

VISION DOCUMENT  
For  
Indian Marine Products Export Industry



**THE MARINE PRODUCTS EXPORT DEVELOPMENT AUTHORITY**  
Ministry of Commerce & Industry, Government of India.



## Foreword

During the year 2006-07 India exported marine products valued at US\$ 1853 million (Rs. 8364 Crores). Export of marine products plays a vital role in fisheries development in India by providing employment and income to millions engaged in fishing, aquaculture, processing and allied activities. This sector, if developed appropriately could make India one of the top exporters of marine products in the world. Despite India's great potential, the export sector has not been able to realize this owing to various constraints. In order to overcome these barriers and to achieve steady growth, it is necessary that we set firm goals with a long-term perspective and work assiduously towards achieving these goals.

This vision document, besides setting long-term goals for the industry, lays down a clear road map for achievement of these goals. The road map is expected to provide a developmental agenda not only for MPEDA but also for other stakeholders and enable them to plan for the future. It is my fervent hope that this document will set the tone for the accelerated growth of the industry.

I wish to thank the officers and staff of MPEDA, the SEAI, and all others who have helped in bringing out this document.

A handwritten signature in black ink, appearing to be 'G. Mohan Kumar', is written over a horizontal line.

**G. Mohan Kumar IAS**  
Chairman, MPEDA

Cochin  
21st September 2007



## 1. Introduction

- 1.1. In 2006-07, fisheries accounted for nearly 1.3% of India's GDP. India with a fishery production of 6.1 million MT from both captured and cultured sources is ranked third among the largest fish producing countries and 19th among the seafood exporting countries of the world. The fisheries sector has significant subsistence as well as trade dimensions. About 7 million small fishermen depend exclusively on fishing for livelihood. Overall 12 million fishermen are engaged actively in the sector, including indirect workers.
- 1.2. In aquaculture, India is the largest producer after China. During the year 2006-07 the exports of marine products from the country stood at over 612,000 MT, with a value of US\$ 1,853 million. Shrimp continued to be the mainstay of seafood exports, contributing more than 54% in terms of value. The share of marine products in the total exports of the country was 1.4 %.
- 1.3. India has a share of 2.58% of the world seafood export trade. In terms of shrimp production India occupies the fifth position in the world and it is the top most supplier of Cephalopods to Europe. Aquaculture contributes 19% by volume and 55 % by value of total seafood exports whereas farmed shrimp contributes 61% by volume and 83% by value of the shrimp exports.
- 1.4. Exports of marine products have played a key role in developing the fishing and aquaculture sectors in India. Over 3.00 million people are employed in the fishing and fish processing sectors and this makes the fishery sector a key player in poverty alleviation and employment. Keeping this in view, it is necessary to develop long term plans for the development of exports based on a long term strategy. The purpose of this document is to provide the long term vision and based on it, a road map has been drawn for the future all-round development of the fishery sector.
- 1.5. Despite the robust growth of exports of marine products in the eighties and the early nineties when the exports crossed the US\$ one billion mark, the sector has witnessed stagnation in the last decade. Fig.1. This is a matter of serious concern. A detailed analysis shows that whatever growth the export industry had achieved was clearly propelled by the increased contribution of cultured shrimp.



Fig.1. Value (US\$ Min)

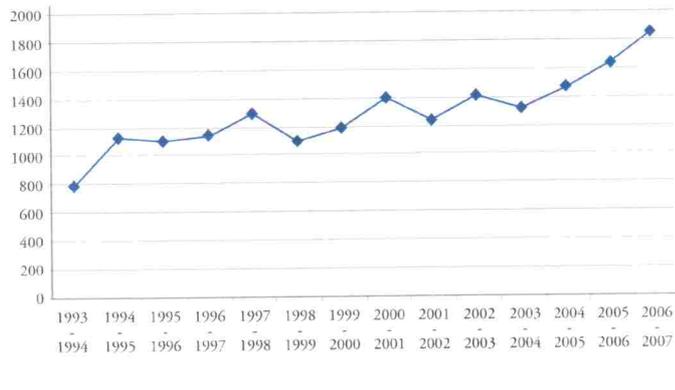
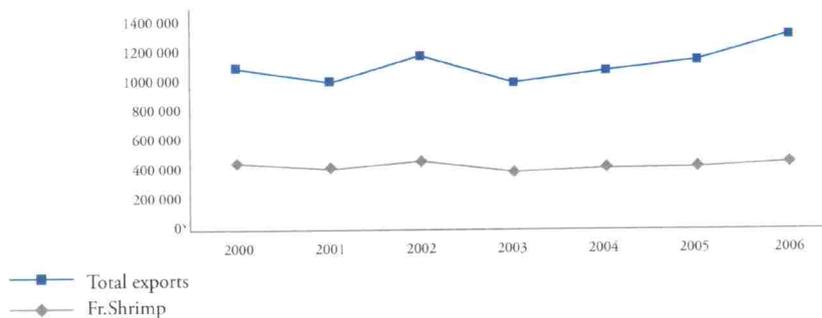


