

## COVER STORY Strategies & Action Plan 2025 - Part 7

LD.01/44

By K.S Srinivas IAS, Chairman, MPEDA

China's New Regulatory Requirements for Import

> Masmin: The Story of a Unique Product from Lakshadweep

Seafood Market Research Report on China

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### On the Platter

K. S. Srinivas IAS Chairman

Dear friends,

I wish all the stakeholders and readers a very happy and prosperous New Year !

The marine products export figures up to December 2021 gives much delight, as the figures registering nearly 35% increase compared to the same period in the last financial year. Interestingly, the export figures up to the third quarter of the current year have surpassed those for the entire FY 2020-21. With marine products export crossing USD 6.11 billion, hopes are high that the target of USD 7.81 billion set for the current year will be fulfilled.

Bhimavaram has emerged as the hub of aquaculture production and processing in Andhra Pradesh and houses 42 seafood processing units. Around 64 exporters are registered with the MPEDA Sub Regional Division at Bhimavaram. MPEDA also has a Quality Control –cum- ELISA Lab at Bhimavaram, which handles over 3500 samples for testing various parameters. The Lab is EIC approved and accredited by NABL as per ISO 17025:2017. There has been a long standing demand from the stakeholders to house the MPEDA office and QC lab in Bhimavaram together. The Andhra Pradesh Agricultural Market Committee has graciously allotted 60 cents of vacant plot to MPEDA inside the Agricultural Market Complex in Bhimavaram. The foundation stone for the MPEDA Integrated Laboratory & Office Complex was also laid on 29<sup>th</sup> December 2021 by Mr. Grandhi Srinivas, Hon'ble Member of Legislative Assembly in presence of other dignitaries. The establishment of the integrated complex will be helpful for both exporters and farmers in getting the services from MPEDA under one roof.

At times, people face major bottlenecks in their day-to-day life due to certain minor gaps in the system or infrastructure. The farmers of Uppigeda creek in Srikakulam district of Andhra Pradesh were facing a similar problem in logistics. There are 8 farmers' societies registered with NaCSA in the village of which four societies are belonging to the Scheduled Caste. Lack of conveyances across the creek had made it difficult for farmers to source seed, feed and other inputs for aquaculture at an affordable cost. The increase in expenses eroded their feeble profit margin, as they had to make an additional travel of around 20 Kms for transporting goods and crops. At this juncture, MPEDA society, National Centre for Sustainable Aquaculture (NaCSA) got in touch with them and understood their needs. MPEDA along with the District Administration has decided to construct a cross bridge for the village in Uppigeda creek, which would help the farmers of the village to easily transport aquaculture inputs and take out the harvested crop across the creek saving a lot of time, effort and money. The foundation stone of the cross over bridge was laid on 30th December 2021 by Mr. Dharmana Prasada Rao, Hon'ble Member, Andhra Pradesh Legislative Assembly representing Srikakulam constituency, and Dr. Sidiri Appalaraju, Hon'ble Fisheries Minister, Govt. of Andhra Pradesh in presence of Mr. Shrikesh B. Lathkar, District Collector, Srikakulam. The project costs Rs.250 Lakh, of which 75% will be from MPEDA under the Central Government assistance scheme for the welfare of Scheduled Castes & Scheduled Tribes, and the balance will be borne by the District Administration.

During the month, MPEDA has organized three Virtual Buyer Seller meets with the buyers from Russia, China and UAE. In addition, a Business Meet with Kuwait and a preliminary business meet with Denmark were also organized with the help of Indian Missions there.

Thank you.

