Chapter-3

Profile of Fish Processing Units

3.01 Introduction

Industrial economy of our country protected by the state and external competition was prevented to grow in a world of rapid change for a long time. India made radical changes in policies to reform the economy and shift away in policies to expose the economy to free competition, open for foreign technology and capital with a view to achieve higher degree of efficiency. The question that arises is whether these policy changes have helped in achieving desired results, i.e. higher productivity, fuller capacity utilisation, increased exports, employment generation, etc. (Sohal, M., 2002). This chapter is an attempt to know what changes have taken place in the fish processing industry of Gujarat during the recent times. The chapter is divided into three sections. Section one deals with the profile of the fish processing units, Section two and three deal with problems faced by the processing units and conclusions.

Section-I

PROFILE OF FISH PROCESSING UNITS

This section deals with a profile of fish processing units in the state of Gujarat. The fish processing units were studied on several parameters such as location of industry, ownership pattern, turnover, installed capacity and its utilization, ownership of fish processing equipments, product range, employment, wage and salary, and wastage of fish.

3.02 Year of Inception

Table 3.01
Year of Inception

Year of Inception	Percent
Before 1980	5.2
1981 – 1990	5.2
1991 onwards	89.6

Source: Primary survey for the table and all other tables in chapters 3 to 7.

The table reveals that 5.2% of the fish processing units were established before 1980. Only 5.2% of the units have started during the decade 1981-90. Majority of the units have come up after 1991 and onwards, as many as 89.6% of the processing units. Hence, most of the units are newly established units.

3.03 Locations of Units

Of the total 80 processing units in Gujarat only 58 units are operational presently. The remaining 22 units have closed down. Fish processing units are in the centres of Veraval, Chorwad, Mangrol, Porbandar and Varvala. This may be mainly due to availability of raw material. 75% of the operational units are located in Veraval for the same reason. Hence, availability of raw material is an important reason for concentration of industries in a particular region. Concentration of fish processing units in each centre is as follows:

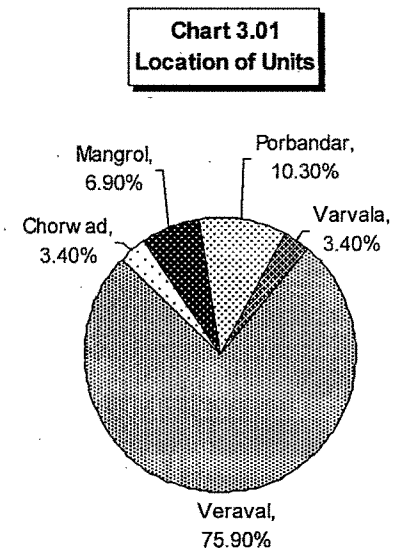


Table 3.02
Locations of Units

Centre	Percent
Veraval	75.9
Chorwad	3.4
Mangrol	6.9
Porbandar	10.3
Varvala	3.4
Total	100.0

"The selection of location for an industrial plant is a long time commitment. A new enterprise may suffer throughout its life due to unfavourable location. Once a plant has been built, the expense and disruption of activities necessary to move it to more favourable location is quite impracticable. Therefore, the search for plant site justifies very careful consideration" (Banga and Sharma, 1996).

In the case of fish processing units, their locations have been chosen on the basis of availability of raw material (fish), which constitutes 83% of the total cost. In the five centres mentioned above, fish is available in large quantities and at cheaper rates. Hence, the decision to locate the units depends on the availability of raw material.

In order to analyse whether a particular industry is evenly distributed over the districts of the State or is concentrated in some districts, two statistical measures suggested by Professor Sargent Florence have been used in the analysis. These measures are: (I) Location quotient and (II) Coefficient of Localization.

This analysis is useful from the employment point of view.

3.03.01 Location Quotient[1]

The location quotient can be calculated by the following formula:

LQ = Percentage share of the district in the workers in the given industry / percentage share of the district in the total workers in all industries

The location quotient for this industry for Junagadh district is high at 25.94 percent, followed by Porbandar district at 15.67 percent indicating that the proportion of workers employed in this industry is relatively large compared to the proportion of workers employed in all industries taken together.

3.03.02 Coefficient of Localization[2]

The coefficient of localization has been calculated by following formula:

$$CL = (sum\ of\ positive\ deviation\ (Wij / Woj - Woo) / 100$$

Where,

CL = Coefficient of Localization,

Wij = number of workers in *J*th industry in *i*th district. (*I* = 1,2,.....19 districts, *j* = 1,2,.....42 industries)

Wio = total number of workers in *i*th district over all 42 industries.

Woj = total number of workers in the State in *j*th industry.

Woo = total number of workers in the State in all 42 industries taken together.

Coefficient of localization has been found to be 0.93. A high value of coefficient of localization indicates that the employment in fish processing industry is concentrated in few districts, compared all other industries taken together (Government of Gujarat, 2002).

