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Survey on Trade and Traders of Fish Market Located at Nanpura, Surat, Gujarat

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Abstract:
Fish is an important protein resource for humans worldwide, especially as food. A fish market is a marketplace for selling fish and fish products. It can be dedicated to wholesale trade between fishermen and fish merchants, to the sale of seafood to individual consumers, or both. Retail fish markets, a type of wet market, often sell street food as well. The wholesaler buys fish in bulk from auctioneers and sells it to retailers or other traders. The retailer sells fish directly to the consumers. A vendor sells fish directly at the consumer's doorstep.Nanpura, the only wholesale fish market studied is in Surat city. Nanpura is a small residential district of Surat, Gujarat, located to the northwest of the city center. The data were collected with the questionnaires prepared on traders of the Nanpura fish market. Structured interview schedules were used to collect information from the fish market through key informal surveys and members of trader cooperative societies.In the present study, a total of 30 fish species belonging to nine orders were recorded during the present study. During the present study,a total of forty-three traders were interviewed from the Nanpura fish market. The study highlights the wholesale and retail fish market of Nanpura, to evaluate the current structure and hygienic conditions of the market in south Gujarat particularly Nanpura has potential in fisheries. Results obtained from the present work would be helpful to the Fisheries Department in developing strategies, policies and plans for training and extension work in marketing. The result would also help to improve the status of fish marketing. The study recommended developing the wholesale market and retail market with basic needs such as the platform, proper flooring, drainage system, lavatory and cold storage and preservation facilities.

Keywords —Survey, Trade, Traders, Fish market
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I. INTRODUCTION

Fish are gill-bearing aquatic craniate animals that lack limbs with digits. Fishes are ectothermic (cold-blooded), allowing their body temperatures to vary as ambient temperatures change, though some of the large active swimmers like white sharks and tuna can hold a higher core temperature [1,2]. Fish can be found in nearly all aquatic environments, Fishes are an important resource for humans worldwide, especially as food. Commercial and subsistence fishers hunt fish in wild fisheries or farm them in ponds or cages in the ocean.

A fish market is a marketplace for selling fish and fish products. It can be wholesale trade between fishermen and fish merchants, the sale of seafood to individual consumers, or both. Retail fish markets, a type of wet market, often sell street food as well.

The fish market ranges in size from small fish stalls to the great Tsukiji fish market in Tokyo, turning over about 660,000 tonnes a year [3].The fish market was known since antiquity [4]and served as a public space where large numbers of people could gather and discuss current events and local politics. Because seafood is quick to spoil, fish markets are historically most often found in seaside towns. Once ice or other simple cooling methods became available, some were also established in large inland cities that had good trade routes to the coast.

The wholesaler buys fish in bulk from auctioneers and sells it to retailers or other traders. Some value addition is carried out by the wholesalers in terms of sorting, grading, cleaning, icing and packing fish before the sale. Wholesalers usually know the demand for species and the average trend of daily fish catches at the landing centres[5]. Wholesaler acts as a commission agent to whom the fishermen sell their products and keep a higher margin as compared to auctioneers assuming the risk of sale and cost of ice during transportation [6].

The retailer sells fish directly to the consumers. Maximum value addition to fish is done through retailers. The retailer grade, cleans, packs and display the fish for the consumers. They mainly buy the fish from the wholesaler but in several cases, groups of retailers participate in the auction process by buying fish directly from the auctioneer. Retailers keep a marketing margin which shows a lot of variations across the country. The vendor sells fish directly at the consumer's doorstep. Most of the fish vendors in India are women. Some mobile vendors move around on vehicles primarily involving men. These vendors purchase fish from landing centres or wholesale markets. Many vendors supply the fish directly to hotels and restaurants which ensures daily sales and income.The growth of fish production as well as development of fishery sector in terms of economy and infrastructure is highly dependent on an efficient fish marketing system [7]

The Indian fish market was worth INR 1,110 billion in 2018. The market is further projected to reach INR 1,998 billion by 2024, growing at a CAGR of 10.2% during 2019-2024.Accounting for nearly 6% of the global fish production, India today represents one of the largest producers of fish in the world [8].

The per capita fish consumption has been continuously increasing over the past few decades. As a result of increasing disposable incomes and changing food habits, it is expected that the consumption of fish to continue increase in the coming years. The growth of the organized food retail market is expected to increase the accessibility of processed fish, particularly, canned and frozen fish products for consumers.