Fig.2. Share of frozen Shrimp in overall exports (2000-2005)



1.6. During the second half of the nineties, however, there was a stagnation in cultured shrimp production on account of diseases and the Supreme Court verdict restricting shrimp farming. Only since the dawn of the new millennium has cultured shrimp production started recovering and scaling new heights again. But during the last four years there has been a consistent decline in world shrimp prices for various reasons and the increased shrimp production did not contribute a proportionate increase in the export earnings in dollar terms. In general the principal reasons for the stagnation in exports are:

- 1.7. Slow expansion of aquaculture owing to the shrimp disease problems and lack of diversification in export oriented aquaculture except for scampi culture.
- 1.8. Stagnation in sea catch and the failure to exploit valuable deep sea resources like tuna.
- 1.9. Poor progress in the production of value added products. Any future strategy for the steady growth of the seafood industry has to address these weaknesses.



## 2. Profile of the Sector

2.1 The fishing sector in India with over 200,000 traditional vessels and about 58,000 mechanized vessels remains essentially traditional and technologically underdeveloped in comparison to the developed as well as developing countries dominated as it is by small fishermen. Over 60% of the exports from sea catch is contributed by the mechanized sector and 7% by the traditional sector. Most of the mechanized vessels are ill equipped to undertake long voyages. Deep-sea fishing, which has a very low share of less than 1% in exports has not been able to make a dent in the fishing sector. India has a modest fleet of about 60 deep sea vessels, but the viability of deep-sea fishing is affected by the depleted landings, down from 25-35 MT per voyage to less than 8 tonnes per voyage and high fuel prices.

2.2 In recent years, inland aquaculture has emerged as a major fish producing sector in India, with production currently (2003) around 2.2 million MT/yr. The inland fisheries resource comprises over 2.38 million ha. of ponds & tanks, 2.03 million ha. of reservoirs, 0.19 million km of rivers and canals and 1.2 million ha of brackish water area. The potential of these resources if tapped through both capture and culture fisheries is estimated to be 4.5 million MT. Presently the inland fisheries exploitation is only 3.46 million MT(2004). Out of 1.2 million ha. of brackish water area available only, 0.17 million ha. (14%) is being used currently. Table 1 gives the present state wise break down of the brackish water area available and the extent of its utilization.

**Table 1.**

State	Estimated potential brackishwater area	Area Developed (Ha)	% of available potential
West Bengal	4,05,000 (34.01%)	50,405	12.44
Orissa	31,600 (2.65%)	13,400	42.40
A P	1,50,000 (12.60%)	84951	56.63
Tamil Nadu	56,000 (4.70%)	6104	10.90
Pondicherry	800 (0.07%)	144	16.00
Kerala	65,000 (5.46%)	14,875	22.88
Karnataka	8,000 (0.67%)	1,945	24.31
Goa	18,500 (1.55%)	340	1.84
Maharashtra	80,000 (6.72%)	1,135	1.42
Gujarat	3,76,000 (31.57%)	2,371	0.63
<b>Total</b>	<b>11,90,900 (100%)</b>	<b>175,670</b>	<b>14.75</b>



- 2.3. India has 388 processing plants with 191 of them approved by EU .Of the total processing capacity of 12,540 MT per day or about 2.5 million MT per year, only 20% is presently utilized. The range of processed products being made in India include frozen, breaded and battered shrimp, Individually Quick Frozen (IQF) products, pre-cooked products, Accelerated Freeze dried (dehydrated) products, cooked and stuffed meat, and surimi. The production of processed or value- added products is less than 10%.



