Advances in Economics and Business Management (AEBM)
Print ISSN: 2394-1545; Online ISSN: 2394-1553; Volume 1, Number 3; November, 2014 pp. 259-264

http://www.krishisanskriti.org/aebm.html

Analyzing Potential of Kharakuva Fish Market on the Coastal Region of Saurashtra, Gujarat

[*]R.A. Khileri[1], S.R. Lende[2] and P.G. Deshmukh[3]

[1,2]College of fisheries, Junagadh Agricultural University, Veraval, Gujarat–362265
[3]College of Agriculture, Junagadh Agricultural University, Junagadh, Gujarat–362265
E-mail: [1]rckhileri@gmail.com

Abstract: *The present investigation was conducted to find out the effectiveness of 'Kharkuva fish market' as a marketing system in importing and exporting fish from different coastal areas of Veraval (Gujarat) to different parts of India, especially north east India. The market was surveyed from March 2013 to February 2014. The area of present investigation was purposively selected and the trading system was analyzed. The market operates actively during fishing season. The collection of data was done by preparing data collection sheet. Several species of coastal and marine fish Paplet, baga, bangara, rawas, gedra, makul, narsinga, magra, bhunger, dhoma, chapri, vekhali, khagi, chaksi, palvo, nariyela, dhamil, bumla, lal machala, don etc were commonly available in the market. The market channel contents involvements of different peoples like fish processor, wholesaler, traders and retailers etc. The present investigation through survey revealed that the trading system till now is seasonal and the activity remains maximum in the September to December season. The price of marine fish varies with the size, availability, quality of the fish species. Transport, labour also play significant role in selling price determination. The marketing system is associated with a good employment generation involve men and women. The main barrier of the sustainable development of the market is lack of infrastructure, poor road condition, price instability etc.*

Keywords: *Kharakuva, Fish Market, Saurashtra, Veraval*

1. INTRODUCTION

India is the second largest fish producing country with the contribution of 5.43% in global fish production and Gujarat, the northern-most maritime state on the west coast of India, is one of the richest states in the country in terms of fishery resources. With a coastline of 1,663 km, consisting about 22% of country's total coast line, Gujarat provides the largest share to India's total marine fish production. Gujarat coast is distinct from the other coasts of the country with its shallow depth, wider continental shelf and vast stretches of saline and tidal mudflats. Veraval and Porbandar are the two big landing centres in Gujarat. The general fish quality management standard of State was not up to the standards in almost all landing centres and harbours. Lack of Infrastructure facility was a common problem in Veraval [2], The estimate of all India annual marine fish landings for the year 2013 is 3.78 million t as against the all-time high of 3.94 million t during 2012 registering a decline of 1.56 lakh t (4%). Gujarat contributed the highest at 7.17 lakh t [1].

During the financial year 2013-14, exports of marine products reached an all time high of US $ 5007.70 million. Fish is an important part of the regular diet and is a cheap source of protein for the peoples.Total fish catch is consumed in fresh, dry and frozen condition[7].Marine fishing is very common in the entire coastal zones of India. These fresh fishes have demand both in domestic and international market and play an important role in employment generation of coastal poor people [3]. In the fresh fish marketing channel people involved early in the production chain add relatively more value and make little profit due to small scale production, poor product quality, lack of market access and high transportation cost/toll/taxation etc.[8]. *Kharakuva* fish market, Veraval, Gujarat is the mainregulated fresh fish market of Gujarat, India. Different kinds of fresh fish from all fish processing area of Gujarat coast (Porbandar, Mangrol, Chorwad, Jafrabad, Navabander, Okhaetc.) usually come to this market. These fresh fish later supplied to differentmarkets such as Bihar, Assam, U.P., Odisha and some other parts of India andabroad. The most common fresh fish traded inthis market are Paplet, baga, bangara, rawas, gedra, makul, narsinga, magra, bhunger, dhoma, chapri, vekhali, khagi, chaksi, palvo, nariyela, dhamil, bumla, lal machala, don etc.The present study was performed tounderstand the marketing channel, themargin of profit in different levels, hygienecondition and associated risk, and thefuture prospect of the market.

