Market structure analysis of fish markets in North coastal districts of Andhra Pradesh

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Andhra Pradesh is one of the predominant fish producing states in the country which stood first in total fish and shrimp production in India for the year 2015-16. The fisheries sector contributes 6.01 % of the states Gross State Domestic Product (GSDP) and provides meaningful employment opportunities to nearly 14.5 lakh people directly and indirectly in the secondary and tertiary sector.

The total fish production in the state during 2015 was found to be 19.64 lakh tonnes of which 24.18 % was marine and 75.82 % from inland sector (Fishery Policy 2015, Government of Andhra Pradesh 2016). This sector also plays a significant role in reducing poverty and also one of the major contributors to foreign exchange earnings. The Government of Andhra Pradesh is unveiling the policy of good governance and best culture practices in enabling the sustainable development of fisheries and aquaculture in the coming years.

In Andhra Pradesh, nine out of thirteen districts are along the coastline *viz.* Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore. The total continental shelf is more than 33,227 sq.km. The profile of marine fisheries sector in the state having 4 major fishing harbours, 349 fish landing centres and 555 marine fishing villages is presented (Table 1). The estimated marine fish landings of Andhra Pradesh in 2016 dominated by motorised sector is 1.92 lakh tonnes (CMFRI-Marine Fish Landings in India, 2016). Provisional estimate of the value (₹ crores) of marine fish landings in 2016 at Point of First Sales and Point of Last Sales was 2516 and 3916 respectively.

Fish market structure analysis

The study assessed the fish market structure of North coastal districts of Andhra Pradesh with focus on marine fish markets using a pre-tested schedule

with information gathered from the various stake holders for the year 2016-17. It was found that the marine fish marketing operation were performed / controlled by a large number of intermediaries who were well organised locals with good network on fish trade and other facilitating functions. The fish market channels were in operation with the wholesalers buying fish in bulk quantities from auctioneers and selling it to retailers or other traders. The wholesalers imparted value addition in terms of sorting, grading, cleaning, icing and packing fish prior to sale. Subsequently the retailers sold the fish directly to consumers over the counters or with the help of vendors. Retailers mostly buy fish from the wholesaler, but in several cases, groups of retailers were found participating in the auction process for buying fish directly from the auctioneer.

Under the study five fish markets -one wholesale cum retail, two retail and two terminal fish markets were surveyed in North coastal districts of Andhra Pradesh viz. Visakhapatnam Fisheries Harbour (wholesale cum retail), Rajayyapeta in Visakhapatnam district and Mukkam in Vizianagaram district (retail) and Chintapalli in Vizianagaram district and Bandaruvanipeta in Srikakulam district (terminal). The market structure analysis was based on the major dimensions namely, location, type of market, timing, access, arrival and disposal sources, conduct, infrastructure amenities, market union and regulation. The market structure of these markets was analysed and the details are given in Table 2. The

Table I. Marine fisheries profile of Andhra Pradesh

Particulars	Andhra Pradesh	Srikakulam	Vizianagaram	Visakhapatnam
Length of the coastline (km)	974	200	29	136
Number of landing centres	349	55	12	66
Number of fishing villages	555	128	20	63
Number of fishermen families	1,63,427	25,579	5,138	28,779
Total fisher folk population	6,05,428	98,450	20,812	1,13,632
Number of export units	121	0	0	36
Total fishing crafts	31318	5571	1280	8019
Mechanised fishing crafts	1871	0	0	579
Motorised fishing crafts	14648	691	522	2480
Non mechanised fishing crafts	14799	4880	758	4960

Source: Department of Fisheries, Government of Andhra Pradesh
Andhra Pradesh Marine Fisheries Census, 2010, ICAR-CMFRI