There are abundant Inland fisheries opportunities in Gujarat because of the six large reservoirs and small water bodies and the Sardar Sarovar command area. South Gujarat contributes 22% of total Gujarat's fish production [9]and has lots of potential in fisheries but compared to achievements in fish production, the fish marketing system is very poor and highly inefficient [6]. Freshfish havedemand both in the domestic and international market and play animportant role in the employment generation of poorpeople[10].

South Gujarat has 300 km of coastline constituting 19% of Gujarat's coastline. South Gujarat has lots of potential for fish production. The coastal belt of South Gujarat covers districts Bharuch, Narmada, Tapi, Surat, Navsari and Valsad. Surat district has eight talukas viz., Choryasi, Olpad, Palsana, Bardoli, Mahuva, Valod, Songadh and Mandvi. Since there is not much recent information available on fish marketing and its related issues to fish quality, a detailed systematic survey was planned to know the status of traders involved in fish marketing in the Nanpura fish market. The main aim of the present work was to find out the present status of the fish market of Nanpura along with the socio-economic and professional status of fish traders engaged in fish marketing.

The present work will give the current scenario of the fish market of Nanpura of Surat district. Results obtained from the present work would be helpful to develop strategies, policies and plans for training and extension work in marketing. This work would provide information to researchers, traders and fisher folks regarding the status of the Nanpura fish market.

II. MATERIALS & METHODOLOGY

Study Area

Nanpura, a wholesale fish market is located in Surat city. Nanpura is a small residential district of Surat, Gujarat, located to the northwest of the city centre. (Fig.1) The district is located on the banks of the Tapi River and covers mainly residential areas. It was constructed in 1950 by the Surat Municipal Corporation (SMC).

Fig.1 Study area
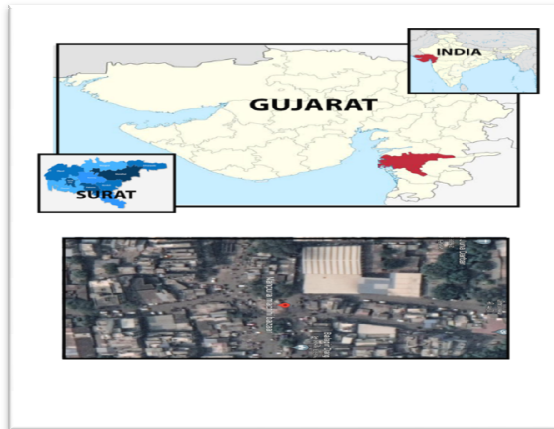
Data collection

The present survey was conducted in the year 2021.The data were collected with the questionnaires prepared on traders of the Nanpura fish market. Structured interview schedules were used to collect information from the fish market through key informal surveys and members of trader cooperative societies. The fish traders (both male and female) were approached and convinced to participate in the survey. A questionnaire containing a total of 26 questions was constructed for the purpose. The questions incorporated into the questionnaire covered all aspects that were necessary to fulfil the aim and objectives of the study. Questions were kept self-explanatoryassuming that fish traders are illiterate/less educated and are deprived of technical knowledge. Questions were asked in such a way that fish traders could easily respond even if they did not have specific/scientific knowledge of the field. The survey schedule included general information about the respondents, the type of functions they perform, marketing costs, types of fish, and the problems faced in marketing.

Identification of fish

The fishes were identified by their common name and with fish characteristics such as body shape, length, depth, mouth and nature of fish spines, scales, etc. following standard books [11,12].

III. RESULT

Fish Markets' Details

In the Nanpura fish market, fish were sold through wholesale and retail markets. Vendors also played an important role in fish marketing.