2. MATERIALS AND METHODS

2.1 Group investigation

The *kharakuva* fish marketing involve a long marketing channel system starting from the fish *Processors, Beparis, Aratdars,* and *Wholesalers* to *Retailers* and consumers. Some individuals of all the above mentioned groups are surveyed several times season wise from March 2013 to February 2014. In the survey we prepared a standard format with the refrence followed by M.B.J.Karuki, 2011[6]. The fish processors are interviewed in their fish landing places which are located

mainly in the coastal belts of Veraval. All the other groups are interviewed in the fish market of *Kharakuva* (Veraval). In this system the people involved in processing of fresh fish are called fish processor. In the processing industry two categories of workers are common. The first group comprises owners of fresh fish enterprises and the others are labour. The latter group also includes female workers, child along with men. *Beparis* are relatively large and professional trader who bought fresh fish from fish processors and generally sell it to the wholesalers, retailers in wholesale market.

2.2 Data analysis

All the collected data were abridged to tabular form using standard statistical methods. For fresh fish marketing, commission agents involved were identified and marketing costs and profits were determined using flow diagrams [5]. All calculations were calculated by using Microsoft Excel 2007.

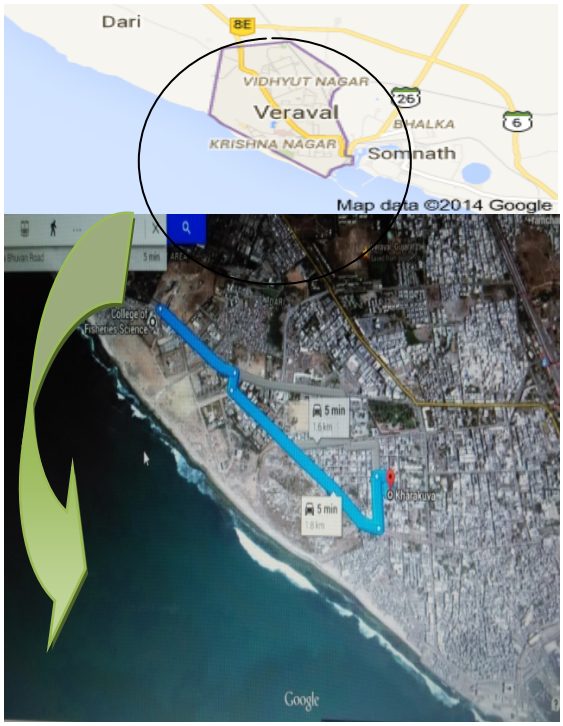

Fig. 1: Geographic location of *kharakuva* fresh fish market, Veraval"

3. RESULT AND DISCUSSION

3.1 Marketing Channel of *Kharakuva* fish market

All fresh fish traded in this market pass through private channels. Different categories of businessman are involved such as *fish-processors*, *Beparis*, *Aratdars*, *Wholesalers* and *retailers*. In general *Beparis* collect the fresh fish from the *fish-processors* and sell it to the *Aratdars*. *Wholesalers* purchase from *Aratdars* and sell it to the *retailers* and consumers in the market. Total marketing channel of fresh fish is presented through a flow diagram. In other way the women's are play a vital role in local business. They directly collect the fish from fish processors and sell in local market.

3.2 Commonly landed marine fishes

1. Baga (Lepturacanthus savala):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-like) > Trichiuridae(Cutlassfishes) > Trichiurinae

Common length: 70.0 cm

Biology: Inhabits coastal waters and often comes near the surface at night. Feeds on variety of small fishes and crustaceans. Caught mainly with shore seines, bagnets and coastal bottom trawls. Marketed fresh and iced as well as dried salted [4].