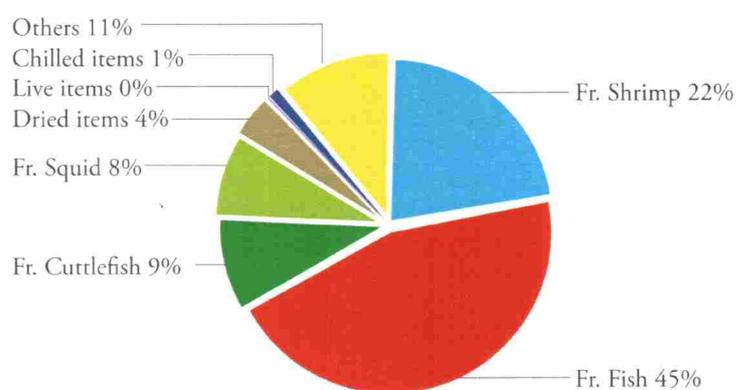
### 3. Exports in the Fisheries Sector

#### 3.1 Current Scenario:

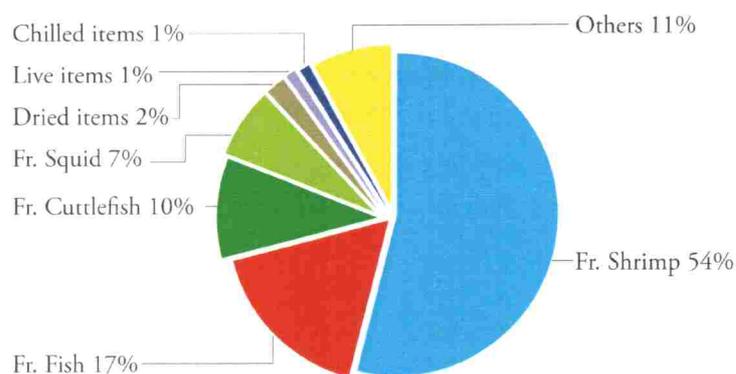
3.1.1. During the year 2004, the international fishery exports amounted to US \$ 72 billion (FAO). The value of imports stood at US\$ 75 billion.

Figures 3 and 4 present the item-wise break up of marine products export from India in terms of value and quantity.

**Fig.3. Item-wise Export of Marine Products 2006-07 (Based on Quantity)**



**Fig.3. Item-wise Export of Marine Products 2006-07 (Based on Values)**





3.1.2. The EU has emerged as the largest importer of marine products from India accounting for 34% of the exports by value. Frozen shrimp continued to be the largest item in the export basket accounting for nearly 53% of the total value of exports. Of this, the share of cultured shrimp stood above 80% . The total export figures of the past five years in terms of value and quantity are given in Table 2.

Table 2.

## EXPORT TREND OF MARINE PRODUCTS

Q : Quantity in M.Tons V : Value Rs. Crore \$: US \$ Million

Year		Export	Growth	(%)
2002-03	Q:	467297	42827	10.09
	V:	6881.31	924.26	15.52
	\$:	1424.90	171.55	13.69
2003-04	Q:	412017	-55280	-11.83
	V:	6091.95	-789.36	-11.47
	\$:	1330.76	-94.14	-6.61
2004-05	Q:	461329	49312	11.97
	V:	6646.69	554.74	9.11
	\$:	1478.48	147.71	11.10
2005-06	Q:	512164	50835	11.02
	V:	7245.30	598.61	9.05
	\$:	1644.21	165.74	11.21
2006-07	Q:	612641	100478	19.62
	V:	8363.53	1118.23	15.43
	\$:	1852.93	208.72	12.69



## 4. Vision for Exports

The following section outlines the vision for the marine products export industry. The vision encompasses the key sectors of the Industry namely capture fisheries, culture fisheries, processing and value addition, quality management and marketing with due regard to conservation and sustainability issues. An attempt has also been made to lay down a clear road map for realizing the vision.

