

INTERNATIONAL TRADE IN SEA-CUCUMBERS

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ABSTRACT

The international trade in sea-cucumber is limited to countries in Southeast Asia, Japan and in a few countries where there is substantial ethnic Chinese population. The best price is paid for processed products such as dried gonads, salted fermented intestine (Konowata), dried body meat (trepang or *beche-de-mer*) and excised longitudinal muscles. The major volume of the trade is on dried *beche-de-mer*. Singapore, Hong Kong and Malaysia are the principal trade centres. In Japan, they are consumed fresh and the supplies are mainly from domestic sources. Indonesia, Philippines, Japan, Korea (DPR), Sri Lanka, India, Africa and Oceania are the major suppliers of dried sea-cucumbers. Out of the import of 6453 tonnes into Hong Kong, Singapore and Malaysia during the year 1986, the contribution from India was only 33 tonnes valued at Rs. 38.04 lakhs. Indonesia, Malaysia and Philippines were the major suppliers. This is because of the ban on export of *beche-de-mer* below 3" (7.6 cm) which formed around 70% of our export before the ban. However, our export of dried *beche-de-mer* scaled to new peaks in 1987 worth of Rs. 82.34 lakhs in foreign exchange. Though we have been traditionally exporting this item to Hong Kong, Malaysia, Singapore, Taiwan, U. K. and USA, our export is now confined mainly to Singapore market. Since the trade on sea-cucumber has potential for further expansion, it provides enormous scope for culture / sea-ranching in the oceanic lagoons and Palk Bay area of the Indian seas and increase the production for export. This will pave way to provide employment to the fishermen and earn precious foreign exchange for the country.

INTRODUCTION

Beche-de-mer, another name for sea-cucumbers or holothurians are spiny-skinned animals of phylum Echinodermata. It is an important item of trade among the developing countries in the Indo-Pacific region. They are caught and processed into a Chinese delicacy and are popular in Singapore and Hong Kong. Their reputation as an aphrodisiac has undoubtedly enhanced its popularity.

There are over 650 species of holothurians, but only a few of them have commercial value. In the Indo-Pacific region one of the most valuable species is the teat-fish or mammy-fish *Holothuria nobilis* the length of which ranges from 300-400 mm. The live weight is from 2 to 3 kg. Since the thickness of the body wall is important to the final product, teat-fishes are valued for their thick 10-12 mm body wall.

Some of the more commercially exploited species include the following.

White teatfish *Holothuria fuscogilva*,

Black teatfish	<i>H. nobilis</i> ,
Sandfish	<i>H. scabra</i> ,
Blackfish	<i>Actinopyga</i> sp.,
Deepwater redfish	<i>A. echinites</i> ,
Prickly redfish	<i>Thelenota ananas</i> and
Surf redfish	<i>Actinopyga mauritiana</i>

Several species of holothurians such as *Holothuria scabra*, *H. spinifera*, *Bohadschia marmorata*, *B. argus*, *Actinopyga mauritiana*, *A. lacanora*, *A. miliaris*, *A. echinites*, *Thelenota ananas*, *Holothuria (Microthele) nobilis* and *M. axiologa* occur in Indian waters. But the industry is almost dependent on a single species viz. *H. scabra*. *H. spinifera* and *B. marmorata* contribute very little to the fishery. Their trade name varies from country to country and some of them are given below:

Burmese	Pan-le-pet-kye, Pin-lehmyaw
Danish	Spolse, Soagurk
German	Trepang, Seegurk
Greek	Holothuria - agouria, Tis thalassis

Hong Kong	Hoy sums
India	Kadal Attai (Tamil), Kadal Vellarikka (Malayalam)
Italian	Olothuria
Israeil	Saebjugu
Indonesian	Tripang, Teripang
Japanese	Namako
Malaysia	Trepang
Norwegian	Sjopolser
Dutch	Seekomkommer
Portugese	Holothuria
Thai	Plin khao
Turkish	Deniz hiyari
Yugoslavian	Morski Krastavac - trp.

