels like trawlers is banned as the monsoon season is considered to be the breeding and pre-recruitment period of most of the commercially important species. This period however witnesses extensive fishing activity by the motorised sector in Kerala and Munambam Fisheries Harbour, one among the nine major fishing harbours in Kerala was monitored for assessing the economic efficiency of motorised crafts. There are 145 motorised boats and 390 mechanised boats actively operating in the harbour. During monsoon trawl ban, motorized and non-motorized boats are operated, include those coming from other locations of the state. They are commonly using gillnets for fishing. The study conducted during June-July 2018 in the Munambam Fisheries Harbour used Survey method for collecting the information of fishing operations across gillnetters operating in the harbour. The primary data on the cost and revenue of 30 gillnetters were collected and analysis was done to assess the economic efficiency.

Fishing operations and Fishing efficiency: The crafts were registered across other parts of the states/ neighboring states. The fishing operations normally starts in the early mornings around 4 am. The average crew size is five members and will operate for multiday (2-3 days) trips. On an average, 40-50 fiber crafts bring fish landings in the harbour. The overall length of the fiber craft is 32-36 feet with engine capacity ranging from 9.9-26 HP. The gillnet made of nylon (thread size 2 mm) with a vertical length 16 m and horizontal length 1-2 km with mesh size of 2-3 inches costs around ₹7 lakhs.

The fishing efficiency was determined using revenue estimates and operating ratio. The average fishing expenditure per trip was found to be ₹3.76 lakh per trip contributed by crew share (₹3.02 lakhs), auction charges (₹0.40 lakhs), fuel (₹0.26 lakhs) others-Ice (₹0.02 lakhs) and provisions (₹0.06 lakhs). The average quantum of diesel used was 400-450 litres and 30-40 ice blocks. The wise expenditure incurred indicated that 80% of operating costs was towards crew share (wages and 'bata' or allowance) followed by auction charges

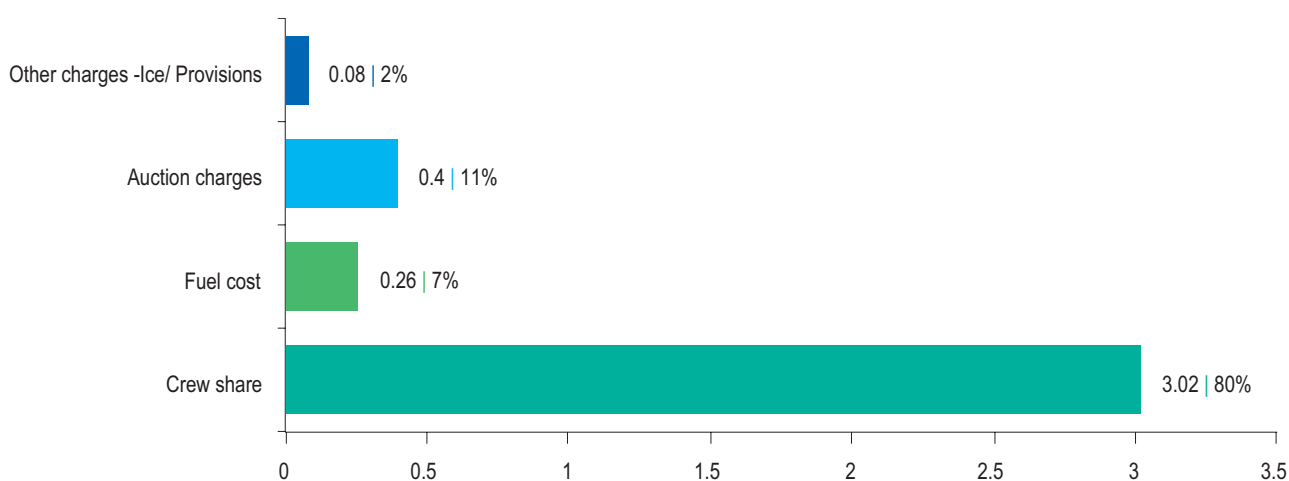


Fig. 1. Operating expenditure (in ₹ lakhs) in gillnet fishing

(11%). The subsidy for kerosene wasn't available for the fisher folks, so they used to buy it from the open market at higher prices.(Fig. 1).

The average landings per trip were estimated at 4 tonnes. The contribution of the different species included tuna (16%), moon fish (44%), sharks (25%) in addition to 10-12 other species (14%). The average fish prices and revenue realised for the gillnetters per trip is indicated in Table 1

Table 1: Average fish landings, price and revenue realised

Species	Landings (tonnes)	Revenue (₹ in lakh)	Average price realised (₹)
Tuna	1.75	2.81	160
Moonfish	1.01	2.02	200
Sharks	0.66	1.32	200
Others	0.42	0.64	150
Total	3.85	6.79	177.5

Profitability indicators: The capital productivity of the operations was found to be 0.55, average labour productivity 770 kg, input ratios as 0.11 and the gross value added at ₹3.77 lakhs per trip (Table 2).

During the monsoon, non-availability of popular fish varieties is common and the prices are high in the market. During monsoon trawl ban period in Kerala, the vendors have to mainly depend upon the catch by the fishermen of motorised gillnets crafts. Due to the freshness and superior quality of the catch landed in Munambam Fishing harbour fisherfolks and vendors will increase fish price, and the customer who needs the fresh fish tends to purchase without bargaining.

Table 2. Profitability indicators

Components	Amount (₹ in lakh)
Crew wages	3.010
Crew bata value	0.009
labour costs	3.019
Fuel cost	0.260
Auction charges	0.400
Other charges -Ice/ Provisions	0.080
input costs	0.740
Total operating cost	3.760
Catch(tonnes)	3.850
Gross revenue	6.790
Crew size (Number)	5
Net operating income =(Gross revenue-total operating cost)	3.03
Capital productivity (Operating ratio)=(Total operating cost/Gross revenue)	0.55
Labour productivity(kg) =(Catch /average crew size)	770
Input-output ratio =(Total input cost/ Gross revenue)	0.11
Gross value added	3.77

The implementation of trawl ban has its impact on the income of the labourers and the unemployment they face during the period force some of these fishermen to do gillnet operations. The catch from these motorised boats are largely composed of high value fishes and is profitable for the fisherfolks and fish vendors. The study revealed that economic efficiency measured in terms of labour, wages, input-output ratio and gross value added indicated the viability of motorised gillnetters operated during the monsoon period.