Wholesale Fish Market

A totalof 17 traders were enrolled and allotted a fixed place by SMC for fish trading from 4:00 a.m. to 10:00 a.m. The market was dominated by women wholesalers. Trucks loaded with fish were brought to the fish market early in the morning without a cooling facility. Fishes sold in the wholesale market were brought from Porbandar, Veraval, Somnath, Dwarka, Okha and other states of Maharashtra by road and railways. Dead fish were packed in thermocol boxes with ice while live fish were brought to the market in drums. Fishes were sorted according to the species and size and sold in the market. There was no proper building for marketing; the selling of fish was on the road without facilities of electricity, water, drainage, storage room and proper flooring. A small platform was constructed in the market but wholesalers did not use it for fish selling. There was no lavatory and washing facilities. Hygienic conditions were very poor. Most of the fish merchants did not use ice or any chilling facilities while very few of them used a meagre amount of crushed ice during selling the fish. Some traders were found to pack the unsold fish in thermocol boxes with ice for the next day's sale. Fish distribution was at the local and district level. Traders of Nanpura wholesale fish market sold their fish to retailers of various local fish markets, fish markets of Valsad, Navsari, Kamrej, Bharuch, Ankhleshwar retail outlets. Variety of fishes like Catla (*Catla catla*), Rohu (*Labeo rohita*), Mrigal (*Cirrhinus cirrhosus*), Bombay duck (*Harpadon*

nehereus), Dara (*Eleutheronema tetradactylum*), Black baam (*Anguilla bengalensis*), Pungus (Pangasius buchanani), Mullet *(Mugil cephalus),* Pomfret *(Pampus argentenus),* Yellow nada *(Anguilla anguilla),* Kaska *(Lethrinus nebulosus),* Cat fish *(Silurus glanis),* Gilli *(Synchirus gilli),* Ranifish *(Preca flavescence),* Silver carp *(Hypophthalmichthys molitrix), Rupchandan (Piaractus brachypomus),* Prawn *(Macrobrachium rosenbergii),* Crabs *(Brachyura).* Live fish sold were catfish *(Clarias batrachus),* Chakli *(Cypselurus oligolepis),* Bangda *(Rastrelliger kangurta),* Bangi *(Corica soborna), Kati (Stolephorus indicus),* Chura *(Thunnini), Zipta (Pleuronectes platessa),* Ray *(Dasyatis pastinaca).*

Retail Fish Market

Fishes were brought to retail markets from the wholesale fish market of Surat city. Fishes were transported by vehicles without any cooling facility. Dead fish were packed in thermocol boxes, bamboo baskets and aluminium vessels while live fish were carried to the market in drums. Fish distribution was carried out at the local and state level. Retailers of Nanpura sold their fish to consumers and vendors except the retailers of another fish market.

Marketing through Vendors

Fish marketing through vendors was not common in the study area. Approximately four vendors were involved in fish vending. Each vendor dealt with approximately less than 10 kg of fish. Vendors sold a variety of fishes such as *Catla* sp. (catla), *Labeo* sp. (rohu), *Cirrhinus* sp. (mrigal), and marine fishes such as *Stromateus* sp. (paplet), *Harpodon sp.* (bumla) etc. They carried the fish in bamboo baskets or aluminium containers without any preservation facility.

Basic details of the traders

Forty-three traders were interviewed from the wholesale and retail markets of Nanpura. Sex-wise, there was not much difference among the traders. Males and females contributed nearly equallyto the occupation of fish marketing (Fig.2). The age group of 26-30 years covered the maximum number of respondents followed by 36-40 years, 46-50 years, 41-45 years, 20-25 years, 51-55 years and 61-65 years respectively. Only 2% of traders were found in the age group 31-35 years, (Fig.3). The level of education of traders could also be an important factor in learning and adopting the new technology in fish marketing. Maximum traders (46%) were found to have secondary education, minimum traders (5%) had education up to higher secondary and beyond while 33% were college and 16% were primary (Fig.4). The marital status of traders is shown in Fig.5.Inthe Nanpura fish market traders were found to be involved in marketing, marketing and capture fishing and other occupation. Maximum traders were found to have marketing. Only 2% had other occupations while 5% had marketing and capture fishing, (Fig.6). The experience period between 11-20 years was found in maximum traders. 30% had more than 20 years of experience in fish trading (Fig.7). The source of fish supply in the Nanpura fish market was mainly from Okha, Porbandar, Dwarka, Somnath and Veraval, (Fig.8). The maximum number of traders (49%) were found to have more than 50,000 yearly incomes while 21% were having less than 50,000 incomes (Fig.9). About 14% traders of Nanpura fish market availed loan for their occupation and 86% of the traders were not taking any kind of loan for their occupation (Fig.10). Maximum traders (60%) were found to have good profit and minimum traders (40%) agreed to have profit up to average level (Fig.11). In the Nanpura fish market about 14% traders sold the processed fish. They sold dry fish and shrimp (Fig.12). Maximum traders (93%) were found to have daily selling of the fish and minimum traders (7%) were found to sell the fish up to thrice a week (Fig.13). In the Nanpura fish market (44%) of the traders were found to sell more than 100kg fish per day, 9%traders were found to sell between 76-100kg per day, 10% sold between 51-75 kg per day, 23% sold between 26-50kg per day and 14% sold between 1-25kg per day (Fig.14). In Nanpura fish market traders only 2% seller was found to have preservation facilities (Fig.15). They have cold storage. The maximum number of traders (61%) were found to have a producer to 16 local people mode of marketing, minimum traders (3%) had a mode of marketing from producer to middleman while (26%) involved the trading from producer to fish market and (10%) to other districts (Fig.16). None of the traders had any insurance for