3.04 Ownership Pattern

The pattern of ownership is an important managerial decision to be taken while establishing a business enterprise. This will influence the success of the enterprise, and the attainment of its business objectives. The study found five different ownership patterns among the fish processing units, namely (1) Own (Sole Proprietorship) (2) Hired (3) Partnership (4) Private Limited (5) Public Limited.

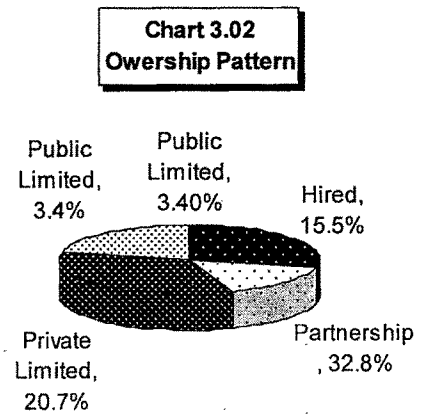


Table 3.03
Ownership Pattern

Ownership Pattern	Percent
Own	27.6
Hired	15.5
Partnership	32.8
Private Limited	20.7
Public Limited	3.4
Total	100.0

As the table shows, 27.6% of the fish processing units were established as 'Own' (Sole Proprietorship). Some traditional fishermen had rich inheritance which they could invest in the business. They were sole owners of their fish processing units.

The study found that 15.5% of the fish processing units had hired ownership. In these cases, the people had knowledge of fish processing, but no finance to establish a fish processing plant. So they either hire a complete factory, which is shutdown, or they hire the idle capacity of a running unit. In both cases, an oral or written contract is made between the parties, including the cost of processing fish. Hence, knowledge plays a key role in enterprising a business.

It was found that 32.8% of units were established in the form of partnership firms. About 20.7% of the enterprises were established as 'Private Limited' companies. Gujarat has only 3.4% public limited companies in the fish processing business. These companies were attracted by the high rate of return in fish processing. Thus, it can be said that high rates of return is an incentive for entering in to a business venture.

3.05 Turnover

Professor Baumol believed that firm pursues objective of sales maximization rather than maximization of profit. He considered sales

maximization important for any firm as operational efficiency and profit ultimately depend on sales (Baumol, W., 1977).

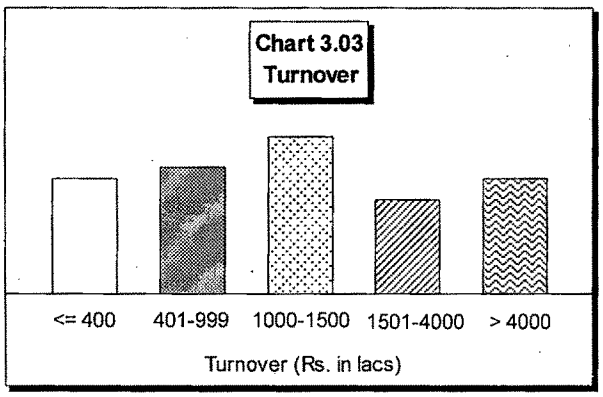


Table 3.04
Average Annual Turnover

Turnover (Rs. in Lakhs)	Percent
≤[1] 400	19.0
401-999	20.7
1000-1500	25.9
1501-4000	15.5
>[2] 4000	19.0
Total	100.0

Turnover varied between Rs. 100 lakhs to Rs. 20,000 lakhs. It depends on various factors such as number of value added products, destination countries, the firm's financial condition and skilled personnel. More than 60% of the fish processing units have a turnover of less than Rs. 1,500 lakhs. The top 15% units have a market share of as much as 60% whereas 85% of the units have only 40% of the total share. Hence, there is a gross inequality in the market share of the processing units.

[1] ≤ means less than or equal to
[2] > means greater than

The turnover can also be classified by locations.

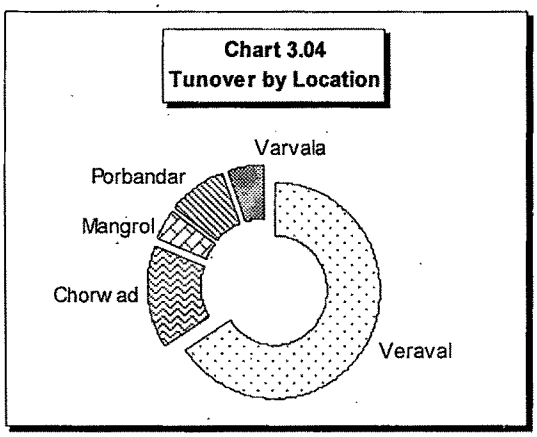


Table 3.05
Turnover by Location

Location	Turnover (Rs. in Lakhs)
Veraval	108236
Chorwad	25000
Mangrol	8000
Porbandar	14100
Veraval	9000

The data shows that Veraval centre has the highest turnover, of Rs. 1,08,236 lakhs, because the majority of fish processing units are located here. For four centres of Chorwad, Mangrol, Porbandar and Varvala, the turnovers recorded are Rs. 25000, 8000, 14100 and 9000 lakhs respectively.