2. Bumla (Harpadon nehereus):

Classification: Actinopterygii (ray-finned fishes) > Aulopiformes (Lizard fishes) > Synodontidae
Common length: between 10 and 25 cm
Biology: Benthopelagic, inhabits deep water offshore for most of the year, but also gathers in large shoals in deltas of rivers to feed during monsoons. An aggressive predator. Feeds on small fishes. Primarily caught along Maharastra with the bag-net. Also caught with bottom trawls[4].

3. Paplet (Pampus argenteus):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Stromateidae(Butterfishes)
Common length: 30 cm
Biology: Inshore species, usually in schools over muddy bottoms, associated with fish species like *Nemipterus* and *Leiognathus*. Adults feed on ctenophores, salps, medusae, and other zooplankton groups. Western populations spawn from late winter through the summer with peaks from April to June. Sold fresh in local markets or shipped frozen to urban canters. Also used in Chinese medicine[4].

4. Bangara (Rastrelliger kanagurtra):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Scombridae(Mackerels, tunas, bonitos) > Scombrinae
Common length: 25 cm
Biology: Adults occur in coastal bays, harbors and deep lagoons, usually in some turbid plankton-rich waters. Form schools. Feed on phytoplankton (diatoms) and small zooplankton (cladocerans, ostracods, larval polychaetes, etc.) Small groups were seen eating eggs of *Cheilio inermis* straight after spawning. Adult individuals feed on macroplankton such as larval shrimps and fish. Eggs and larvae are pelagic.

Generally marketed fresh, frozen, canned, dried-salted, and smoked; also made into fish sauce [4].

5. Ravas (Leptomelanosoma indicum):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Polynemidae (Threadfins)
Common length: 80 cm
Biology: Occurs over shallow muddy and sandy bottoms of the continental shelf), mainly near estuaries and sometimes entering rivers. Feeds mainly on small benthic crustaceans, especially prawns and crabs, and small fishes. Percentage of fishes eaten increases with size. Utilized fresh, dried or salted and frozen; eaten steamed, pan-fried, broiled and baked [4].

6. Gedara (Euthynnus affinis):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Scombridae (Mackerels, tunas, bonitos) > Scombrinae (FishBase, 2013).
Common length: 60 cm
Biology: Occurs in open waters but always remains close to the shoreline. The young may enter bays and harbors. Forms multi-species schools by size with other scombrid species comprising from 100 to over 5,000 individuals. A highly opportunistic predator feeding indiscriminately on small fishes, especially on clupeoids and atherinids; also on squids, crustaceans and zooplankton. Generally marketed canned and frozen; also utilized dried, salted, smoked and fresh [4].

7. Magra (Carcharhinus limbatus):

Classification: Elasmobranchii (sharks and rays) > Carcharhiniformes (Ground sharks) > Carcharhinidae (Requiemsharks)
Common length: 150 cm
Biology: An inshore and offshore shark found on or adjacent to continental and insular shelves. Often off river mouths and estuaries, muddy bays, mangrove swamps, lagoons, and coral reef drop-offs. Bottom associated or pelagic. Young common along beaches. Active hunter in midwater. Feeds mainly on pelagic and benthic fishes, also small sharks and rays, cephalopods and crustaceans. Viviparous, Produces litters of one to 10 young. Incriminated in very few attacks but dangerous when provoked. Often taken by shore anglers. Used fresh for human consumption, hides for leather, liver for oil. Parthenogenesis has been observed in a captive female [4].

8. Chapri(Scomberomorus lineolatus):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Scombridae (Mackerels, tunas, bonitos) > Scombrinae
Common length: 70 cm
Biology: Unlike *S. commerson* and *S. guttatus*, *S. lineolatus* is not encountered in very turbid waters or much reduced salinity. Feeds primarily on fishes. Also taken with midwater trawls, purse seines and by trolling. Taken from Oct.-Nov. along the Thai coast, Indian Ocean; in Malaysia Nov.-Feb. in the west coast, Mar.-Jul. in the south, Feb.-Mar. and Aug.-Nov. in the east; in India from May-Sept. with other seerfishes. Marketed mainly fresh; also dried-salted [4].

