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Maharashtra is one of the major coastal states in India contributing to 11.55% (4630 crores) worth of marine fish landings at the landing centre. The marine landings in Maharashtra during 2015 was estimated at 2.65 lakh tonnes registering a decrease of 23% compared to 2014. Greater Mumbai district ranked first with 50.4% followed by Raigad (17%),

Ratnagiri (12.4%), Thane (10.6%) and Sindhudurg (9.6%). Sindhudurg district of Maharashtra accounts for 25,440 tonnes of fish production from marine sector (Table 1).

#### **Market structure analysis**

Sindhudurg district has three major fish markets at Devgad, ChambarBhati and Jamsande that offers

**Table 1. Marine fisheries profile of Maharashtra & Sindhudurg district**

	Maharashtra	Sindhudurg district
Length of the coastline (km)	720	121
Number of landing centres	152	34
Number of fishing villages	456	83
Number of fishermen families	81,492	7277
Total fisher folk population	386259	33178
Number of fish markets	280	42
Number of wholesale markets	30	4
Number of retail markets	50	8
Number of terminal markets	200	30
Number of export units	39	2
Total fishing crafts	17,362	1940
Mechanised fishing crafts	13,016 (75%)	929 (48%)
Motorised fishing crafts	1563 (9%)	606 (31%)
Non mechanised fishing crafts	2783 (16%)	405 (21%)
Number of boat building yards	5	0
Marine Fish landings (2015-16)	2.65 lakh tonnes (t)	25440 t

significant marketing functionaries and trade (Table 2). Due to the nearness of roads and railways, market arrivals and disposals are done within a very short span of time and all are well structured markets.

Around 20-25 marine and inland species are marketed in these markets with the most common fish species being sardine, mackerel, seer fish, catfish, croakers, pomfrets, anchovies, shrimps etc. Price discrimination exists for high valued fish species (Table 3).

**Table 2. Market structure analysis of fish markets in Sindhudurg District**

Market Dimension	Devgad	ChambarBhati	Jamsande
<b>A. Location</b>			
Year of establishment	1988	2013 (Old market but reconstructed in 2013)	2000
Type of Market	Wholesale & Retail	Wholesale & Retail	Retail
Area of the market (sq feet)	1500	2500	80
Lat/Long Position	16° 37' 54"N 73° 38' 86"E	16° 37' 54"N 73° 38' 86"E	16° 38' 78"N 73° 41' 44"E
Market control	Co-operative societies	Co-operative societies	Private
<b>B. Market access</b>			
Nearest landing Centre	Chambar Bhati (700m)	Devgad (700 m)	Chambar Bhati (7 km)
Nearest railway station (km)	Nandgaon (50)	Nandgaon (49)	Nandgaon (45)
Nearest bus station	Devgad (500 m)	Devgad (1 km)	Devgad (6 km)
Nearest airport (Km)	Goa (Panaji) (150)	Goa (Panaji) (150)	Goa (Panaji) (145)
Nearest seaport	Goa	Goa	Goa
<b>C. Market Timing</b>			
	0800-1200 hrs	0400-0800 hrs	0400-800 hrs
<b>D. Market conduct</b>			
Wholesalers	10-15	10-15	Nil
Retailers	60-90	100-120	40-60
Middlemen	10-20	10-20	2-3
Commission agents	8-12	8-12	2-3
1) Brokers	8-12	8-12	2-3
Entry fee for operation in market	₹ 25/day collected by co-operative societies from retailers	No charge	₹ 20/day collected by market owners

Table 3. Major Species traded in the selected fish markets and its prices

Species	Devgad		ChambarBhati		Jamsande	
	Qty (kg)	Average Price (₹)	Qty (kg)	Average Price (₹)	Qty (kg)	Average Price (₹)
Cat fishes	250	100	200	120	30	135
Croakers	500	120	600	130	25	130
Mackerel	1000	100	600	70	35	115
Pomfrets	500	300	300	325	10	400
Sardine	750	60	1200	40	40	65
Seer fish	500	450	650	450	15	500
Shrimps	1000	250	600	200	30	300
Anchovy ( <i>Thryssa</i> )	500	40	1200	50	60	60
Puffer fish	150	15	200	20	-	-
Tuna	200	85	200	90	20	120
Ribbon fish ( Small)	200	55	250	65	20	100
Ribbon fish ( Big)	200	120	250	140	15	180
Squid	250	90	200	110	20	175
Cuttle fish	250	200	300	160	20	225
Mullet	100	300	300	320	25	350
Lizard fish	250	220	300	210	30	260
Thread fin breams	150	80	200	100	40	115
White fish	150	100	300	90	30	120
Barracudas	150	80	200	90	20	130

### Market arrivals and disposals

The market study indicates that in Devgad market fish arrivals are mostly from Chambar Bhati and Jamsande. The Devgad market often sends fishes to different local markets Taramumbari, Vengurla and Malvan. In Chambar Bhati market major fish arrivals are from Devgad, Jamsande and Ratnagiri, and the market trades marine fishes to Ratnagiri and the neighbouring states of Goa and Karnataka. Mostly the fish arrivals of retail market in Jamsande are from Devgad and ChambarBhati.

### Constraint analysis

The following constraints as perceived by traders were ranked using Garette ranking technique (Table 4). It indicated that lack of infrastructure and allied amenities in markets including waste management facilities, parking areas, freezers, better drinking water etc. besides inadequate supply of fish across the fish markets were found to be the major constraints in the fish markets in Sindhudurg district. Lack of access to facilities was found to be the second constraint with the traders.

Table 4. Constraints perceived by the market traders

Species	Devgad		ChambarBhati		Jamsande	
	Score	Rank	Score	Rank	Score	Rank
High marketing cost	III	72.22	IV	61.11	IV	61.11
Lack of infrastructure and amenities	I	94.44	I	94.44	I	94.44
Price discrimination	IX	5.56	V	50.00	VIII	16.67
High transportation cost	VI	38.89	III	72.22	VI	38.89
Lack of access to facilities	II	83.33	II	83.33	II	83.33
Lesser number of buyers	IV	61.11	VI	38.89	III	72.22
Cut-throat competition among traders	VIII	16.67	IX	5.56	IX	5.56
Low product diversity	VII	27.78	VIII	16.67	VII	27.78
Inadequate supply of fish	V	50.00	VII	27.78	V	50.00