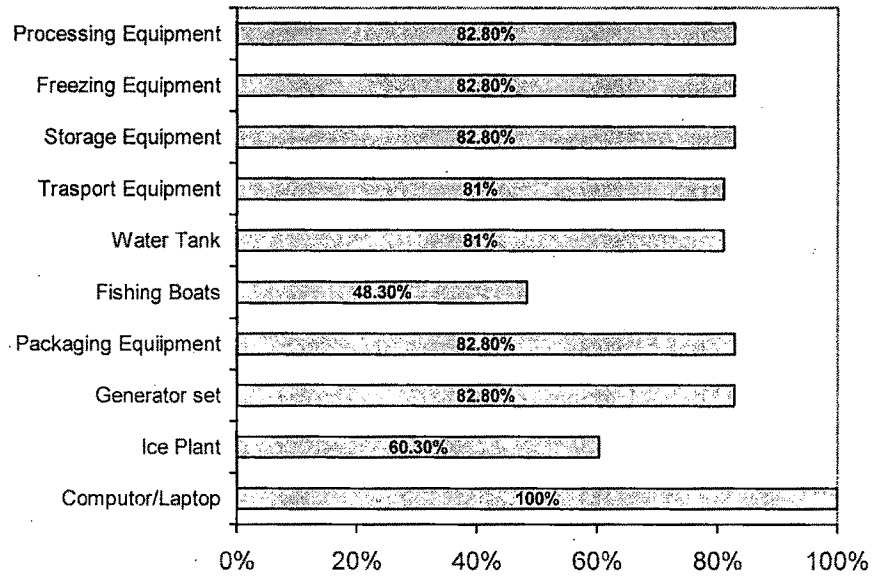
3.12 Ownership of Processing Equipments

Generally 10 types of facilities are required for establishing a fish processing plant. These are as follows:

1. Processing Equipment
2. Freezing Equipment
3. Storage Equipment
4. Transport Equipment
5. Water Tank
6. Fishing Boat
7. Packing Equipment
8. Generator set
9. Ice Plant,
10. Computer/laptop

Most of the equipments are generally owned by all the units. Details are as shown in the chart:

Chart 3.05
Ownership of Processing Equipments / Facilities



In remaining cases, the units hire these facilities. Without these facilities, it would be impossible to carry out any processing activity.

3.13 Product Range

Development of new products is vital to the success and sustainability of a firm this also has an impact on the profitability. However, in case of fish, this will also depend on the availability of the raw material. Fish processing units deal with the following product range mainly.

Chart 3.06
Product Range

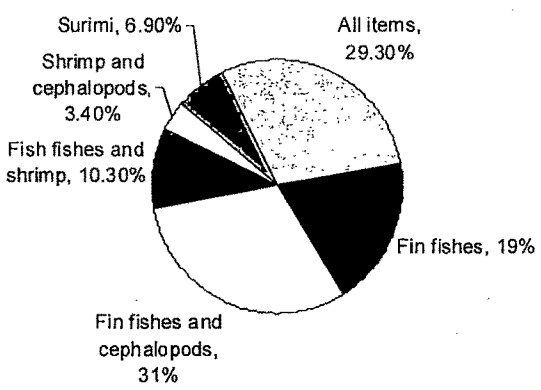


Table 3.06
Product Range

Product Range	Percent
Fin fishes	19.0
Fin fishes and cephalopods	31.0
Fin fishes and shrimp	10.3
Shrimp and cephalopods	3.4
Surimi	6.9
All items	29.3
Total	100.0

About 19% of the fish processing units deal with Fin fishes, 31% with Fin fishes and Cephalopods, 10.3% with Fin fishes and Shrimp, 3.4% with Shrimp and Cephalopods, 6.9% with Surimi, and 29.3% with all items. These are those products for which the fishes are available along the Gujarat coastline. Hence, the availability of raw material determines the product range.

3.14 Employment

It is also important to understand to what extent the industry has been able to generate employment. The fish processing industry is a means of livelihood for thousands of families in Gujarat. It was reported that more than 12,000 people are directly employed in Gujarat alone. The category-wise break up is as under.

Chart 3.07
Category-wise Employment

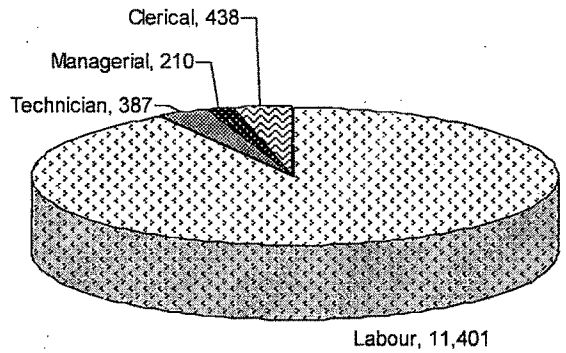


Table 3.07
Category-wise employment in Gujarat fish processing sector

Category	Employment
Labour	11,401
Technician	387
Manager	210
Clerk	438
Total	12,545

The fish processing industry is labour intensive. The share of labour in total employment is 90%. It was found that fish processing units were very hesitant to give information about labour. This may be for fear of labour officers who visit the plant and harass them and ask for the bribe. For instance, a fish processing unit reported number of labourers to be around 1000 whereas it was found through the Association that the actual number of labourers employed was 1800. Similarly, another fish processing unit reported 450 instead of 850 labourers. This was especially true in case of large organizations. Hence, the data related to unemployment are gross underestimates.