their business (Fig.17). In Nanpura fish market traders' family members were found to assist them in their business. Maximum traders (81%) were found to have some type of assistance from family members in their business (Fig.18).

Srinath et al. [13] reported that there are about 1068 landing centres in India. Major landing centres of Gujarat are located at Mangrol, Veraval, Porbandar, Jakhao, Kandla and Okha. Capture fishing was the main occupation of Machhi caste in the Bhimpore and Umergaon Villages of Gujarat [14]. In the present study, marketing as well as capture fishing and marketing were also dominated by the Machhi caste while culture fishing and marketing were carried out by Koli Patel. The results revealed that still the traditional castes were engaged in marketing as well as capture fishing and marketing and preferred the traditional occupation over any other occupation whereas people have also entered non-traditional fishing activities like fish culture and marketing to earn more money as an income-generating and lucrative business. It wasobserved during the current field study that the traders of marketing and capture fishing had primary education due to poverty and low income. The lack of education resulted in a lack of skills in developing marketing strategies [15]. Traders of marketing and culture fishing were educated up to the graduate level. The level of education of traders could be an important factor for the traders to adopt the latest technology in cultural practices. The observation was supported by the Dash study[16]. Olubunmi and Bankole [17] found in the Oyo state of Nigeria that maximum respondents preferred frozen fish, followed by smoked fish, and dried fish while minimum respondents preferred live fish. These results were supported by Alam et al. [18] and findings showed that the majority of the people preferred frozen fish. These results were not supported by the findings of the current study because fresh and dried fish marketing was very common in the study area. A well-organized marketing network is essential for the distribution of fish at reasonable price. According to Roy[19] maximum respondents sold their catch directly to local people while some of them sold their catch to middlemen. Middlemen bought fish from fishers at cheaper rates and sold them to the markets for better prices. Fishermen's share was found highest when fish was directly sold to consumers and was the lowest when intermediaries were involved [20]. Similar results were observed particularly from the Nanpura fish market. Price fixation was generallydetermined by the fish sellers as was observed in the present study on fish marketing in the Nanpura fish market. Olalusi et al. [21] reported that the Liverpool fish market in Lagos state of Nigeria was mostly dominated by women and only a few men were found to be involved in the market. Lawel and Idega [22] found that 90% of women participated in fish marketing in Benue state. Fishing was carried out by male whereas wholesale and retail fish markets of Nanpura fish market was dominated by women indicating their active participation in the fishing sector. The findings of the current study expressed that the middle-aged group of traders with experience of more than ten years dominated the occupation of marketing whereas the maximum young traders were involved in culture fishing and marketing. Similar results were observed in the study[23]. Edwards [24] and Dey et al. [25] agreed that experience is crucial and contributes to the success of occupation. The current observations also showed that the higher level of education (secondary to college) in traders having fish and shrimp farming could be correlated with the adoption of technology and higher income.

IV. CONCLUSION

The findings of the current study revealed that landing facilities were not observed in Surat City. The socio-economic and professional background of traders involved solely in marketing, capture fishing and marketing as well as culture fishing and marketing determined their habitat, attitudes and awareness of entrepreneurial activities.The findings of the present study showed that even basic facilities like electricity, water, drainage and proper flooring were not found in the Nanpura fish market.A new trend of live fish marketing catfish was noticed from the study of the Nanpura fish market.

V. RECOMMENDATIONS

The outcome of the survey showed some constraints associated with fish marketing in Nanpura. The following recommendations were made to improve the fish market and marketing system of Nanpura Fish market of Surat:

• The government should provide technical and financial assistance to the traders for proper marketing, pricing as well as credit facilities etc.

• Non-governmental organizations and related institutes should come forward to support fishers in generating their livelihood with proper guidance and training programmes.