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#### EDITORIAL SUPPORT Bworld Corporate Solutions Pvt Ltd 166, Jawahar Nagar, Kadavanthra Kochi, Kerala, India 682 020 Phone: 0484 2206666, 2205544 www.bworld.in, life@bworld.in

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## MPEDA participates in "Local Goes Global: Export Led Growth" Pre-Summit event, Vibrant Gujarat Global Summit 2022

A pre-summit event "Local Goes Global: Export Led Growth" was organized by Government of Gujarat on 20<sup>th</sup> December 2021, at Shri Sakti Convention centre, Ahmedabad. The 10<sup>th</sup> edition of Vibrant Gujarat Global Summit organized by Government of Gujarat will be held at Mahatma Mandir, Gandhinagar. The pre summit event is focused on the following aspects/ areas:

- · Achieving US\$1 Trillion in Exports by 2028 (p.a)
- · Redefining India's position in Global Supply Chain
- Role of MSMEs in building export-led economy
- · Coastal Economic Zones for maximizing exports

Mr. K. S. Srinivas IAS, Chairman, MPEDA delivered a talk on "Export Potential in Traditional and Sunrise Sectors- Seafood Scenario" at the Pre-submit event, wherein he has stressed on the major steps to be taken to increase the marine production and development of aquaculture to boost export of marine products. He also highlighted the need of more brackish water lands to be allotted by Government of Gujarat to the aquaculture farming communities, modernizing fishing harbours, diversification of aquaculture with more species like Sea bass, Mud crab, Cobia and Pompano, increasing of productivity through modern aquaculture System etc. MPEDA also participated in the exhibition conducted in association with the event.

Dr. S. Kandan, Director, MPEDA-RGCA, Mr. Maruti D. Yaligar, Joint Director, MPEDA Valsad, Mr. Vinod Kumar Shrimali, Deputy Director, MPEDA Veraval, Mr. Kishor Kumar Vaniya, Assistant Director, MPEDA Porbandar, Mr. Bhavin M Gheravara, Field supervisor, MPEDA Valsad and Mr. Jignesh Visavadiya, State Coordinator, MPEDA-NETFISH, Gujarat also attended the Summit.



Chairman, MPEDA & Officials in the MPEDA Pavilion of Vibrant Gujarat- Pre-summit event

## Virtual Buyer Seller Meets organized by MPEDA

#### Portugal

virtual Buyer Seller Meets (VBSMs) provide opportunities to Indian exporters to have one on one interaction with buyers. MPEDA has successfully organised a VBSM with Mr. Eugenio Vieria of M/s. Frimarc from Portugal on 13<sup>th</sup> December 2021.

FRIMARC was formed in 2001 by Mr. Marco Coutinho and has offices in Faro, Olhao, Evora & Sines, Frimarc mainly deals with the commerce & distribution of food products especially chilled & frozen meats, frozen, dried and canned seafood mainly with hotels, restaurants and other institutional customers. Frimarc also deals with grocery products, frozen vegetable & fruits, bakery & pastry and oils. They also have a separate department dealing with complete solutions for cleaning kitchen equipment along with the assembling and supply of equipment meant for HoReCa and similar sectors. They have an own fleet of 30 refrigerated vehicles for distribution covering Lisbon and all the national territory south of the Tojo river in Portugal. The company operates cold storages at Algarve (Faro) and Alentejo (Evora). More details available at www.frimarc.pt .

The VBSM started with the welcome address by Dr. T. R. Gibinkumar, Deputy Director (Market Promotion & Statistics). Twelve exporters participated in the meet with the presentations focusing on the products, certifications and facilities available. Mr. Anil Kumar P., Joint Director (Marketing) also joined the session. The buyer sought sourcing of Vannamei and Black tiger shrimps, fishes, squids, cuttlefishes & octopus from India. The meeting ended with the vote of thanks by Dr. Gibinkumar.



#### Greece

MPEDA has organized Virtual Buyer Seller Meet with Kallas INC from Greece on 10<sup>th</sup> December, 2021. Mr. Manolis Koulelis, Senior buyer has participated in the meet representing the firm. The products preferred by Kallas INC were cuttlefish, shrimps, sword fish and tuna loins. 9 exporters participated in the VBSM with their presentations and the buyer actively interacted with the exporters.