Table 2. Market structure analysis of the major fish markets

Market Dimension	Visakhapatnam Fisheries Harbour	Rajayyapeta	Mukkam	Chintapalli	Bandaruvanipeta
A. Location					
Year of establishment	1933	1910	1920	1940	1930
Type of Market	Wholesale and Retail	Retail	Retail	Terminal	Terminal
Area of the market (acres)	One	Two	Three	Four	Ten
Latitutde/Longitude	17.69617 N 83.30096 E	17.43803 N 82.91235 E	17.98438 N 83.55646 E	18.07307 N 83.65670 E	18.32480 N 84.12667 E
Market control	Individual/ Traders/ Commission agents/Local bodies	Individual	Local bodies	Individual / Others	Individual / Others
B. Market access					
Nearest landing Centre	Fishing Harbour	Rajayyapeta	Mukkam	Chintapalli	Bandaruvanipeta
Nearest railway station (km)	Visakhapatnam, 5	Tuni, 25	Vizianagaram, 28	Vizianagaram, 35	Srikakulam, 35
Nearest bus station (km)	Visakhapatnam, 5	Nakkapalli, 7	Bhogapuram, 12	Chintapalli, 1	Bandaruvanipeta, 1.7
Nearest airport (km)	Visakhapatnam, 25	Visakhapatnam, 68	Visakhapatnam, 60	Visakhapatnam, 70	Visakhapatnam, 130
Nearest seaport (km)	Visakhapatnam, 1	Visakhapatnam, 80	Visakhapatnam, 50	Visakhapatnam, 70	Visakhapatnam, 130
C. Market Timing	6-12 hrs 15-19 hrs	9-12 hrs 15-18 hrs	8-12 hrs 16-20 hrs	4-8 hrs	4-8 hrs
D. Market Conduct					
Number of Wholesalers	20	-	-	-	-
Number of retailers	50-70	12	10	40	30
Number of middlemen	10	-	-	1-2	1-2
Commission agents	10-15	-	-	-	-

market access indicated that the distance from the landing centre to the nearest railway station for these markets are almost 5- 35 km and bus station is about 1-12 km. Visakhapatnam international airport and Visakhapatnam sea port is the nearest airport and sea port to these markets. Due to good connectivity by highway roads and rail, transportation of fishes from one place to another is done in a very short span of time.

Around 20-25 marine species were marketed in these five selected markets. The most common species traded were sardine, mackerel, seer fish, croakers, cat fish, ribbon fish and shrimps. Price discrimination exists for the different fish species.

The Visakhapatnam fishing harbour wholesale cum retail market trades fishes to an average of 23 tonnes(t) followed by Chintapalli (3.7 t), Rajayyapeta(1.9 t), Mukkam(1.72 t) and Bandaruvanipeta(1.3 t) . The average daily market capitalization of the fish trade was found to be ₹ 43.7 lakhs in wholesale market of Visakhapatnam, 3.38, 1.03, 0.75 and 0.72 lakhs in retail/ terminal markets of Chintapalli, Bandaruvanipeta, Mukkam and Rajayyapeta markets respectively. The observations on market arrivals and disposals of the markets of North Coastal districts of Andhra Pradesh indicated that in Visakhapatnam, fish arrive mainly from Bhimili, Mangammavaripeta, Uppada, Mukkam,

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Lawsons Bay, Pudimadaka and Chintapalli. In other markets, the main arrivals are from their respective landing centres and the fish goes for sale to the nearby villages, towns and neighbouring states (Table 3).

In conclusion, north coastal districts of Andhra Pradesh are one of the major zones where fish markets and the trading operations are widely distributed covering the different parts of the state and other distribution and consumption destinations. Among these markets, Visakhapatnam which is one of the largest wholesale markets in the zone offers significant marketing functionaries and trade and caters to the fish demand of the nearby towns and cities as well as the neighbouring states. However lack of appropriate infrastructure and adequate amenities and low product diversity act as limiting factors in fish trade in majority of the markets studied. Hence appropriate government interventions in terms of strengthening infrastructure and imparting value addition may be created to facilitate better functioning of these markets, thereby augmenting revenue and catering to the increased demand for marine fish from nearby states.

Table 3. Market arrivals and disposal of various fish species in selected markets

Market	Arrival	Disposal
Visakhapatnam	Bhimili, Mangammavaripeta, Uppada, Mukkam, Lawsons bay, Pudimadaka and Chintapalli	Visakhapatnam, Chennai, Kerala, Odisha and West Bengal
Rajayyapeta	Rajayyapeta	Nakkapalli, Tuni, Anakapalle and Narsipatnam
Mukkam	Mukkam	Bhogapuram, Vizianagaram and near by villages and towns
Chintapalli	Chintapalli	Vizianagaram, Srikakulam, Visakhapatnam and near by villages and towns
Bandaruvanipeta	Bandaruvanipeta	Srikakulam, Visakhapatnam and South Odisha