- 4.1. **India to become one among the top five seafood exporting countries in the world.**
- 4.2. **Exports to increase from the current level of 0.61 million MT to at least 2 million MT by the year 2015.**
- 4.3. **Value of exports to increase to US\$ 4 billion by the year 2012 and US\$ 6 billion by 2015.**
- 4.4. **Marine products industry to have a share of at least 5-6% in world exports.**
- 4.5. **Marine products exports to retain a share of 2.5% in India's total exports.**
- 4.6. **The employment generation of the Industry to grow from the current level of 3.0 Million to 6.0 Million by 2015.**

The above vision is sought to be realised through a multi pronged strategy to be adopted covering culture and capture fisheries, processing, quality control and marketing. The vision for the various components are discussed below.



## 5. Vision for Export Marketing

The international market for seafood has undergone several changes. Consumer preferences and tastes are strongly in favour of ready-to-cook and ready-to-eat convenience foods and eating in restaurants has become immensely popular. Convenience seafood items are now increasingly being purchased from the supermarkets. The food service sector has undergone drastic changes in terms of the types of products in demand. Despite these structural changes, which have shifted the demand in favour of value added products, Indian exports are still dominated by low-end block frozen materials and their share in the retail segment is insignificant. India has only one well known brand in the retail segment.

**5.1.1. Indian brands to gain a leading position in the retail segment.**

**5.1.2. Brand image of key Indian products to drive consumer demand in importing countries**

## 5.2. Road map for realising the vision

5.2.1. MPEDA, through a professional agency will carry out a Brand Equity campaign in the target markets by promoting brand equity for key Indian products like Black Tiger, Freshwater prawn, Cephalopods etc.

5.2.2. MPEDA will step in to promote co-branding with major retail chains and promote a common brand which can be made available to the trade for marketing their products.

5.2.3. MPEDA to enhance the skills of the trade especially in the SME segment in coping with the new requirements and challenges of the retail market.

5.2.4. A massive thrust will be given for the promotion of organic shrimp and other organic fish products for the international market.

5.2.5. MPEDA will work with international agencies like UNCTAD to educate stake holders on international market situation, and to build capacity for overcoming non-tariff barriers.



## 6. Vision for Capture Fisheries

- 6.1.1. India, through a sustainable management system will have to exploit its potential to the full in the next five years through a progressive conservation policy, fishing to become totally sustainable and certifiable by internationally reputed agencies.
- 6.1.2. India to emerge as a leading exporter of tuna and reach a turnover of US\$ 500 million in the segment alone by 2012. India to gain prime position in the world sashimi market by focussing on quality.
- 6.1.3. India to emerge as a leading exporter of oceanic squid.

### 6.2. Road-map

- 6.2.1. Acquisition of the latest technology for mapping, tracking and fishing all the deep sea resources like tuna, pelagics, cephalopods, etc.
- 6.2.2. Popularisation of the mono-filament long lining system in a big way by converting vessels for long lining. Build capacity for production of quality equipment and for conversion of vessels. Mobilize investment in the sector through NRIs.
- 6.2.3. Creation infrastructural facilities at landing centres for packing tuna for export.
- 6.2.4. Organise training programmes for fishermen through an expert in Tuna fishing and on-board handling.
- 6.2.5. Development of Andaman and Nicobar Islands as a major tuna fishing base by providing basic infrastructural facilities like deep sea fishing berth, freezing facility and logistics for airlifting Sashimi grade Tuna.





- 6.2.6. Popularize squid jigging through promotion of joint ventures for squid jigging.
- 6.2.7. Popularize the concept of sustainable fishing and fisheries management with stakeholder participation at the grass root level.
- 6.2.8 Initiation of steps to reduce the cost of fishing operations using more fuel efficient fishing boats and boats using cheaper fuels like LPG and CNG.

### 6.3. Vision for Conservation Management

- 1. **Indian fisheries to attain certifiability through sustainable practices.**
- 2. **India to market eco-labelled products by the year 2010.**

### 6.4. Roadmap

- 6.4.1. MPEDA will work with the state governments to bring about a resource based fishery management system with full stakeholder participation. This will involve influencing policy changes /changes in Marine Fisheries Regulation Act and strict enforcement of regulations.
- 6.4.2. Work with an internationally accredited agency to get wild catch certified.
- 6.4.3. NETFISH launched by MPEDA will work towards capacity building among stakeholders through training designed to create awareness on conservation issues.