Product requirement and specifications

PRODUCT	SCIENTIFIC NAME
Shrimps PUD Blanched in bulk or in 500grm plastic bags	Metapenaeus affinis , M. monoceros , Litopenaeus vannamei
Squids Whole Round and Whole Cleaned in 2kg or 1kg blocks	Loligo duvauceli
Swordfishes H/G of sizes U/10 and 10/25	Xiphias gladius
Tuna loins	Thunnus albacares
Cuttlefish Whole Cleaned IQF in bulk , U/1 and 1/2 sizes	Sepia pharaonis

The buyer gave insights on the seafood market in Greece, and the role play by supermarkets during pandemic, and their e-commerce inititatives. He has informed that dine out sector is reviving slowly. Mr. Anil Kumar P., Joint Director (Marketing) joined the concluding session. Mr. Manolis thanked MPEDA for organising the meet and the VBSM concluded with the Vote of Thanks by Dr. Gibinkumar.

KALLAS INCORPORATION S.A. was incorporated in 1967 and currently they are dealing with the import and the distribution of raw materials and food ingredients by supplying its products to three main sectors – (1) Food industries that deal with dairy, bakery, confectionery, biscuit, ice cream, puff pastry, charcuterie industries etc., (2) Supermarket chains by selling known brands and private labels, (3) Mass Caterers (Food Service / Ho.Re.Ca.) by providing the best available food ingredients.

KALLAS INCORPORATION has its own state-of-theart temperature-controlled storage facilities in Acharnes Attica, Ioannina, Oinofyta, Thessaloniki, Tripoli, Vathi Avlidos, Volos, Bulgaria, Cyprus, Romania, Serbia and FYROM. Since 1995, the company has been exporting products to Cyprus, Bulgaria, Romania, Poland, Albania, Skopje, Egypt, Tunisia, Russia, Serbia and Croatia.

#### Russia

MPEDA in association with EoI, Moscow has arranged a Virtual Buyer Seller Meet (VBSM) with M/s. DEFA group from Russia on 29<sup>th</sup> December 2021. Mr. Anand Shankar, Second Secretary, EoI, Moscow welcomed Ms. Oxana Sugrobova, who represented M/s. DEFA group and gave a brief introduction of MPEDA. A presentation on the M/s. DEFA group was given by Ms. Oxana.

The buyer preferred products like shrimps, breaded shrimps, squids etc from India. Dr. T. R Gibinkumar, Deputy Director (Market Promotion & Statistics) MPEDA, gave a presentation on India's export Performance to CIS countries, highlighting the export target fixed by the Ministry and the achievement made so far by the country.

The buyer enquired on the major items of export from

India and Dr. Gibinkumar gave a brief on the items exported like vannamei shrimp, Black tiger shrimp, cuttlefish, squid, octopus and fin fishes like mackerel, croaker etc.





DEFA is a reliable partner and supplier of fish and seafood established in 1995 in Russia. It has about 7 branches in Russia and has its supply chain extended to more than 25 countries. DEFA has been actively increasing the supply of seafood from all over the world since 2017 from Vietnam, Chile, India, China and New Zealand. DEFA has developed its own brand FISH & MORE, which was re-launched in 2021.

The VBSM continued with the presentations of the exporters from India. Five exporters participated in the meet and had fruitful interaction with the buyer. Ms. Oxana proposed that participation in fairs conducted in Russia could provide opportunity for the Indian exporters to explore the potential of the country and improve the trade.

Mr. Anil Kumar P., Joint Director (Marketing), MPEDA joined the concluding session and suggested a virtual round table meeting of the 63 registered seafood exporters from India to Russia with the buyers focussing on the seafood market in Russia. The meeting ended the Vote of Thanks by Mr. Anil Kumar.



## MPEDA conducted Seafood Market Research Study on China

arket Research and Intelligence is a vital marketing tool that provide in depth information on a market, which are mainly utilized to penetrate into prospective markets and strengthen the position in existing markets.

The potential markets can be better exploited by studying the pattern of consumer preferences and market research will provide valuable analytics which will aid in decision making such as pricing, packaging and even product development. In the existing market, the awareness on up-to-date market changes or shift in product demand is of innate importance. This will provide necessary insights to the established Indian exporters to take a quick decision on changing the product lines based on the consumer preferences or short-term / long term demands.