9. Vekhali (Epinephelus diacanthus):

Classification: Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Serranidae (Sea basses: groupers and fairy basslets) > Epinephelinae
Common length: between 55 cm
Biology: Occurs over muddy sand or mud substrata and caught in depths of 63 to 100 m off the Kerala coast [4].

10. Chakasi (Tenualosa ilisha**):**

ClassificationActinopterygii (ray-finned fishes) > Clupeiformes (Herrings) > Clupeidae (Herrings, shads, sardines, menhadens) > Dorosomatinae
Etymology: *Tenualosa:*
Length: between 36 cm
BiologySchooling in coastal waters and ascending rivers for as much as 1200 km (usually 50-100 km). Migration though is sometimes restricted by barrages. *Hilsa* far up the Ganges and other large rivers seem to be permanent river populations. Feeds on plankton, mainly by filtering, but apparently also by grubbing on muddy bottoms. Breeds mainly in rivers during the southwest monsoon (also from January to February to March). Artificial propagation has been partially successful in India. Known to be a fast swimmer, covering 71 km in one day. Marketed fresh or dried-salted [4].

11. Dhamil(Lethrinus ornatus): seasonally

ClassificationActinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Lethrinidae (Emperors or scavengers) >Lethrininae
Length: between 45 cm
BiologyInhabits sandy and soft bottoms and seagrass beds in inshore bays, lagoons and areas adjacent to reefs. Usually in small groups. Feeds on crustaceans, mollusks, echinoderms, polychaetes and small fishes. Juveniles commonly visit the tidal reef flats to feed when the water is high [4].

A

B

C

D

E

F

G

H

Fig: 2.the*kharakuva* fresh fish market; A. Local transport vehicle: B. Landing: C-H. Catch of the Different species

Traders

Kharakuva fish market is the leadingfresh fish market in Gujarat. Several Aratdars and wholesalers operate here. According to Gujarat fisheries statistics it is estimated that 1, 77,320 tons of Marine fish move through *kharakuva* market per annum. The market remains most active during the winter season (September to December) as the supply and climate remains most consistent. Rest of the season the supply of the fish falls(Fig 4). The fresh fish trading system in Gujarat depends on several stakeholders like fish processor, Beparis, Aratdars, Wholesalers and Retailers (Fig 3).

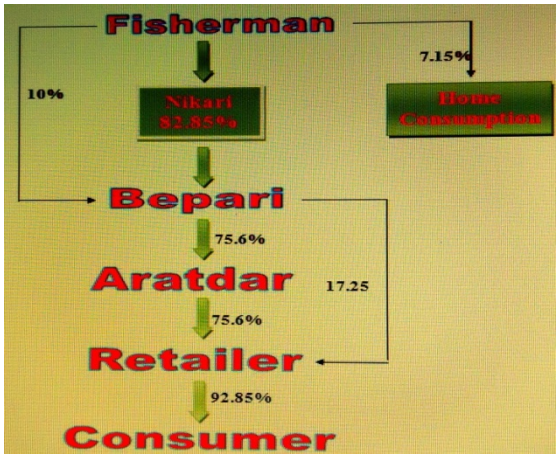

Fig 3: Marketing cannel of *kharakuva* fish market

Transportation method

In general the fish selling farms are located in the coastal areas. After landing they are purchased by Beparis and Aratdars. Here the means of transport is either mechanized vans or small trucks and *chakra* for local transportation. Aratdars sale the collected fresh fishes to wholesalers in the market. Here large trucks are used for the transportation system.

In some areas where the road transportationsystem is not well developed as in Veraval use *Rekari* system(from harbour to *danga*) as bestalternative transport system. The *Kharakuva* fish market operates weekly at everySaturday. Retailes and different types ofconsumers purchase fish as per theirrequirement. Fish are sorted/graded andrepacked either inside or nearby the market.Manual labours work here for loading andunloading. Now a significant amount offresh fish like Paplet, Baga, Gedra, chakasi, ismostly exported to China, Japan and European Union.