## 7. Vision for Culture Fisheries

According to the projections by the FAO, the demand, per-capita consumption and total consumption of seafood will increase in the next three decades; world capture fisheries will stagnate while aquaculture production is projected to increase, driven by the increase in production in China. It is projected that by the year 2020, 40% of the world's production of fish will come from aquaculture. India will be no exception. India, with its vast and diverse aquaculture potential can therefore aspire to become a world leader of seafood exports by resorting to diversified and sustainable aquaculture.

**7.1.1. Increase production of brackish water species to at least one million. MT by the year 2015 . 50% of this production to be contributed by the native species of shrimp namely, *P. monodon* and *P.indicus*.**

**7.1.2. India to emerge as one of the top marine fin fish farming nations through large scale expansion of marine cage culture operations which should contribute at least 0.5 million MT of exportable fish by 2015.**

**7.1.3. India to emerge as a world leader in Fresh water prawn production.**

**7.1.4. India to become a leading producer of Tilapia, Catfish by systematic diversification of fresh water species.**

**7.1.5. India to be a world leader in organic products like shrimp and scampi.**

**7.1.6. India to emerge as a leading exporter of live fish with A&N Islands becoming a major live fish export centre.**

**7.1.7. Aquaculture to become totally sustainable.**

### 7.2. Road map

7.2.1. Develop the SPF Brood stock of *P. monodon* / *P.indicus* in the next five years.





- 7.2.2. Implement mission mode programmes in Gujarat, Maharashtra and Orissa. 50,500 ha. in Gujarat, 27,500 ha. in Maharashtra and 20,350 ha. in Orissa to be targeted.
- 7.2.3. Large scale aquaculture projects with special focus on sustainability to be implemented in Gujarat.
- 7.2.4. Revival of farming of *P.indicus* and introduction of species like *P.merguensis*.
- 7.2.5. Revive 10,000 ha. of defunct farms in Andhra Pradesh.
- 7.2.6. Popularise scampi and shrimp farming in the low-lying paddy lands of Kerala as a supplementary crop.
- 7.2.7. In states like Kerala, West Bengal and Andhra Pradesh, organic farming of *P. monodon* will be popularized and the product marketed in overseas markets.
- 7.2.8. Hatcheries to be strictly regulated. Pro-biotic mode of production of high-health seeds in hatcheries to be popularized both in the case of crustaceans and fin fish.
- 7.2.9. Strengthen the quality of PCR laboratories by introducing a system of accreditation for farmers.
- 7.2.10. Popularise crab culture in specific areas using hatchery produced seeds.
- 7.2.11. The MPEDA to strengthen extension of sustainable farming through the National Centre for Sustainable Aquaculture (NaCSA) and a net work of aquaculture societies.
- 7.2.12. Take up comprehensive GIS mapping of farms throughout the coastal states to ensure traceability.
- 7.2.13. Undertake comprehensive survey to identify zones suitable for marine cage culture, through, Ministry of Agriculture (MoA) and the state governments to evolve suitable policy for leasing out, off shore areas for mariculture.
- 7.2.14. Introduce hatchery and grow-out technologies for the large scale farming of the following marine species through the Rajiv Gandhi Centre for Aquaculture (RGCA).



1. Indian seabass (*Lates calcarifer*)
  2. Grouper (*Epinephelus Sp*)
  3. Cobia ( *Rachycentron canadum* )
  4. Silver pomfret( *Pampus argenteus*)
  5. Tuna - Yellow fin (*Thunnus albacares* )
  6. Milk fish (*Chanos chanos*)
  7. Indian halibut (*Psettodus erumeir*)
- 7.2.15. Technology for large and small scale cage culture of the above finfish species to be developed in the country for the benefit of different categories of farmers and fishermen. MPEDA and Innovation Norway shall work together for the development and transfer of the technology.
- 7.2.16. Promote the exports of live seafood from the Andaman and Nicobar Islands through cage culture practices etc. Air freighting facilities at Port Blair will have to be strengthened.
- 7.2.17. Intensive research in disease control of fin fish to be initiated, if necessary with the support of other technically advanced countries with a view to eliminating the use of antibiotics in fish culture.
- 7.2.18. Selective introduction of species like Tilapia, catfish, etc. by developing the requisite hatchery technology.
- 7.2.19. Brood stock development of *Macrobrachium rosenbergii* through selective breeding to be taken up.
- 7.2.20. Initiate selective breeding of Indian Cat fish.
- 7.2.21. Undertake research and development activities in nutrition with a view to reducing the cost of feed, by the replacement of fish meal by other sustainable sources.
- 7.2.22. Strengthen R&D facilities for development of diversified farming RGCA to be developed as a centre of excellence for technology development and transfer
- 7.2.23. Strengthen insurance coverage for Fish/shrimp farming and streamline flow of institutional finance to the aquaculture sector.