• Infrastructure and hygienic facilities such as platform, proper flooring, water, drainage system, electricity, lavatory and washing facilities should be developed in wholesale and retail fish markets of Surat city.

• The fish markets must be well-planned with modern wholesaling and retailing facilities.

• The fish market should be well-cleaned daily after a closing period to ensure hygienic conditions in the market.

• Unsold rotten fish and garbage should be dumped scientifically.

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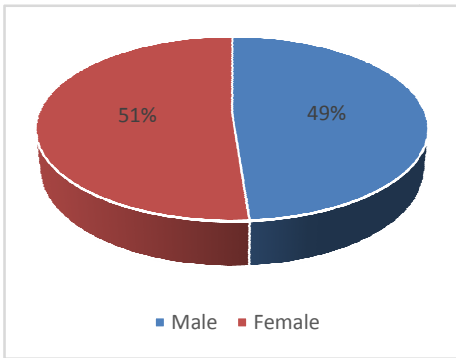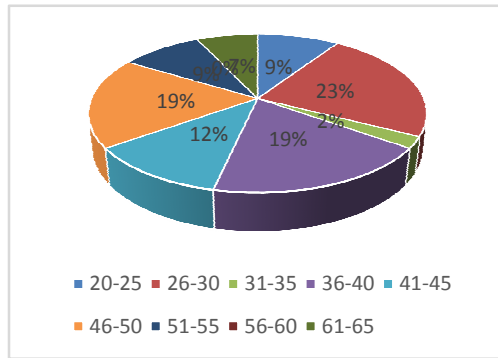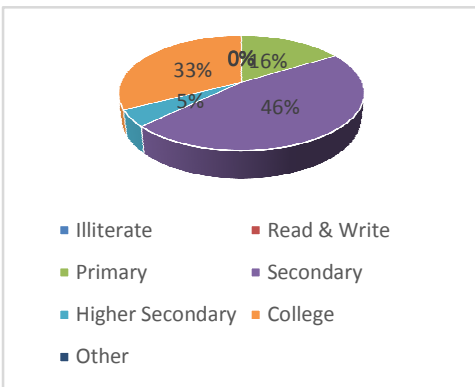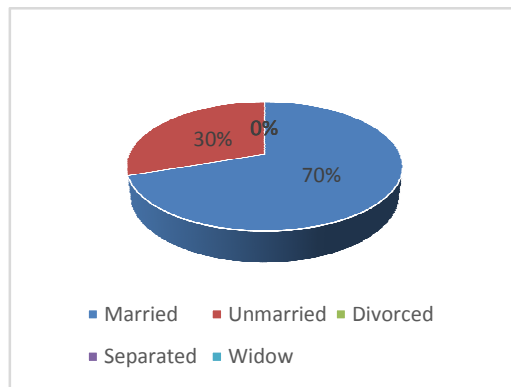
Fig. 2: Gender composition.
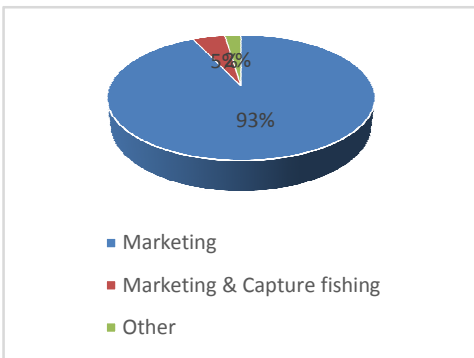

Fig. 3: Age

Fig. 4: Education
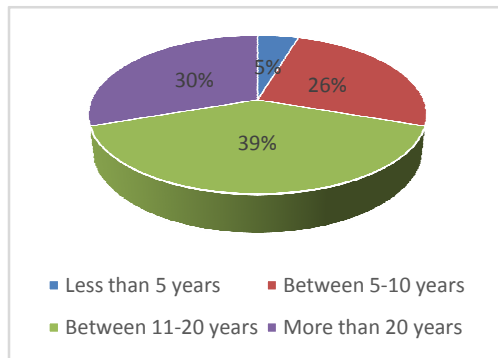

Fig. 5: Marital status
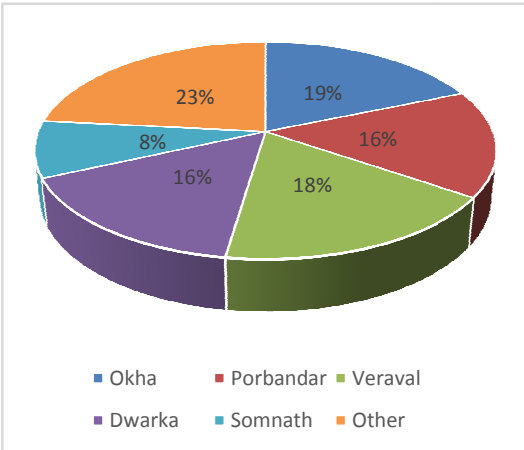

Fig. 6: Occupation.