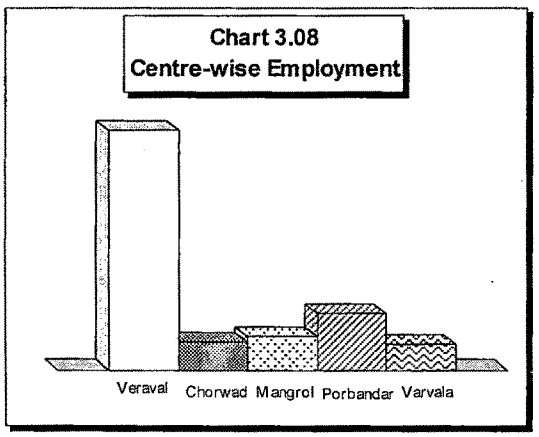


Table 3.08
Centre-wise Employment
in Gujarat Fish Processing Sector

Centre	Employment
Veraval	7868
Chorwad	901
Mangrol	1105
Porbandar	1853
Varvala	818
Total	12,545

Looking at the data on centre-wise employment, 7868 people were employed in all the processing units in Veraval, 901 in Chorwad, 1105 in Mangrol, 1853 in Porbandar and 818 in Varvala. The highest employment is in Veraval, followed by Porbandar. The average employment was found to be 216.

3.15 Relationship between Product and Employment

An attempt is made here to understand if there existed any relationship between the type of product and employment generation. The results of one way analysis of variance are shown in the below table.

Table 3.09
One-way ANOVA Table
[Total Number of Employees]

	Sum of Squares	D. f.	Mean Square	F	Sig.
Between Groups	677928.06	5	137585.611	5.126	.001
Within Groups	1395716.0	52	26840.692		
Total	2083644.0	57			

Total Number of Employees

Product Range	N	Mean Turnover
Fin fishes	11	90
Fin fishes and Cephalopods	18	145
Shrimp and Cephalopods	2	167
Fin fishes and Shrimp	6	216
All items	17	322
Other (Surimi and Crabsticks)	4	453

The F-value was found to be significant, indicating employment differs from product to product as shown in the above table. Hence, it is important to identify the products generating higher level of employment compared to others. It was found that units processing Surimi and Crabsticks generally employ more workers than any other product.

Regression analysis technique was used to understand the relationship between turnover and employment.

The model is:

$$\gamma = \alpha + \beta\chi$$

Employment = 117.095 + 0.03501 Turnover

t = (5.601)*[3] (8.209)*

r^2 = 0.546

The results of the regression analysis show that F-value was found to be significant. It indicates a positive relationship between turnover and employment. As turnover increases, employment also increases. The coefficient for turnover is 0.03501. So, every unit increase in turnover results into an increase in employment by 3.50 units holding other variables constant. Even if the turnover was zero, the average employment would be 117 people. Of course, such mechanical interpretation of the intercept may not be meaningful. However, in case of employment, one could argue that even if turnover is zero (due to off

[3] Note: * , ** and *** indicate level of significance at 1 per cent, 5 per cent and 10 per cent respectively.

season), fish processing unit may employ some people for security of processing unit or hire labour for repairing and maintenance work in the unit. The value of R^2 was found to be 0.546, indicating that 54 per cent variation in employment is explained by turnover.

3.16 Wages

Employee satisfaction is important in an organization because it is what productivity depends on. If the employees are satisfied, they would produce superior quality performance in optimal time and lead to growing profit. Satisfied employees are also more likely to be creative and innovative and come up with breakthrough that allows firm to grow and change positively with time and changing market condition (Layne, R., 2009). Employees play an important role in production, through their ability and performance. Wages are the most effective way of increasing industrial productivity. Details of wages and salaries in the Gujarat fish processing sector are as under.

Fish processing industry mainly uses women labour. There is a preference for Kerala women in the sorting and prawn peeling sheds in Gujarat, Maharashtra, West Bengal and even neighbouring Karnataka. Women from Kerala are believed to be disciplined, efficient, clean and also possessed a certain degree of education (Ramaswamy, V., 2000). In addition, they are ready to work at prevailing wage rate. Fish processing units generally hire these women on contract basis. The argument put forward for this nature of employment is that fish processing is seasonal in nature. 95% of labourers earned between Rs. 2000 to 3000 per month. Wages paid to the labour were in the range of Rs. 1800 to 3600 per month. The average wage was Rs. 2576 per month. However, this is slightly lower than the prescribed norms.

