

# DIVERSIFICATION IN FROZEN FISH EXPORT FROM GUJARAT

coast is quite high. Marine fish landing along this coast during 1985-86 was 3.06 lakhs tonnes. This include substantial quantity of quality fish like Pomfret, Hilsa, Seer etc., and a wide range of other varieties (Table 2) Pomfret is already an established item of export. Several other fishes that can be profitably exploited are given in Table 3.

Basic infrastructure to meet the requirement of diversification already exists, Gujarat is having installed capacity 250 Tonnes/Day for freezing sea foods in 18 fish processing units mainly at Veraval and Porbunder. Frozen storage capacity of 5,000 Tonnes is available.

Shark fishing is done for 4-5 days in deeper waters off Veraval and Mangrol using shark gill nets and hook and line. At present the fish is kept on deck hold without ice and much care and by the time it is landed the quality of fish deteriorates drastically. Hence major improvements in handling the fish on board is essential to obtain quality products. It is essential that fish is iced properly soon after catch. High concentration of urea in shark meat adversely affects storage life and consumer acceptance of the products. Removal of blood immediately after the fish is caught, by cutting off the tail, will reduce the level of urea in meat. If this is not possible on board,

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the level of urea can be brought down to acceptable limits by suitable treatments of the fillets during preprocessing stages.

It had been reported elsewhere that shark has got the tendency to accumulate mercury in its tissue. But dangerous levels of mercury had not been detected in the common species of shark landed here.

#### RIBBON FISH

This group consists mainly two species *Trichiurus* and *Lepturacanthus* and landing is over 7,500 tonnes/year. The fish is available through out the season. Almost the entire quantity is going for drying. There is good demand for this fish from U. S. A., Japan and middle east countries. The buyers requirements are varying like Headless, Tailless, Guttled or whole fish Frozen in hook or 'J' shape. Ribbon fish is a lean fish and therefore have reasonably long storage life.

#### SCIENIDS

Another major resource which has not been fully and economically utilised is the scienids, comprising mainly of *otolithus* and *johnius* species, locally known as 'Dhoma'. Quantity landed is very high over 1 lakh tonnes/year. At present most of it is cured, dried or used for fish meal. Dhoma is a lean fish and has good frozen storage life. Colour of the meat is white hence excellent appearance. Mince from Dhoma, especially small fish which are not suitable for freezing can also be processed into various products which will have good demand in the interanal markets also.

#### JEW FISH (*Protonibea diacanthus*)

It is one of the important varieties of fishes available along this coast. Its annual landing is about 7,400 tonnes and

Jafrabad Nawabunder and Okha etc. main landing centres, Fillets and Headless Jew fish has been an item of export in the past few years and has good demand in many countries. Fish grows upto 20 kg in weight and meat colour is white.

Shelf life of frozen fillet of this fish at -18°C has been found to be over 6 weeks. An important point to be taken care of is that the unsatisfactory conditions of handling, storage etc., of fish before freezing will result in excessive drip loss and considerably reduce shelf life.

Air bladder from this fish is a valuable item of export. Proper care in extracting, washing, cleaning and drying of the bladder will improve the quality of the final products.

**Cat fish.** This fishery comprises mainly of *Tachysurus* species. Quantity landed during last year was 10,500 Tonnes. At present the fish is consumed in fresh/iced form in the internal market. It had been observed that during summer months the uniced fish get spoiled very rapidly and to avoid this, gutting and icing of the fish is essential. The fish can be frozen whole or as fillet with average shelf life of 6 weeks. Air bladder of this fish has already good market. Eggs of cat fish can also be processed into attractive products.

**Eel** Two species of *Muraenesox* and one species of *Gymnothorax* are commonly found along this coast. About 4000 tonnes is the annual landing. Presently consumed in fresh/iced form in internal market. Frozen fillets and chunks, smoked fillets etc. may be prepared from this fish. Air bladder from eel also fetches good price.

**Perches** This group includes over 30 varieties which are very important from

export point of view. Some of these are already exported to Greece, Hongkong, U. S. A., and the middle East. Fishes are frozen as whole, Guttled, fitted and slices. For whole fish the grading is under 1 kg up to 8-10 kg per piece, with 1 kg gradient. Freezing and frozen storage of perches do not pose any special technological problem.

