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OCTOPUS LANDINGS AT COCHIN FISHERIES HARBOUR

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Octopuses, popularly called "devil fish" are marine benthic animals found to live from the sea coast down to 1000 m depth. They are locally known as "kinavalli" and "neerali". They come under the general group cephalopods and are solitary and aggressive in nature. Eventhough thirtyeight species have been reported from the Indian seas a directed fishery for octopus is lacking. At present octopods support a subsistence fishery in the islands of Nicobar and Lakshadweep. In recent years the export possibility of octopods was tried which paved way for the emergence of octopus fishery in some parts of Kerala. The Cochin Fisheries Harbour witnessed a slow and steady growth of octopus fishery during 1991 to mid 1992, and also its decline by the year end. The magnitude of the fishery, species composition and marketing are given below.

Fishing gear

The traditional practice employed for fishing octopuses in different parts of the world involves simple methods like trap setting, harpooning or poisoning the coral rock pools which they inhabit during low tide. In addition to this octopuses are landed by shrimp trawlers as a bycatch. At Cochin Fisheries Harbour octopods are landed by shrimp trawlers which operate in the waters off Cochin, Alleppey and at times Chavakkad and Beypore depending on the availability of the resource. Recently the trawlers have resorted to two-day fishing to reduce fuel expenditure.

Annual landings

In 1991 an estimated total of 154 t of octopus was landed at Cochin Fisheries Harbour,

contributing to 4% of the cephalopod landings of 3836 t. In the following year the cephalopod fishery in general as well as octopus fishery witnessed an increase in the landing. Of the 6974 t of cephalopods landed, 499 t was composed of octopods contributing to 7% of the catch. However, the octopus fishery lasted only till October, 1992, after which the octopus catch was not brought to the shore due to lack of demand in the market. The CPUE for octopus showed wide fluctuation; it was as high as 21 kg in February 1992 and very negligible during certain months especially after July 1992. Details pertaining to the fishery are given in Table 1.

Monthly variation

Octopods were landed in all the months during 1991 with peak landings in September. However, in 1992 octopods formed a part of the cephalopod fishery only till October. The highest catch recorded was in February 1992 when 204 t, of Octopods contributing to 21% of the cephalopod catch were landed at Cochin Fisheries Harbour.

Species composition

Octopus membranaceus, *O. dollfusi*, *O. lobensis* and *Cistopus indicus* were the main species which contributed to the octopus fishery (Table 2, Fig. 1). *Octopus membranaceus* was the dominant species which contributed to 82% of the total Octopus landed. This species has a characteristic dark ringed ocellus on the web at the base of second arms. It is known as 'Ji dako' in Japan and supports local fisheries throughout Japan. Octopuses of size 20 to 90 mm mantle length (95 to 440 mm total length) and weighing



Fig. 1. *Octopus membranaceus*.

8 to 190 g contributed to the fishery. Mature specimens were recorded in April, June and August. *Cistopus indicus* and *Octopus dollfusi* contributing 6% each to the octopus fishery were also landed. *Octopus lobensis* of mantle length 35 to 136 mm (105 to 540 mm total length) and weighing 5 to 400 g were noted in the fishery. An unidentified species of octopus with extremely

TABLE 1. Fishery details of octopus landed at Cochin Fisheries Harbour during 1991-92

	Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Total octopus landing (t)	1991	1	3	10	9	20	30	10	5	64	1	neg	1	154
	1992	58	204	61	65	62	40	2.4	0.3	—	6.5	—	—	499
Total cephalopod landing (t)	1991	290	41	171	272	187	684	122	182	1272	423	97	95	3836
	1992	478	1081	760	538	365	444	1000	720	656	1087	157	588	6974
Percentage contribution by octopus to the cephalopod landings	1991	1	6	6	4	11	4	8	3	5	neg	neg	1	4
	1992	12	19	8	12	17	9	2	neg	—	neg	—	—	7
Total marine landings by trawlers (t)	1991	1935	1151	2197	2056	2686	6597	3153	3876	9563	1993	1465	1905	38577
	1992	2705	3600	300.2	2380	4581	4094	2617	6424	4151	3935	1050	1678	40197
No. of units operated	1991	10019	8640	11145	10151	11588	13207	6278	5336	10833	4527	8436	8751	108911
	1992	9758	9848	9404	8700	12127	8458	1542	4282	5915	9717	3972	6847	90570
CPUE for octopus (kg)	1991	neg	0.3	1	1	1.8	2.3	1.6	1	5.9	0.3	neg	0.1	1.4
	1992	6	21	6.4	7.4	5.1	4.7	1.5	neg	—	0.6	—	—	5.5