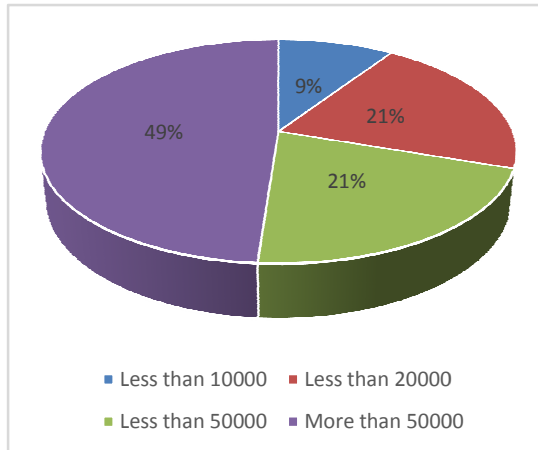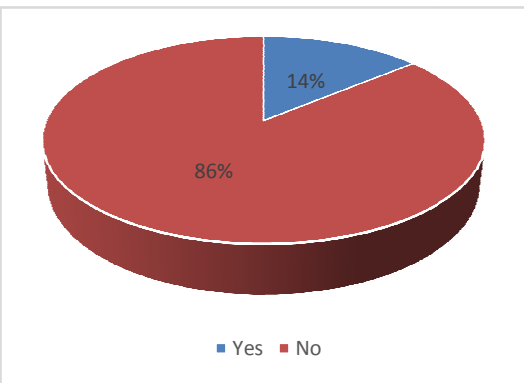Fig. 7: Experience.

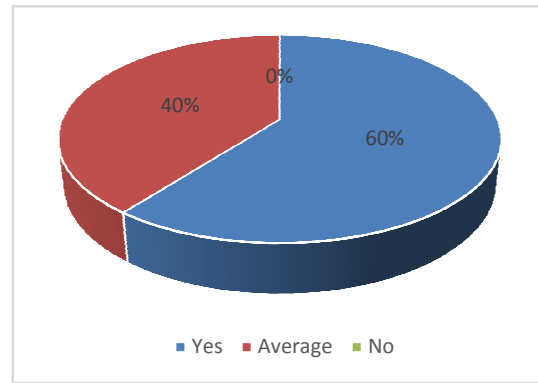Fig. 8: Source of fish

Fig. 9: Yearly income
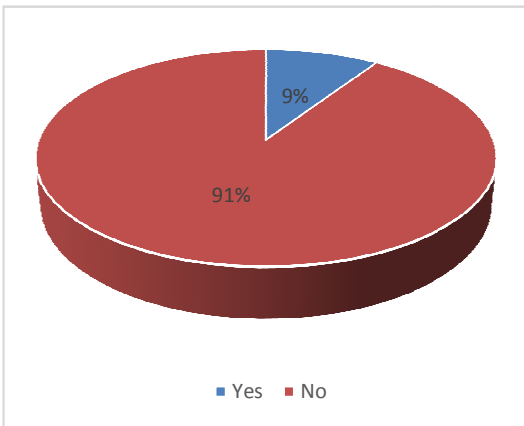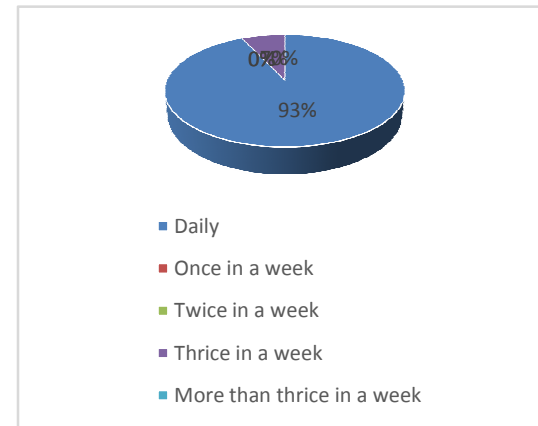

Fig. 10: Loan.