The minimum wages determined as per the minimum wage Law was Rs 2592 for the survey period. (Government of India, 2008) Accordingly it was found that, 44.8% of the units did not pay even minimum wage to their labour. Working conditions are poor and wages received by the women are comparatively

low. These women have no local support and are compelled to live in ghetto-like conditions (sometimes with just two toilets for 50 women) (Ramaswamy, V., 2000).

The freshness of fish products has to be maintained until it reaches the consumers. This is legally mandatory. It is for this reason that the units have to hire technicians to inspect the quality of fish during procurement and before shipment. More than 85% of the technicians received salaries between Rs.3000 to 9000. Technician salary varied from Rs. 3000 to 15000 per month. The average technician salary was found to be Rs. 7263 per month. Smaller units with low turnover paid low salaries whereas those in the larger units received higher salary.

The manager salary also varied from Rs. 8000 to 50000 per month depending on the size of the unit. The average salary of the manager was found to be Rs.19775 per month.

3.17 Non-Technical Staff Salaries

Non-technical staff includes clerk, accountant, peon, receptionist and watchman. The non-technical staff salary varied from Rs. 2000 to 20000 per month. The average non-technical staff salary was found to be Rs. 3896 per month.

3.18 Working Days

The number of working days varies from 170 to 300 in a year. On an average, fish processing units worked for only 244 days in a year. Fishing is banned from June 10 to August 15. This means fish processing units remain idle for 65 to 195 days in a year.

3.19 Processing of Final Product

Fish processing units purchase raw fish to make the final product. Purchase of raw fish varied from 150 tons to 30,000 tons a year. The average fish purchased was 5187 tons a year.

Raw fish is processed into finished products, according to buyers' requirement, when some parts of the fish have to be removed. So, the fish processing plant may not get 100% yield. The processed quantity is always less than the purchased quantity. The average processed fish quantity was 4006 tons a year. The average wastage was 3682 kg per day.

3.20 Waste Utilization

As global fish production is unlikely to keep in step with demand, an increased export demand is likely to be felt by fish exporting nations, like India. This is likely to reduce the availability of processed fish food for domestic consumption. The country should, therefore, prepare itself through multi-pronged efforts. A commitment for total utilization of fish, by minimizing wastage and spoilage at every stage is called for (Datta, S., 2001).

In case of fish processing the wastage rate is as high as 75%. The minimization of this waste and achievement of total usage of fish is extremely essential in fish processing, as suggested by Datta S. Raw material is costly and it is uneconomical to throw it away. Thus, efficient utilization of waste is necessary when demand and supply gaps are widening.

The present study attempted to assess the magnitude of this waste, its use, and the economics of waste utilization in Gujarat's fish processing sector.

Does amount of wastage differ for each product? To understand this, an analysis was undertaken. As is mentioned earlier, processing units deal with six main types of products i.e. Fin fishes, Fin fishes and Cephalopods, Fin fishes and Shrimp, Shrimp and Cephalopods, Surimi and Crabsticks and other items.

Table 3.10
Product and Wastage

		Wastage (in tons / year)					Chi-Square Test		
		0	≤ 1000	1001-5000	>5000	Total	Value	Df	Asymp. Sig. (2-sided)
Product range	Fin fishes	8 (72.7%)	3 (27.3%)	0 (0%)	0 (0%)	11 (19%)	53.056	15	0.000
	Fin fishes and cephalopods	2 (15.4%)	15 (83.3%)	1 (5.6%)	0 (0%)	18 (31%)			
	Fish fishes and shrimp	2 (33.3%)	4 (66.7%)	0 (0%)	0 (0%)	6 (10.3%)			
	Shrimp and cephalopods	0 (0%)	2 (100%)	0 (0%)	0 (0%)	2 (3.4%)			
	Surimi and Crabsticks	0 (0%)	0 (0%)	3 (75%)	1 (25%)	4 (6.9%)			
	All items	1 (5.9%)	10 (58.8%)	6 (35.3%)	0 (0%)	17 (29.3%)			
	Total	13 (22.4%)	34 (58.6%)	10 (17.2%)	1 (1.7%)	58 (100%)			

The table reveals that 19% of the fish processing units were dealing in Fin fishes. Of these, 72.7% of produced no wastage, 31% of the fish processing units deal with Fin fishes and Cephalopods. Of these 15.4% produce no wastage; About 10.3% of the fish processing units deal in Fin fishes and Shrimp. Of these 33.3% produced no wastage About 3.4% of the fish processing units deal in Shrimp and Cephalopods. All units produce wastage. 'About 6.9% of the fish processing units deal in Surimi and Crabsticks. All the units produced wastage. About 29.3% of the fish processing units deal in all items. Of these, 5.9% have no wastage. This shows that wastage differs from product to product. Surimi and Crabsticks have the highest wastage, whereas Fin fishes have the lowest. The results of the Chi-square test show a significant value between product and wastage, as can be seen in the table.