The most common Indo-Pacific holothurian of commercial importance is the sandfish *H. scabra* characterised by white or light yellow bands and fine black dots on a greyish blue dorsal surface. The ventral surface is milky white in colour with fine black dots. It grows to a length of 300 to 400 mm. The body wall is 8 to 10 mm thick while wet weight varies from 500 to 1500 grams. The species is usually found in muddy and silty sand often near the estuaries where turtle-grass grows and where mangrove trees line the near shore. Juveniles are found near the shore while the adults are found in depths of 2 to 5 m. Sea-cucumbers are collected by divers in the inshore water by using a mask. The processing is carried out at the landing centre. The techniques for the handling and processing of sea-cucumbers are relatively simple.

INTERNATIONAL TRADE

The international trade in dried sea-cucumber is almost exclusively limited to countries of the Indo-Pacific region and to some extent to countries with ethnic Chinese Communities outside this region. The major markets for this product continues to be Hong Kong, Singapore and Malaysia. Peoples Republic of China is, however, the major consumer drawing supplies largely from its own domestic production. Imports by major markets consist almost exclusively of dried products. Only Japan is the major consumer of fresh product, but supplies are primarily from domestic sources. The USA also

imports dried *beche-de-mer*, for the Chinese population and restaurants. Taiwan Province of China is a growing market for *Stichopus japonicus*, *Actinopyga* sp. and *H. scabra*, but the demand is limited to a few sizes of these products, mainly the smaller ones. Although dried sea-cucumbers can be imported directly, the buyers in many countries prefer to import through Hong Kong, because of high import duties prevailing in other countries. Certain varieties of *beche-de-mer* have consumer preference over others. The white teatfish *H. fuscogilva* is generally preferred and fetch higher price in the international market. It is followed by Sandfish *H. scabra*. Separation into species, therefore, is essential in grading *beche-de-mer*. Size, appearance, odour, colour, moisture content and dirt content are other factors which determine the grade and price. Within a species, the larger the size, the better the grade and higher the price. The commercial sizes are the following :

4" - 6"	Large
3" - 4"	Medium
2.5" - 3"	Small grade I
2" - 2.5"	Small grade II
Below 2"	Very small

The dried *beche-de-mer* is packed in polythene lined gunny bags or coirmat sacks/jute-hessian sacks of 60 kg and 100 kg according to buyers requirements. Packed produce awaiting shipment should be stored in dry place. Since the product is exported in crude form, the importers clean and grade it further and re-export them in value added packs. In this process we loose substantial amount of foreign exchange.

Hong Kong : Hong Kong is the major market for dried sea-cucumber drawing supplies from Indonesia and the Philippines. The export volumes of Pacific Island countries notably Solomon Islands, Papua New Guinea and Fiji to Hong Kong have also increased considerably. The Statistics (Table 1) shows that Hong Kong imported 5896 tonnes of sea-cucumber in 1987 which was 13.5% higher than in 1986. The imports were down in 1984 due to recession. The average domestic consumption which was around

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TABLE 1. Imports of dried sea-cucumber into Hong Kong during 1984-88 (Quantity in Tonnes; Value in HK \$)

	1984		1985		1986		1987		1988 (Jan - Feb)	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Indonesia	1052.0	12951240	243.9	23767117	2472.0	34157909	2173.3	37281617	438.2	9227449
Philippines	1370.0	10690630	2954.0	32003078	1560.4	21036574	1934.0	21060374	247.3	3086716
Japan	17.0	4808634	21.0	6272827	67.7	16745928	55.0	14947251	6.3	1797485
Rep. of Korea	3.0	3470047	26.0	3942726	15.1	2663660	26.0	5312568	0.3	69397
Sri Lanka	-	-	1.4	145351	53.5	4330572	30.0	3082224	3.7	466440
Singapore	77.0	4692788	308.2	10927118	301.3	11937707	399.0	17719205	105.5	5704105
India	-	-	-	-	3.4	100776	12.4	517050	-	-
Africa	16.0	884663	30.8	878022	53.1	914760	44.2	1963000	2.5	165110
Oceania	79.0	3332565	13.1	481160	60.2	2360984	38.0	1658129	6.0	149299
Taiwan PC	3.0	215300	15.1	989698	44.4	1276774	7.0	245560	21.0	374420
PR China	15.0	301556	108.2	1473753	122.0	734165	269.0	4294253	4.0	49825
Macau	0.4	62175	3.3	160062	13.4	515933	2.7	446775	0.2	33700
Vietnam	22.0	402666	1.0	6150	0.7	11384	7.6	136000	-	-
Maldives	-	-	-	-	-	-	0.5	57972	-	-
Solomon Is.	35.0	2743516	24.8	1219011	96.0	4425646	105.5	2877665	15.4	449064
Fiji	22.0	809380	56.7	1353197	155.7	4153030	457.3	11176119	164.5	3018747
P N Guinea	1.0	70000	4.4	165356	17.2	975637	60.0	2384379	72.4	2703582
Others	192.6	5121918	2397.1	6147126	157.9	4606392	184.6	6660364	37.7	1883960
Total	2905.0	50557078	6209.0	89831752	5194.0	110947831	5896.1	131820505	1125.0	29179299