TABLE 2. Species composition (by weight, kg) of octopus landed at Cochin Fisheries Harbour during 1991-'92

	Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
<i>Octopus membranaceus</i>	1991	780	1361	4622	1810	11627	22733	8423	3849	50388	733	50	410	106786
	1992	49000	190000	45000	52000	50000	37000	2000	300	—	5200	—	—	430500
<i>Cistopus indicus</i>	1991	128	190	1382	310	1661	1496	470	220	2569	117	10	96	8649
	1992	2000	5000	8000	7000	6000	1000	—	—	—	600	—	—	29600
<i>Octopus dollfus</i>	1991	320	358	1620	5430	3737	3589	924	592	6781	225	15	125	23716
	1992	2500	1000	2000	3000	3000	1000	200	—	—	200	—	—	12900
<i>Octopus lobensis</i>	1991	110	278	2734	1500	3738	2094	455	274	4497	150	10	85	15925
	1992	4500	8000	6000	3000	3000	1000	200	—	—	500	—	—	26200

long fourth arm, almost 85 to 87% of the total length was observed in the landings.

Marketing

The entire catch of octopus was bought by exporters @ Rs. 3/- to Rs. 10/- per kg. The catch was salted in the harbour itself before being taken to the processing plant. Octopods were not sold in the local market due to lack of demand.

Export of octopus

Octopus export was initiated in 1988 when about 72 kg of frozen octopus was exported to Japan and 19,480 kg of whole cleaned octopus worth Rs. 1.6 lakhs was exported to Greece. In the subsequent years only frozen octopus was exported. In 1989 a total of 43,520 kg was exported to Japan, Cyprus and Belgium. The export of frozen octopus showed an eight fold increase when 329 t of the product worth Rs. 48 lakh was exported from India. Greece (40%), Spain (31%), Italy (7%) and Canary Island (6%), France (4%), Federal Republic of Germany (4%), Sri Lanka (3.5%), Cyprus (2.5%), Belgium (1%) and Portugal (1%) were the importers of Octopus in 1990. Japan was the main importer of frozen octopus for the years 1988 and 1989. However, in 1990 octopus was not exported to Japan (Table 3).

The price per kilogram of octopus exported was Rs. 18.6 in 1989 which came down to Rs. 14.7 in 1990. However, the total value earned by export of octopus was six times higher in 1990 than that of 1989 due to eight fold increase in the quantity exported.

TABLE 3. Export details of octopus from India

Country	Q : Quantity in Kilogram			Whole cleaned octopus
	V : Value in Rupees			
	Frozen octopus			
	1988	1989	1990	
Canary Islands	—	—	19620	—
Sri Lanka	—	—	9060	—
Japan	72	19920	—	—
Cyprus	—	4700	6140	—
Belgium	—	14200	2680	—
France	—	—	13820	—
Fed. Rep. of Germany	—	—	14000	—
Italy	—	—	24342	—
Portugal	—	—	3000	—
Greece	—	—	133329	19480
Spain	—	—	103396	—
Total Q :	72	43520	329347	19480
V :	50	8,09,577	48,68,694	1,62,917

Remarks

The sudden growth of octopus fishery brings to light that octopus resource is available in the fishing grounds off Kerala coast. However, the lack of good local market as well as export demand makes this resource underutilized and those caught in the trawl are thrown overboard without being brought to the landing centre. This fact makes it highly essential that the export possibilities of this resource is explored and it is utilized instead of being wasted.