22.4% of the units reported no wastage. Among those units that reported wastage (77.6%), a majority (65.5%) of them do not reprocess their wastage and only 8.6% reported reprocessing it. As much as 3.4% of the fish processing units reported partial reprocessing.

There is some potential for gaining more value from fish waste. It is rich in valuable minerals, enzymes, pigments and flavours that are required by many

industries including food, agriculture, aquaculture and pharmaceuticals. Possible alternatives include hydrolysate from silage production, which has potential in livestock feeding, and the production of chitin and chitosan from crustacean waste, which have many commercial uses including in water and effluent treatment and as food additives. Fish waste can also be utilised in the production of organic fertilisers and composts, which have significant benefits over chemical-based products (Anon., 2005). 11.1% fish processing units in Gujarat make products like Chitosan, Fish powder/ Fish meal, Dry fish from their wastage by reprocessing them. 84.4% fish processing units directly sell their wastage to dry fish traders.

The raw-material purchased by fish processing units was 3,00,870 tons, whereas they were able to export only 2,32,370 tons, as per 2006-07 data (75%). About 25% of the total fish catch was wasted in this way. The raw-material is both costly and scarce, necessitating the minimization of waste.

At an FRDC workshop in 2001, seafood industry leaders discussed ways to improve the utilisation of fish waste by investigating techniques to process the waste into products such as aquaculture feeds, silage, fertilisers, fish-mince, and fishmeal. It was deliberated that processing the waste into valuable fertiliser products was the option that was most feasible at that point in time. This option suited the particular requirements of the processors and the raw product that they produce: it could utilise the bulk of the fish waste and prove cost-effective given the relatively low volume and wide geographical area covered by the seafood industry (Knuckey, I. et al, 2004).

To sum up, fish export from Gujarat started in 1972, due to mechanization. However, about 90% of the fish processing units were established only after 1991, due to globalization. Of these, most units were established in Veraval, due to better availability of raw-material.

As world-wide demand for fish products increased, so also the turnover, capacity, number of fish products, and employment in the fish processing sector

of Gujarat also increased. At present, the fish processing units make a hundred fish products. They make ready-to-eat fish products from conventional block frozen fish, and export them to more than 70 countries, earning foreign exchange worth Rs. 1,264 crores. Gujarat contributes 26% share in India's total fish export.

Section - II

Problems Faced by the Fish Processing Industry of Gujarat

The fish processing industry depends on raw material. The problem of inadequate raw material was ranked first among 13 problems by fish processing units. Therefore, a detailed study on this issue has been undertaken.

The supply of the raw material i.e., fish is uncertain and depends on nature. Against this, the number of fish processing units has been increasing over the years.

27.6% fish processing units were able to get raw material at reasonable prices, whereas 72.4% did not. Further, Thomas K. reported that there has been a steep increase in raw material prices over the past five years, as compared with the average increase in the past thirty-five years. This is mainly due to sudden increase in processing units in the area, particularly in Veraval, and due to other factors like increased capacity in existing units, and movement of raw materials to processing units in other states. Though raw material prices have been rising, export prices have not gone up in the same proportion. This means that profitability has come down; in fact many exporters sustained losses, mainly due to high raw material prices (Thomas, K., 2003).

The most common reasons cited for not getting raw material at reasonable prices were poor fish landing and high competition in getting raw material (65.5%), suppliers keeping the prices at high level (1.7% of the respondents), and decrease in fish stock due to change in climate and global warming (5.2%).

The landing of fish fluctuates widely during the year. When fish landing is more, the price is low and vice versa.

Table 3.11
Sources of Raw Material

Sources of Raw Material	Percent
Local market	15.5
Combination of local and state market	62.1
Combination of local, state and national market	17.2
Combination of local, state, national and international market	5.2
Total	100.0

Fish processing units have to resort to as many sources as possible for getting enough raw material. Fish processing units procure raw-material from local markets, state markets, national markets and international markets, or a combination of these. The majority of fish processing units (62.1%), sourced their raw material from local and nearby markets.

It was found that 45 fish processing units purchase fish directly from fishermen. The percentage share varied from 5% to 100%. Other sources included commission agent and fish co-operatives.

Each of these sources has its own advantage. Fish purchased fish from the fishermen is cheaper compared to that purchased through the commission agents. Despite this, some fish processing units prefer to buy fish from commission agents for bulk purchase and this also ensures regular and constant flow of raw material.

More than 85% of the fish processing units purchased fish from nearby landing centres. Fish processing units reported three main advantages of buying fish from this. There was (i) adequacy of raw material (51.7%), (ii) cheaper price (29.3%), and (iii) good quality of raw material (39.7%).

Uncertain availability and high prices were the main problems in procuring fish, as reported by about 95 % of the fish processing units. "In addition to this, fish suppliers bargain intensively with them. The fish suppliers demand for higher price every time and it has become very difficult for them to convince the suppliers on the changing situations in the market" (Rama Mohan Rao, K., and Vijaya Prakash, D., 2000). Sometimes, fish processing units had an order, but there was no fish landing.