## 8. Vision for Processing and Value Addition

- 8.1.1. At least 75% of the production to be in value added form comprising ready –to-eat and ready-to-cook products by 2012.
- 8.1.2. India to emerge as a leading seafood processing hub of the world by utilizing the unutilized capacity of processing plants. At least one million MT of imported raw materials to be processed for exports by 2012.
- 8.1.3. Upgrade packaging of seafood so as to catch up with the rest of the world and be compliant with the most stringent international standards.
- 8.1.4. All the seafood processing plants to be of EU standard, completely HACCP compliant with full traceability systems in place.
- 8.1.5. Processing industry to consolidate and large processing companies to emerge with higher competitiveness.

### 8.2. Road Map

- 8.2.1. MPEDA with the support of the MoCI and MoFPI to introduce a technology upgradation scheme to provide assistance to those exporters who wish to
  - a. Build new facility for value addition.
  - b. Expand existing facilities for value addition.
  - c. Diversify the existing facilities for value addition.
- 8.2.2. MPEDA to phase out its conventional schemes and concentrate exclusively on promotion of value addition.





- 8.2.3. Mobilize adequate long-term credit for the technology up-gradation scheme for which investment to the tune of at least Rs.5.0 billion will be required.
- 8.2.4. Enhance working capital availability to the industry to the tune of Rs 30 billion.
- 8.2.5. Facilitate periodic interaction between the Industry and the banks through a working group comprising the representatives of key financial institutions, MPEDA and the seafood industry.
- 8.2.6. Attract foreign direct investment to the processing sector and facilitate the process of consolidation of the industry to achieve economies of scale.
- 8.2.7. Set up atleast two Special Economic Zones (SEZ), one on each coast to promote production of value added products, import raw material for processing and export.
- 8.2.8. Investments to be mobilized for the creation of cluster based common infrastructure facilities like potable water supply, common effluent treatment systems etc.
- 8.2.9. Facilitate easy import of raw materials for reprocessing by streamlining customs and quarantine procedures.
- 8.2.10. Strengthen incentives for value addition and review incentives given to block frozen products.

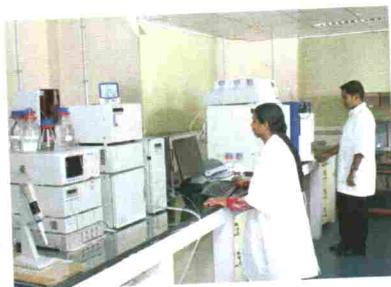


## 9. Vision for Quality Management

- 9.1.1. By the year 2010, achieve total quality management from catch to export.
- 9.1.2. India's fishing harbours /landing centres to be up-graded to international standards.
- 9.1.3. Complete elimination of residues of banned antibiotics.
- 9.1.4. Total up –gradation of the pre-processing sector to EU standards.
- 9.1.5. Indian quality standards to become the bench mark for the world.

### 9.2. Road map

- 9.2.1. Achieve drastic reduction of post harvest losses by launching a massive education campaign to train fishermen. On-board training to receive a massive thrust.
- 9.2.2. The MPEDA's outreach organization—NETFISH— to become active in all the coastal states and intensify training programme for fishermen, Pre-processing workers etc.
- 9.2.3. Carry out a well- organized campaign for upgrading the hygiene and sanitation of fishing vessels.
- 9.2.4. MPEDA to launch a sustained campaign to improve the quality of ice available in the coastal states for use by fishermen, fish handlers at landing centres and pre-processing plants. All the ice plants will be brought within the purview of the Quality up-gradation scheme of MPEDA by 2010.
- 9.2.5. During the period up to 2010 at least 30 major fishing harbours/ landing centres of the country will be upgraded to international standards. By the year 2015, all the fishing harbours, which account for the entire export from the country will be upgraded to international standards.