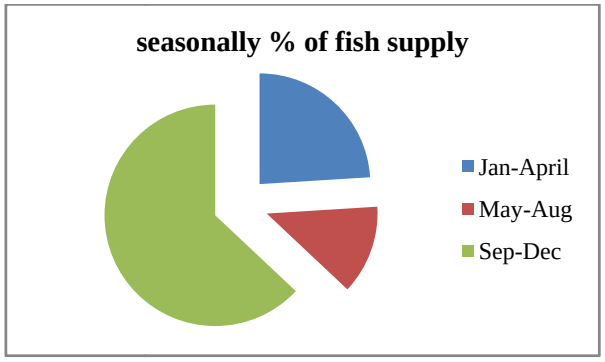

Fig. 4: Seasonally percentage of the fish supply

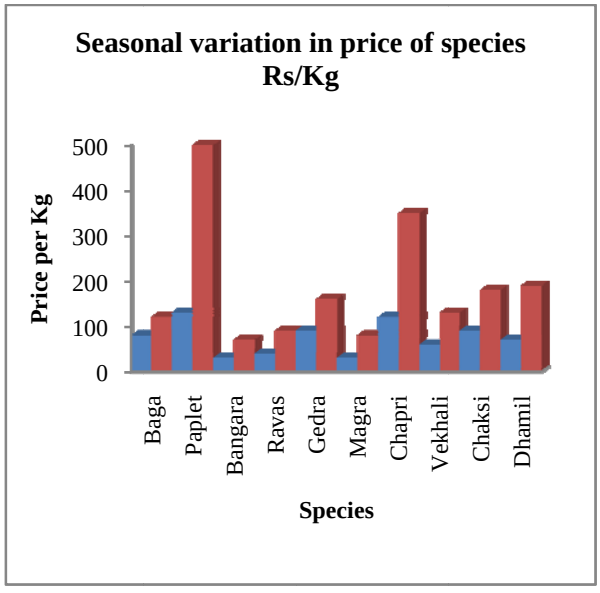

Fig. 5: Seasonal variation in price of the species

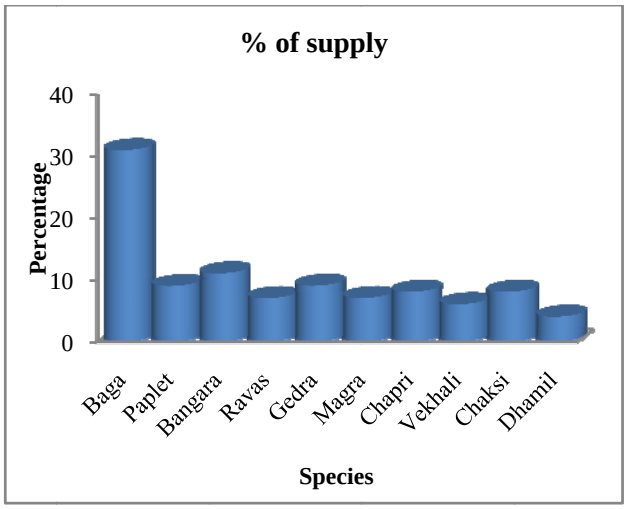

Fig: 6. % of supply of different species

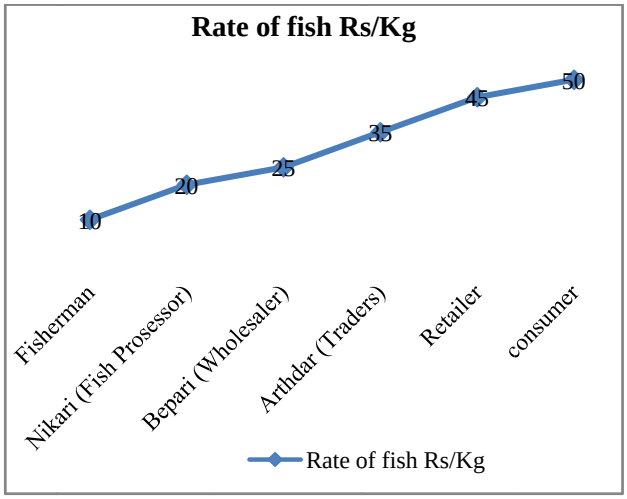

Fig: 7. Price of fish at different marketing cannel Comparative rate of fresh fish at *Kharakuva* fish market