TABLE 2. Re-exports of dried sea-cucumber from Hong Kong during 1984-88 (Quantity in Tonnes; value in HK \$)

	1984		1985		1986		1987		1988 (Jan-Feb)	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
USA	59.7	6108221	38.2	354606	70.1	5878584	48.5	4655388	10.7	1248819
Canada	5.1	337496	10.0	584961	28.2	1158321	13.2	846496	1.0	54343
France	0.2	18720	0.2	18150	0.3	27990	0.9	25207	-	-
UK	2.0	197947	2.0	229375	3.3	192264	2.0	239680	0.4	60223
Taiwan PC	180.8	6076461	280.0	9815360	296.0	9432468	413.4	10978762	120.1	3451511
Rep. of Korea	387.4	6262123	24.1	431376	13.0	255372	-	-	-	-
Thailand	2.8	322339	2.2	234558	1.6	140156	1.2	101196	-	-
Japan	1.3	138049	3.8	199933	0.2	12875	16.0	1219617	0.6	174485
China	1642.0	16732777	4531.3	51239780	3917.0	32195762	4319.0	28811323	852.0	6081729
Malaysia	1.5	48080	0.6	18500	1.8	150378	1.5	68028	4.5	220421
Singapore	104.0	7632490	92.1	6018967	151.5	8550777	103.3	7364043	25.4	2047947
Australia	4.0	418100	4.4	398913	4.8	403863	3.2	333097	0.3	24397
Others	14.2	386057	19.1	715459	47.6	1423368	52.8	836392	3.4	209404
Total	2405.0	42678860	5008.0	73459938	4535.2	59822178	4975.0	55479229	1018.4	13573279

TABLE 3. *Import of beche-de-mer into Singapore 1983-1987 upto (January - July) 1988*

Name of country	1983		1984		1985		1986		1987		1988 (Jan.-July)	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Australia	5	79	-	-	-	-	-	-	6	129	-	-
Hong Kong	50	654	27	615	23	475	84	1744	30	542	18	319
India	95	1560	59	933	23	431	64	1331	67	1599	21	527
Japan	15	875	11	676	2	192	4	280	-	-	-	-
Kenya	50	516	65	685	76	811	72	779	90	1315	71	1005
New Caledonia	-	-	67	1030	107	1411	100	1148	34	464	28	350
Malagasy Rep.	2	27	-	-	6	40	7	97	-	-	-	-
Malaysia	4	49	10	64	14	98	138	932	144	1130	66	339
Mozambique	22	322	21	336	-	-	10	142	43	535	-	-
Papua New Guinea	7	61	5	52	12	145	53	555	63	487	31	352
Philippines	98	1075	145	1049	156	937	90	681	62	600	49	429
Sabah	77	184	64	201	59	306	-	-	-	-	-	-
Sri Lanka	52	1407	36	890	32	648	19	375	8	179	-	-
Taiwan	3	24	-	-	-	-	5	-	5	80	-	-
Tanzania	43	190	66	293	119	702	116	583	201	1100	129	849
O C Oceania	2	28	5	110	3	52	-	-	-	-	-	-
Yaman Arab Rep.	-	-	2	30	-	-	-	-	6	57	-	-
O C Other Africa	-	-	3	30	-	-	-	-	-	-	-	-
Pep. Rep. of China	-	-	-	-	1	43	2	75	-	-	5	136
Maldives	-	-	-	-	N.A.	47	3	47	19	295	134	2024
Mauritius	-	-	-	-	-	-	3	35	-	-	-	-
Solomon Islands	-	-	-	-	-	-	32	507	25	434	-	-
Western Samoa	-	-	-	-	-	-	9	133	-	-	-	-
Djibouti	-	-	-	-	-	-	-	-	9	120	7	102
Fiji	-	-	-	-	-	-	-	-	10	50	3	18
Saudi Arabia	-	-	-	-	-	-	-	-	1	29	-	-
O.C.C & S America	-	-	-	-	-	-	-	-	-	-	3	20
Somali Dem. Rep.	-	-	-	-	-	-	-	-	-	-	7	109
Yemen PDR	-	-	-	-	2	46	5	103	-	-	6	123
Other Countries	7	76	4	59	3	36	5	54	14	105	3	53
Brunei	-	-	-	-	-	-	-	-	-	-	-	-
Korea Rep.	-	-	-	-	-	-	-	-	-	-	-	-
Thailand	-	-	-	-	-	-	-	-	-	-	-	-
Burma	-	-	-	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-	-	-	-
Total	533	7129	590	7055	637	6374	814	9599	840	9251	580	6755

