

Emerging clam fishery in Muthalapozi Estuary

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Muthalapozi Estuary is located in northern part of Thiruvananthapuram District, Kerala. Perunguzhi and Azhoor are commercial bivalve landing centers located along the Muthalapozi Estuary, where large-scale clam exploitation has emerged during the recent past (Fig. 1). This new development is due to the increased domestic demand for clams in

Karnataka, Goa and Maharashtra consequent to the decreased availability of clams in their traditional local clam fishing grounds.

Fishery commenced from 2016 after some fish merchants from Kollam and Kozhikode visited the area and found out from the local fishermen that good clam beds are available in the estuary. Today, more than 350 fishermen including women are actively involved in the clam fishery that exploit the rich clam beds by hand picking and hand dredging. Agents from Kollam and Kozhikode Districts are procuring the harvested clams from Thiruvananthapuram and Kollam Districts and transporting them to Karnataka where the clams are conditioned and repacked for marketing in Goa and Maharashtra.

Active fishing is being carried out in the backwater area from Azhoor to Perunguzhi, a stretch of about 1.5 km. Physico-chemical parameters of the estuarine water indicated temperature of 30° C, salinity 23 -31 (psu) and pH 8.1. Maximum



Fig. 1. Muthalapozi Estuary showing the bivalve landing centres

depth in the area of exploitation is about 6-8 m and the bottom is sandy clay.

Fishery started during the month of November 2016. Fishing is done by hand picking in shallow areas up to a depth of 1.2 m. 40 fishermen in Azhoor and 350 fishermen in Perunguzhi are engaged in hand picking. Skilled hand pickers can collect up to 50-70 kg of clams per day. Men start fishing from 6 am and continue till 4 pm whereas women are engaged in hand picking from 8 am to 3 pm. The clam catch by women is generally less and ranging from 18 to 25 kg per day. Harvested clams are collected in aluminum vessels. Once the vessel is filled, they are transferred to gunny bags, which are kept in wet condition. Occasionally, the entire fisherman family is involved in the fishery.

From deeper waters, clams are harvested using hand dredges operated from wooden canoes 18-20 feet OAL. Three fishermen go in a canoe, rowed by one while the other two are engaged in dredging. Average catch from a canoe is about 150 to 200 kg per day operated from 6 am to 4 pm. In this area there are only 5 canoe units. Clam harvest is higher during the low tide period. Fishing is done for six days in a week excluding Sunday and 25 fishing days in a month is common.

Species which contributes to the fishery are short neck clam *Paphia malabarica* (97%), baby clam, *Marcia opima* (2%), backwater clam *Meretrix casta* (1%) and rudder ark *Anadara indica* in stray



Clams packed in gunny bags ready for transportation

numbers. On an average 45-50 gunny bags of clams are harvested per day from the 2 landing centres. Landing centre price for one gunny bag of large size clams (34-43mm) of 70 kg weight is ₹ 3000. Price of the small and medium size clam (22-35mm) is ₹ 1500 per sack. In some cases merchants segregate clams according to colour/species and price varies from ₹ 500 to ₹ 3000.

Collected clams are washed, packed in gunny bags and transported under moist conditions by road. Mulki Estuary near Mangaluru and Kundapur Estuary in Udupi (about 655 to 750 km away) are the two destinations in Karnataka, where the clams are conditioned before transporting to Goa and Maharashtra. After 15-18 hours of transportation, the bags are loaded into canoes for conditioning in the saline, estuarine waters. The bags containing clams are conditioned in the deeper areas of the

Table 2. Details of clams landed and marketed

Month	Species	Length range (mm)	Mean length (mm)	Weight range (g)	Mean weight (g)	Price per gunny bag(50-70 kg)
December, 2016	<i>P.malabarica</i>	28-50	39.91	4.4-21.4	10.35	3000
	<i>M. opima</i>	37-46	41.6	8.9-20.1	14.06	500
	<i>M. casta</i>	23-34	29.3	2.5-5.3	3.9	1500
January, 2017	<i>P. malabarica</i>	24-49	34.58	1.2-23.2	6.96	3000
	<i>M. opima</i>	30-40	35.25	8.6-19.3	12.7	500
	<i>M. casta</i>	23-34	28.5	2.7-5.6	4.15	1500
	<i>A. indica</i>	22-27	24.5	3.0-3.29	3.14	-
February, 2017	<i>P. malabarica</i>	25-45	27.2	1.2-23.2	6.35	1500
	<i>M. opima</i>	30-40	34.25	8.3-17.9	11.25	500
	<i>M. casta</i>	21-30	25.1	2.5-5.0	3.75	1500

estuary for 2 -3 days and then repacked in 5 or 10 kg plastic bags. This fetches ₹ 900-1000/ per 10 kg bag, on retail. Loss during transportation is about 10-20%.

On an average **around** 50 sacks of clams (50-70 kg clams/sack) were exploited daily and the estimated catch per day from Azhoor to Perunguzhi stretch was 3000-3500 kg. The estimated total catch of clam exploited from November 2016 to January 2017 was 225 t. Total revenue from the fishery was an estimated ₹ 150000 per day and ₹ 3750000 per month.

The price changed within two months of fishing due to the decrease in the average size of the short neck clams landed. During the month of February,

clams of size 25-29 mm dominated the fishery and this led to decline in price and the fishery stopped. At present the size of the clam of *Paphia malabarica* collected is more than recommended Minimum Legal Size (20 mm). Since large scale exploitation started for the first time in these two places, to sustain the fishery, closed season (December to February) as practiced in Ashtamudi Lake and awareness about Minimum Legal Size (MLS) of various clam species has to be created among the fisherfolk. Fishing of clams of 25-29 mm size is not economically feasible and may affect the fishery adversely in the coming years unless certain management measures are implemented by creating awareness among the fisherfolks.