- 9.2.6. Maintenance of the upgraded landing centers to be done with the participation of the stakeholders.
- 9.2.7. Strengthen regulation of the pre-processing sector.
- 9.2.8. The HACCP system to be strengthened in all the existing plants with a strong audit programme.
- 9.2.9. Total Traceability of products to be ensured.
- 9.2.10. The MPEDA Quality Logo to be launched and promoted aggressively in all the major markets during this period.
- 9.2.11. Strengthen region wise campaigns to address region – specific quality issues with the active participation of stakeholders.
- 9.2.12. Strengthen testing infrastructure by establishing world class testing laboratories through out the coastal areas of the country through private public partnership. The MPEDA will work together with the agencies like APEDA, MoFPI towards this goal.





## 10. Vision for the Domestic Market

The high projections of production of seafood in the country calls for concerted effort to streamline and promote domestic market, targeting all the major cities in the country as well as other major consuming centres. Development of domestic marketing, particularly in the retail segments of the urban areas in India will have a salutary impact on the stabilization of prices paid to the farmers. This in turn will sustain the viability of farming even in the teeth of fluctuating international prices for key products like shrimp. Domestic marketing needs to be promoted systematically as a part of MPEDA's strategy to 'cushion' the adverse impact of falling international prices.

**10.1. The domestic market to grow to Rs.50 billion by the year 2010.**

### 10.2. Road map

- 10.2.1. MPEDA to work with the National Fisheries Development Board to develop domestic marketing of fish and fishery products.
- 10.2.2. Cold chain for the Industry to be developed and expanded. This infrastructure needs to be financed by various institutions with the active public- private participation.



## 11. Vision for the Ornamental Fish Sector

11.1. The wholesale value of the global ornamental fish trade is estimated to be US\$ 1 billion, while the trade including accessories and feed is estimated to be worth more than US\$14 billion. More than 4000 freshwater and 1400 marine species are traded and some 30-35 species of fresh water fish dominate the market. India is endowed with abundant natural resource of more than 500 species of fresh water and marine ornamental species, favourable water quality and climatic conditions suitable for captive breeding of ornamental fish. The Indian ornamental fish export sector is a small but vibrant segment with tremendous potential for growth and large-scale employment generation. At present the ornamental fish export from India is dominated by the wild caught species, which cater to a small portion of the global market earning US \$ 1.2 million only. The vision for ornamental fish sector envisages certified production of wild caught species and move towards exports of captive bred high value ornamental fishes.

**11.1.1. To achieve the annual production of 500 million of high quality marine and fresh water ornamental fishes with an export target of US\$ 50 million by 2012 and US\$ 100 million by 2016.**

**11.1.2. To make India an international ornamental fish trade hub.**

**11.1.3. To establish international brand image with green certification for eco-friendly production of wild caught and cultured ornamental fishes.**





## 11.2. Road map

- 11.2.1. Setting up 7200 ornamental fish breeding units by 2012 and another 7200 units by 2016 to meet the production targets.
- 11.2.2. Establishment of aquatic quarantine infrastructure in at least 4 international airports.
- 11.2.3. Development of at least 5 brood stock banks to cater the superior quality broodstock requirement.
- 11.2.4. Development of commercial breeding technology for freshwater and marine ornamental fish species.
- 11.2.5. Strengthening of marketing infrastructure.
  - (a) Networking of geographically contiguous breeding units to form clusters.
  - (b) Creation of ornamental fish marketing societies (OFMS).
  - (c) Interlinking between breeding clusters, OFMS and exporters to facilitate trade.
- 11.2.6. Brand building for Indian ornamental fish through certification of production and quality assurance with the assistance from international agencies like Project PIABA, Marine Aquarium Council and Ornamental Fish International.



The Andhra Pradesh Shrimp Seed Production Supply and Research Centre, Mangamaripetta, Andhra Pradesh.  
The Orissa Shrimp Seed Production Supply and Research Centre (OSSPARC), Berhampur, Orissa  
Network for Fish Quality Management & Sustainable Fishing (NETFISH), Cochin, Kerala  
National Centre for Sustainable Aquaculture (NaCSA), Kakinada, Andhra Pradesh  
Rajiv Gandhi Centre for Aquaculture (RGCA), Thirumullaivasal, Tamilnadu

**THE MARINE PRODUCTS EXPORT DEVELOPMENT AUTHORITY**

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