N. A. = Not available

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TABLE 4. *Export of beche-de-mer from Singapore 1983-1987 upto (January - July) 1988*Qty in Tonnes and Value in Singapore \$ '000
FOB prices for exports

Name of country	1983		1984		1985		1986		1987		1988	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Australia	-	-	-	-	-	-	-	-	2	46	-	-
Hong Kong	51	317	78	957	253	2433	656	3157	386	4068	303	3272
India	-	-	-	-	-	-	5	39	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	1	21
Malaysia	516	1731	583	1913	683	1927	429	2186	295	1998	212	1363
Saba	3	76	5	95	4	115	-	-	-	-	-	-
Taiwan	110	807	66	666	76	680	116	1095	117	1008	51	742
Other Countries	2	45	2	53	1	29	6	44	-	-	-	-
Brunei	1	30	2	39	2	48	3	63	2	51	2	44
Korea Rep.	14	78	5	29	-	-	-	-	-	-	-	-
Sorawak	18	321	15	231	14	236	-	-	-	-	-	-
Thailand	44	82	22	57	5	63	-	-	-	-	-	-
Burma	-	-	-	-	6	28	-	-	13	149	2	18
France	-	-	-	-	2	67	2	78	2	50	1	39
Total	759	3487	778	4040	1044	5626	1217	6662	817	7370	572	5499

TABLE 5. *Import of beche-de-mer into Malaysia 1983-1986*

Quantity in Tonnes and Value in Malaysian \$ CIF

Name of country	1983		1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Australia	1.05	14494	0.24	3829	0.08	1535	0.07	2096
Hong Kong	0.43	4893	0.07	1302	0.11	3294	1.01	9295
India	11.64	97918	8.08	100783	5.53	71878	20.12	117706
Indonesia	1065.10	1971837	825.16	2209059	318.11	2332978	409.65	2291653
Japan	2.45	27261	2.03	14038	0.29	4236	0.58	7365
Kenya	0.22	5384	-	-	-	-	-	-
Malaysia/Peninsular	0.11	1277	-	-	0.37	384	-	-
Malaysia, Sabah	-	-	0.04	160	0.09	610	0.54	2583
Netherlands	0.12	281	-	-	-	-	-	-
Philippines	92.20	54675	89.13	285808	52.61	132859	48.43	120654
Singapore	3.55	23225	2.42	13022	0.64	3937	3.10	15962
Sri Lanka	0.25	3923	0.11	1102	0.44	4367	-	-
Taiwan	0.31	5740	0.35	5141	1.19	12409	1.08	9104
U S A	0.71	790	0.22	4189	0.49	8446	0.32	3294
Papua New Guinea	-	-	0.99	6251	0.50	5400	0.62	3395
China	-	-	-	-	1.12	12046	-	-
Rep. of Korea	-	-	-	-	0.09	1322	-	-
Malaysia, Sarawak	-	-	-	-	-	-	3.09	14553
Total	1178.14	2211698	928.84	2644684	381.66	2594801	488.61	2597660

500 to 600 t during the period 1982-86 shot up to 900 t in 1987. Quite a substantial portion of the imports are re-exported and the re-export particulars are given in Table 2. The major outlet for re-export is Peoples Republic of China accounting 87% of total re-exports in 1987. Re-exports to this country consists of cheap products whereas Europe buys the more expensive varieties. The average price for dried sea-cucumber has also increased from HK \$ 14.46/kg in 1985 to HG \$ 29.90 in early 1988.