Fig. 11: Profit

Fig. 12: Processed fish
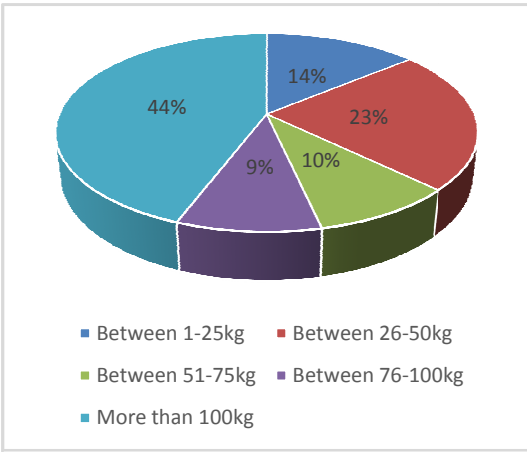

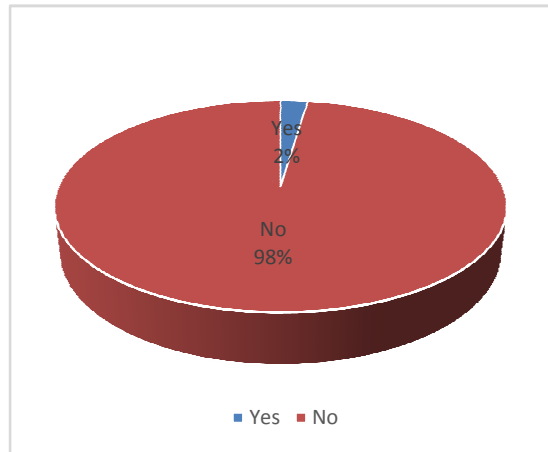Fig. 13: Frequency of selling fish

Fig. 14: Selling of fish per day
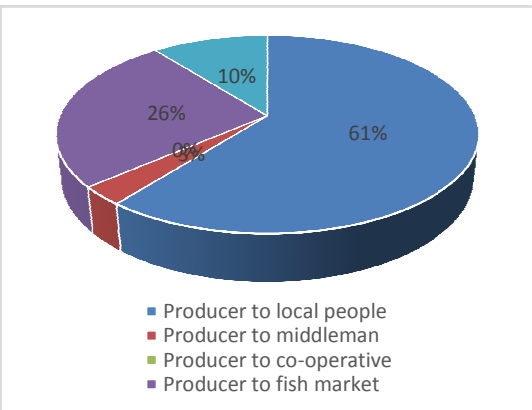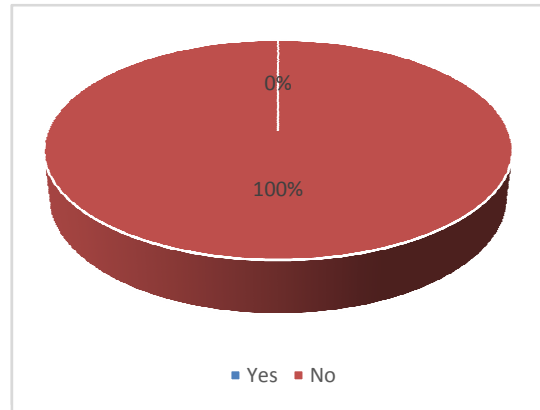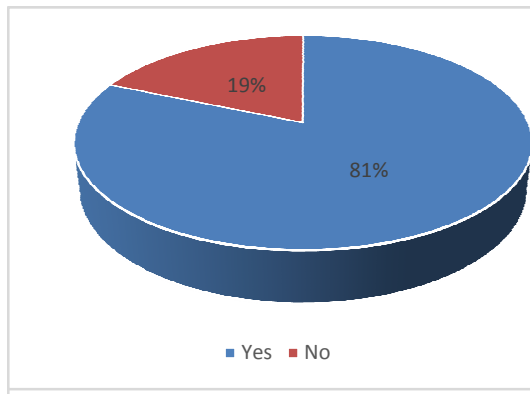

Fig. 15 Preservation facilities

Fig. 16: Mode of marketing

Fig. 17: Insurance

Fig. 18: Family members assistance