Fish processing units faced a few problems in getting packing material. Four units faced difficulties in getting packing material, such as unavailability of attractive material (3.4%), high price (1.7%), and delay (1.7%). One unit reported that only one eight-colour printer was available in Gujarat, leading to delays, besides high charges due to monopoly. Hence, procuring fish and packing material is a problem for a large number of units.

Table 3.12
Mode of Procuring Raw Material

Sources	Responses		Percent of cases
	N	Percent	
Company Personnel	47	32.9	81.0
Friends and Relatives	13	9.1	22.4
Existing Supplier	44	30.8	75.9
Convincing the Competitor's Suppliers	20	14.0	34.5
Own Boats	19	13.3	32.8
Total Responses	143	100.0	246.6

Note: The percentage figures are more than 100 owing to multiple responses.

Easy and timely availability of raw material is necessary for non-stop production activity. Fish processing units built a chain through company personnel, friends and relatives, existing supplier, and through their own boats. Company personnel and existing supplier are the main means of getting raw material.

For smooth supply of raw material, the relationship with fish supplier is important. The mode of maintaining this relationship varies among the fish processing units.

Table 3.13
Mode of Maintaining Relations with Fish Suppliers

Mode	Responses		Percent of cases
	N	Percent	
By Offering Advance Payments	17	15.3	29.3
By Quick Payment	42	37.8	72.4
By Offering Competitive Price	48	43.2	82.8
Personal Rapport / Perk Weight	4	3.6	6.9
Total	111	100.0	191.4

Offering a competitive price (82.8%) is the main mode of maintaining relations with fish suppliers, followed by quick payment (72.4%), and offering advance payments (29.3%).

More than 50% of the fish processing units found it difficult to get raw material for the reasons such as poor fish landings, heavy competition, pollution at sea, unaffordable deep sea fishing, high raw material price and overfishing.

29.3% of the processing units offering advance payment to fish supplier were able to get a regular supply of raw-material whereas 70.7% could not. Processing units also maintain relations by offering higher price than the prevailing market price.

"There is stagnation in the marine fish catch, in recent times. However, catch from freshwater bodies, particularly from aquaculture, is increasing. During the last decade, the growth in inland fish sector to the tune of 6.5%. Asia is contributing to about 90% of the world's aquaculture production. China is the leading country in aquaculture production, followed by India. At present, in India, the contribution of marine fish and shellfish in export is more than 90% and freshwater resources less than 10%. There is enough scope in future to increase

the share of fresh water fish and shellfish (inland fish) in export" (Badonia, R. et al, 2003). However, fish processing units did not source inland fish for export. The reasons for this mainly include no demand for the products abroad and even if there is demand, the price is extremely low.

To sum up, raw material is the oxygen for the fish processing sector. It was found that raw-material availability was less as compared to actual demand, leading to increase in its price. To get enough raw-material, the fish processing units have started buying raw-material from nearby fish landing centres, as well as by owning fishing boats. However, 53.4% of the units did not get enough raw-material owing to tough competition. There were three natural sources of raw-material, viz. marine, inland and aquaculture. Most fish processing units (95%) were getting raw-material from the marine source only. Therefore, there is scope for using inland and aquaculture sources.

Section - III

COMPETITION

Neoclassical economists argued that competition promotes static efficiency. On the other hand, Schumpeter and others, pointed out that monopoly rent induces entrepreneurs to invest in R&D and thus promotes dynamic efficiency. Hence, the mechanisms alluded to are quite different and the overall effect of competition becomes an empirical issue. Nickell (1996) finds some support for the view that competition improves performance, but the evidence is not overwhelming. Aghion et al. (2001, 2002) and Boone (2001) argue that the relationship between competition and innovation is non-monotonic.

It is very important for business management to gain a proper understanding of the nature and process of competition in the modern industrial society. First, the management should understand the rationale of free enterprise system within which its own business decisions have to be made and the purpose,

aims and limitations of that system. Secondly, it must have full knowledge of the markets in which its own business operates and of the policies appropriate to those market situations. Thirdly, it is necessary to have an understanding of competitive process and how the variables in the process-price, product innovation and promotional activity-may be manipulated in enlarging the firm's market share. Fourthly, the firms having monopoly power should be familiar with the nature and the purpose of the law relating to monopoly and restrictive practices. What is more important, the management must also be alert and recognize when market conditions change. Although there is no substitute for the intimate knowledge of the ways of the competitors acquired by experienced executives, an understanding of the nature of competition can provide an insight into the probable behaviour patterns of the competitors.

Therefore, the objective of this section is to identify whether fish processing units face competition; whether competition is increasing; who the competitors are;, where they are located and what efforts are made by the firms to meet these challenges of competition. The present section is aimed at answering these questions.