Singapore : In Singapore dried sea-cucumber is considered as delicacy. Dried sea-cucumber does not carry any import duty in the Republic and hence the statistics of imports furnished by the Singaporean Customs Department are seldom reliable. Tables 3 and 4 show import and export of *beche-de-mer* from Singapore. The annual domestic consumption falls in the range of 80 to 100 t. There is no domestic production. The major sources of supply in 1987 was from Tanzania, East Malaysia, Kenya, India, Papua, New Guinea, Philippines and Mozambique. Re-exports in 1987 were made to Hong Kong, Malaysia, Taiwan and Burma.

Malaysia : Imports decreased from 1178 t in 1983 to 489 tonnes in 1986, a drop of more than 50%. Imports are mostly from Indonesia, Philippines, India, Singapore and Hong Kong. Importers in Malaysia prefer to import through their sister concerns in Singapore or Hong Kong rather than placing orders directly to the original suppliers. Import particulars of *beche-de-mer* into Malaysia are given in Table 5.

CONSUMPTION TRENDS

Sea-cucumber is consumed mainly in restaurants and parties. It is an important item in all Chinese parties, Weddings, Chinese New Year and other festival occasions. The consumption pattern in different Asian countries is given in Table 6. The first two months before Chinese New Year *i.e.* January and February holds good demand for this product. July and August also show good demand, because of the Hungry Coast Festival. As the major production season in many producing countries falls from February to September, prices are usually lower during this period.

INDIAN *BECHE-DE-MER* INDUSTRY AND EXPORT TRADE

As has been stated earlier the *beche-de-mer* industry in India is almost solely based on a single species *Holothuria scabra*. Moreover, the fishery is restricted to small pockets along the Palk Strait and the Gulf of Mannar. The export trend of *beche-de-mer* during period 1975-87 is given in Table 7. During the last 12 years India exported the highest quantity *i.e.* 91 t in 1975. Converting to wet weight this quantity equals to 1788 t (The mean weight loss in processing *Holothurians* has been reported as 94.91% *i.e.* the mean yield is about 5.09%).

TABLE 6. Consumption pattern of *beche-de-mer* in the various Asian countries

Month	Market trend
January	Very good
February	Very Good
March	Poor
April	Poor
May	Average
June	Average
July	Good
August	Good
September	Poor
October	Average
November	Average
December	Average

Holothurians are collected by skin diving to a depth of 1.5 to 6.0 m in the shallow seas of Palk Strait and the Gulf of Mannar. During low tide they are either picked up by hand or by small scoop nets. Small quantities occur in trawling operation. Non-mechanised country crafts are used for collection by skin diving. Normally 5 divers go for fishing in one boat and the duration of fishing is from 0600 to 1500 hrs. Normally the size varies between 60-150 mm. In a mixed catch, 100 to 150 mm sizes will constitute about 15 to 20%, 70 to 100 mm about 30% and 50 to 70 mm about 50%. In short the whole catch will fall under the category below 7.6 cm (3") after processing. It has been reported that specimens measuring 150 to 210 mm live size will get reduced to 6.0 - 7.5 cm after processing.