The price of different marine fishdepends on the size, availability, quality ofthe species, transport, labour and season(Figure 5). During winter season the rate ofall the available fish increases as the consumption is increase. The comparativerates of available fish are given (figure 5).

Species Availability

Due to the recent application of deep seatrawling system by the fishermen of coastalGujarat, a good quantity of marinefish is available in the market. The mostcommon ones are Paplet, baga, bangara, rawas, gedra, narsinga, magra, bhunger, dhoma, chapri, vekhali, khagi, chaksi, palvo, nariyela, dhamil, bumla etc.Availability of species varies from seasonto season. Most variety is found in winterseason than summer season and others (Fig 5, 6 & 7).

Marketing Costs

Marketing costs fresh fish include expenses such as transport, tax and market fees, purchasing of insulated box, ice, electricity, hired labour, storage etc.The costs of fish marketing depend on the volume of fish, detachment from the market and type of transportation etc (Fig 5 & 7).

Hygienic Condition

Maintaining the hygienic condition of the fish market is very essential because the chances of faecal contamination are high. Such conditions promote and maintain a background population of blowflies mainly during rainy season. Fish processors uses insecticides to control the fleas and to maintain the hygienic condition bleaching powder is used both in fish landing areas and in the markets.

4. CONCLUSION

In the Gujarat state the fishes have been cultivated in brackish water as well as fresh water. And most of the production export in fresh condition. In the economy of Gujarat as well as India the marine fresh fish plays an important role. However, concerns arise about the long-term sustainability of marine fresh fish marketing due to unhygienic handling and poor infrastructure of market. Fish processors depend on the catching of fish as advanced fish holding chambers are not available. Furthermore lack of credit facilities, poor road and transport facilities and lesser Govt. interest also appears as a barrier for the long term sustainability of the system.However the Kharakuva fish market (Veraval) is located nearby to the State High Way which is well connected with all the coastal areas of Gujarat. This provides a good opportunity tofish exporters to establish a sustainable marketing structure.

REFERENCES

[1] Central Marine Fisheries Research Institute. 2014. In: Annual Report of CMFRI; 2013-14. Published by Cen. Mar.Fish. Res. Inst. Cochin, pp. 32.

[2] FAO (2014) Global Aquaculture Production Statistics for the year 2011www.fao.org/

[3] Goswami M., Satbiadbas R. and Goswami U. C. (2002) Market flow, Price structure and fish marketing system in Assam-A case study . In: Proceedings of National Conference on Fisheries Economics, Extension and Management, 2002, CIFE; Mumbai.

[4] http://www.fishbase.org/

[5] Islam M. R. (2006), Managing Diverse Land Uses in Coastal Bangladesh: Institutional Approaches, in Environment and Livelihoods in Tropical Coastal Zones, C T Hoanh, T P Tuong, J W Growing and B Hardy (Eds.), pp. 237-248, CAB International.

[6] Kariuki M.B.J. (2011) Analysis of market performance: A case of OMENA fish in selected outlets in Kenya M.Sc Thesis in Agricultural and Applied Economics of Egerton University., April, 2011.

[7] MPEDA (2013) 19th India International Seafood Show at Chennai Trade Centre, Chennai.PRESS RELEASE - 24 JUNE 2013.

[8] Nowsad A.K.M. A (2005) Low-cost Fish Processing in Coastal Bangladesh , Food and Agriculture Organization, Dhaka, p. 88.