#### OTHER VARIETIES

Many other varieties of fishes like Indian salmon (Rawas). Thread fin, Leather jacket, Indian Halibut (sole), clupeids etc., are commercially important. Landings of these fishes along Gujarat coast is substantial. Many of these are considered to be quality fishes but these resources are not properly exploited at present either for internal market or for export. Recently good catches of octopus. (*O. indicus*, *O. Cyaneus* & *O. membranaceus*) have been observed on this coast. Export of this in frozen form can also be worth while,

#### CONCLUSION

The export of frozen fishes in recent

years have picked up substantially. Singapore has emerged as major buyer followed by Japan, Taiwan, Hongkong, Middle East and U. S. A., (Marine Products Export Review 1986-87). The need for diversification of the items for export had been felt since long. By diversifying, the optimal use of under exploited marine resources of E. E. Z. and deep sea can be achieved.

#### ACKNOWLEDGEMENT

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#### REFERENCES

- 1) Gujarat Fisheries Statistics 1987  
Published by Gujarat Fisheries Information Centre, Ahmedabad.
- 2) Sea Food News Letter, Vol. 79, No. 4, March 15, 1988.
- 3) Marine Products Export Review 1986-87  
MPEDA Publication.

Table 1  
EXPORT OF FROZEN FISH

Country	Quantity in Tonnes		Value in Rs. Lakhs.	
	Quantity 1986-87	Value	Quantity 1985-86	Value.
Singapore	5,567	734.93	841	149.64
Japan	2,699	691.06	1,124	312.66
Taiwan	2,578	320.17	3,717	427.12
Kuwait	789	197.97	1700	349.37
Hongkong	376	59.71	577	82.36
Malassia	255	48.29	1,388	214.02
U. A. E.	79	15.18	706	112.42
U. S. A.	152	35.85	68	8.53
Others	643	125.85	440	58.86
Total	13,138 Tonnes	2229.01 Lakhs.	10,561 Tonnes	1714.98 Lakhs.

\*Source-Marine Products Exports Review 1986-87.

Table 2  
FISH LANDING IN GUJARAT

Quantity in Tonnes

Fish	1984-85	1985-86
Ribbon fish	5,576	7,483
Jaw fish (Ghol)	7,457	7,408
Scienids (Dhoma)	81,396	1,07,818
Sharks	10,769	10,290
Silver Bar (Dai)	5,201	5,474
Eel	2,699	4,072
Clupeids	9,755	8,928
Cat fish	9,556	10,598
Perch	1,418	1,088
Leather Jacket	2,520	1,159
Indian Salmon (Rawas)	1,453	1,410
Total Landing including other varieties.	2,90,708	3,06,577

\*Source-Gujarat Fisheries Statistics 1987.

Table 3  
LIST OF FISHES

Sl. No.	Scientific Name	Popular Name	Local Name
1.	Scolidon sp	Dog shark	'Magra', 'Musi'
2.	Carcharhinus sp	Black, Grey, Shark	'Magra', 'Musi'
3.	Galeo Cerda	Tiger shark	'Patari'
4.	Sphyrna	Hammer headed shark.	'Kanner'
5.	Rhynchobatus	Shovelnose Ray	'Dhos', 'Bhuther'
6.	Rhincodon typus	Whole shark	'Barrel'
7.	Mobula diabolus	Devil Ray	'Varala'
8.	Raja sp	Skate	'Tarbala'
9.	Protonibea diaconthus.	Jew fish	'Ghol'
10.	Otolithus biauritus	Dori	'Koth'
11.	Johnius	Croaker	'Dhoma'
12.	Otolithus	Croaker	'Dhoma'
13.	Chirocentrus dorab	Silverbar, wolf Herring	'Dai'
14.	Trichiurus, Leptura canthus	Ribbon fish	'Bagga' 'Patti' 'R Lapdi'.

15.	Tachysurus sp	Cat fish	'Khagga'
16.	Muraenesox, Gynnothorax.	Eel	'Vam' 'Nara'
17.	Ilisha	Shad	'Kati' 'Palvi'
18.	Opisthopterus	Razor edge	'Kati'
19.	Peliona ditchela	Indian Pellona	'Kati'
20.	Saurida tumbil	Lizard fish	'Chor Bumla'
21.	Epinephelus sp	Reef cod, Perch, Grouper	'Vekhi', 'Vekhi'
22.	Lutianus sp	Snapper	'Ratdo', 'Gurkna', 'Gulal', 'Raja'
23.	Chorysophrys sp	Sea bream	'Timra', 'Chayo'
24.	Pomadasys sp	Grunter	'Karkara', 'Koke'
25.	Eletheronema	Indian Solmon	'Rawas'
26.	Polynemus indicus	Thread fish	'Dara'
27.	Scomberoides lysan	Leather jacket	'Shag'
28.	Psettodus	Indian Halibut flounder sole	'Haria'
29.	Nemipterus Japonicus	Red perch	'Rani'
30.	Euthynnus affinis	Little Tuna	'Gedra'

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