TABLE 7. Export pattern of beche-de-mer from India (1975-1987)

Qty in kgs and Value in Rs.		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Exported to														
Hongkong	Q:	5020	2500	10681	-	-	-	-	-	280	-	-	-	-
	V:	81553	54028	233419	-	-	-	-	-	28000	-	-	-	-
Malaysia	Q:	-	1050	-	1500	149	563	2635	-	2550	3944	-	-	8099
	V:	-	32570	-	95477	6122	26000	133537	-	272000	420000	-	-	1227681
Singapore	Q:	86248	47278	45872	17037	28090	33450	42646	3714	68714	16771	11933	32864	47767
	V:	1990008	1469440	1515110	786141	1433682	1946314	2448022	1723558	3371307	1377948	1168213	3803858	7006290
Taiwan	Q:	-	5000	5000	6000	3000	-	-	-	309	-	-	-	-
	V:	-	115759	103604	194942	83137	-	-	-	25458	-	-	-	-
U.K.	Q:	-	3750	5000	-	-	-	-	-	-	-	-	-	-
	V:	-	116380	81300	-	-	-	-	-	-	-	-	-	-
U.S.A.	Q:	-	3000	381	-	-	-	2560	-	-	-	-	-	-
	V:	-	108600	13200	-	-	-	47198	-	-	-	-	-	-
Total	Q:	91268	62573	66934	24537	31239	34013	47841	37143	71853	20715	11933	32864	55866
	V:	2071561	1896777	1946633	1076560	1522941	1972314	2628757	1723558	3696765	1797948	1168213	3803858	8233971

Beche-de-mer exported to Singapore and Hong Kong prior to 1980 confined to sizes 4" to 6" and 3" to 4". Since the market demand overshoot the production the buyers started placing orders with our exporters for sizes 2" and below in spite of the fact that such smaller sizes contained a higher percentage of sand content. Since the smaller sizes were exported in large quantity, MPEDA wrote to the Government of India to ban the export of *beche-de-mer* below 3" (7.6 cm) in size and it is in force from 16.8.1982.

Because of the ban, export of *beche-de-mer* suffered a severe set back in 1982-83 and declined to 28 t from 56 t in 1981-82. Since the major portion of exports of *beche-de-mer* constituted by the size grades 2" to 3" the exporters of *beche-de-mer* were affected considerably and hence they demanded removal of the ban. No other countries have introduced this kind of ban. There is good demand for smaller sizes in the international markets. From the analyses of commercial invoices of exports for the period from 1979-80 to 1983-84 it has been found that the size grades below 3" accounts for 47% to 87% (Table 8).

In 1987 the Government of India constituted a Committee of Experts with Dr. P. S. B. R. James as the Chairman to re-examine the ban on export of *beche-de-mer* below 3". The Committee recommended that the ban already imposed on the export is entirely justifiable from the existing knowledge of the holothurians and as such the ban should be continued. It also recommended that the Tamil Nadu Government should impose a ban on collecting holothurians below 150 mm (natural size). No action has been taken so far by the Government of Tamil Nadu.

In a communication to MPEDA, the CMFRI has pointed out that the holothurian resources are heavily exploited in some areas and under or unexploited in other areas. Therefore, there is a need to survey and explore new areas for export production. The CMFRI has already submitted a project proposal to MPEDA in this respect and it is being examined by the Ministry of Commerce.

TABLE 8. *Size-wise export of beche-de-mer (kg) during 1979-1986*

Size	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
4" - 6"	7031 (16.9%)	4756 (14.21%)	2054 (3.06%)	3596 (7.48%)	3051.5 (3.8%)	2851 (18.52%)	2123 (19.5%)
3" - 4"	13987 (33.7%)	9332 (27.89%)	6986 (10.4%)	19192.5 (39.93%)	22643 (28.22%)	12545 (81.48%)	8765 (80.5%)
2" - 3"	18301 (44%)	15867 (47.42%)	45675 (66.50%)	22370.5 (46.54%)	39021 (48.64%)	-	-
Below 2"	2182 (5.25%)	3502 (10.46%)	13373 (19.95%)	2906 (0.04%)	15495 (19.31%)	-	-
Total	41501	33457	67088	48065.0	80210.5	15396	10888

CONCLUSION

There appears to be a renewed interest in the dried sea-cucumber industry in many of the tropical countries. This interest can be attributed to the need for an increase in foreign exchange income, improved processing and marketing information flow and growing demand from major markets. Although the number of consumers remain fairly constant, the

enthusiastic group of consumer *i.e.* the Chinese are always willing to pay a good price for it.

India is fortunate to have holothurian resources and we should find a way for judicious exploitation for export. The trade has to undergo a revolutionary change to export this product in value added form. Since the demand is picking up in the international markets we should explore the future of increasing the production through aquaculture and sea-ranching.