All fish processing units reported that they were facing competition. Of these, 86.2% reported facing very tough competition, while 13.8% reported facing relatively less competition. In general, the firms in the fish processing industry face competition.

All the units reported that competition had increased during the last 10 years. This was mainly attributed to the recent policy changes whereby there is an improved accessibility at the global level. Hence, it can be said that the process of globalisation has resulted into intense competition. Fish processing units reported to be facing competition from large scale producers (31%).

Due to a high concentration of the industry in the region the competition is mainly local. Of all the units, 41.4% reported that their competitor's products were superior. This was reported by most non-EU fish processing units i.e., those

firms that have not adopted EU quality standard face more competition. Hence, the competition is mainly on grounds of quality.

Table 3.14
Reasons for Competitors' Products Being Superior

Reasons for Competitors' Products Being Superior	Responses		Percent of cases
	N	Percent	
Low Raw-Material Cost	11	11.1	19.0
Better Quality of Products	18	18.2	31.0
More Advanced Machinery	8	8.1	13.8
Lower Transportation Cost	1	1.0	1.7
Labour Efficiency	9	9.1	15.5
Selling and Marketing Organization	12	12.1	20.7
Cheap Banking and Credit Facility	6	6.1	10.3
Not Applicable	34	34.3	58.6
Total Responses	99	100.0	236.2

The reasons for competitors' products being superior included low raw-material cost (19.0%), better quality of products (31.0%), more advanced machinery (13.8%), lower transportation cost (1.7%), labour efficiency (15.5%), selling and marketing organization (20.7%), and cheap banking and credit facility (10.3%). Better product quality and sales and marketing organization are the two main reasons for competitors' products being superior. Hence, in addition to the quality of product organisational skills play an important role in facing the challenges of competition.

Table 3.15
Effort to Meet Competition

Effort to Meet Competition	Responses		Percent of cases
	N	Percent	
By Maintaining and Improving quality	42	42.5	72.4
Buying Raw-material Cheaply and Selling of Product at Best Possible Price	11	11.1	19.0
By Product Specification / By Procuring Other Fishes / By Better and More VAP	16	16.2	27.6
By Better Packing	8	8.1	13.8
Trained to Labour / Increased Labour Efficiency	3	3.0	5.2
By Reducing Cost	10	10.1	17.2
By Procuring Raw-Material by Own Fishing Boats	3	3.1	5.2
Hired Skilled Manager	5	5.1	8.6
No Response	1	1.0	1.7
Total Responses	99	100.0	170.7

Most of the fish processing units reported difficulty in coping with competition. However, efforts have been made by these units to overcome competition by maintaining and improving quality (72.4%), buying raw-material cheaply and selling products at best possible price (19.0%), by producing more VAP (27.6%), adopting better packaging (13.8%), improvement in labour efficiency by hiring trained labour (5.2%), by reducing cost (17.2%), by procuring raw-material by own fishing boats (5.2%), and hiring skilled managers (8.6%). Hence, various approaches to meeting challenges include improvement in quality of the products and cost efficiency.

3.21 Conclusions

This chapter deals with profile of fish processing industry in Gujarat and the problems faced by this industry. World-wide demand for fish products has increased. this has given a boost to the fish processing industry. Gujarat contributes 26% share in India's total fish export.

There has been an enormous increase in the number of units over a period of time. the total turnover, capacity, number of fish products, and employment in the fish processing sector of Gujarat have also increased. At present, the fish processing units make a hundred fish products and export them to more than 70 countries, earning foreign exchange worth Rs. 1,264 crores.

Presently, fish processing sector faces a number of problems related to raw material and keen competition. It was found that raw-material availability was less as compared to actual demand, leading to increase in its price. Competition has increased due to crowding of fish processing units.

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Notes

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[1] The value of location quotient indicates the degree of relative concentration of an industry in the particular district. If the value of the location quotient is unity for any industry, then it can be inferred that the proportion of employment in that industry accounted for by the district is identical with the proportion of employment in all industries taken together in the State accounted for by the district. If its value is more than unity for a particular industry, it indicates relatively greater concentration of that particular industry group in the district as compared to the concentration of the all industries taken together in the district. The lowest value of location quotient is zero, and it indicates that there is not a single worker employed in that industry in the district.

[2] The coefficient of localization for an industry indicates the relative tendency of that industry towards localization. The coefficient of localization of an industry is calculated by summing up over all districts the positive deviations of the percentage share of each district in the State total workers in that industry from

the corresponding percentage share of the district in the State total workers in all industries taken together.

Coefficient of localization, can take any value between 0 and 1. If an industry is spread over all the districts of the State in such a way that the share of each district in employment in that industry is the same as that for all industries taken together, then the coefficient of localization will be zero. If the dispersion of the industry over the districts in the State is large, that is, if the employment in the industry is relatively more concentrated in a few districts, as compared to that for all industries taken together, the coefficient of localization will tend to unity. The coefficient of localization for an industry indicates the degree of relative concentration of the particular industry in some districts as compared to the concentration of all industries taken together in those districts.