MPEDA decided to conduct a seafood market research study on major markets of Indian seafood under the Market Promotion scheme. China was selected as the first market to conduct the study not only being a major market for Indian seafood but also due to its sheer size and diversity it displays. China has long maintained tight control over information, and the effort has intensified in the last few years. The new data restrictions imposed by China have made the state of its economy increasingly obscure to outsiders.

In the current situation to maintain and increase the market share of seafood export to China, a detailed understanding of the trade was essential. MPEDA after meticulous tendering process has entrusted the task of conducting Seafood Market Research Study on China to M/s. Nmore, Management Consultants Hyderabad.

#### The study covered the following major aspects

• Market opportunity analysis of seafood products under HS 03 and HS 16 at 8 digit level based on demand supply – China country level and 5 provinces • Competitor analysis of 9 countries not including India, with reference to seafood exports to China under HS 03 and HS 16 at 8 digit level– China country level and 5 provinces

• Import - export analysis of seafood products based on imports and exports under HS 03 and HS 16 at 8 digit level– China country level and 5 provinces

• Business and marketing strategies based on consumer behaviour, trends, supply chain formats, promotional strategies, engagement with Chinese market players

• Seafood importers directory – 300 companies

## Major recommendations of the Market Research study

1. There is a tremendous market opportunity for India as evidenced by import demand in China as well as exports from immediate competitors.

2. There is also market opportunity based on import demand in China of products being exported by India to other countries but not to China.

3. To facilitate market expansion and market penetration, globally accepted certifications and accreditations are absolutely mandatory. So needless to iterate to the exporting community there is urgency to equip their credentials in this regard.

4.A risk assessment and risk containment strategy needs to be developed with regard to concentration risks faced by part of the industry.

5.To stay connected with the industry to engage in frequent action focused meetings and collecting feedback with clearly classified categories.

6.Communication of the action taken via trendy digital media.



#### Reports

The study involved collation and analysis of data with respect to imports, exports, markets, distribution channels, associations, research institutions, companies, competing countries, provinces etc. Following reports have been generated as a part of this market research study.

- 1. Competitor Analysis and Market Opportunity
- 2. China Seafood Market and Trends
- 3. Seafood Market trends: Liaoning province
- 4. Seafood Market trends: Guangdong province
- 5. Seafood Market trends: Shandong province
- 6. Seafood Market trends: Fujian province
- 7. Seafood Market trends: Zhejiang province

8. Certifications, Accreditations and Structural consolidation

9. China Seafood Companies Directory

In addition the complete data sets used for the preparation of the above reports have been included. The full report in print form is available with Market Promotion Section of MPEDA for purchase (See Fig. 1 for more information on the rate).

Please see the MPEDA website page (https://mpeda. gov.in/?page\_id=7662) and contact your nearest MPEDA office for more details.

#### Data sources

The following sources for data has been used for analysis -:

http://english.customs.gov.cn/ - Customs statistics China (this is the main data source for data on imports, exports pertaining to Jan to Dec 2019, Jan to Dec 2020, Jan to Apr 2021)

https://tradestat.commerce.gov.in/eidb/default.asp - Import and export Data pertaining to India vis-à-vis world

https://www.wipo.int/patentscope/en/ - Data relating to research and patents published by Chinese universities, companies and institutions

And also used the data from the following sources for cross checking data and validation of hypothesis: https://www.intracen.org/itc/market-info-tools/trade-statistics/

https://oec.world/

https://wits.worldbank.org/Default.aspx?lang=en



Fig. 1: Rate for printed version of Seafood Market Research Study Report on China

## MPEDA organized Webinar on 'The latest trends in Forex markets' with Myforexeye

Webinar on "The latest trends in forex markets" was organized by MPEDA in assocaition with M/s. Myforexeye Fintech Pvt. Ltd., Noida on 2<sup>nd</sup> December 2021. Approximately 90 seafood exporters from different regions has attended the programme.

The Key Note Speaker of the webinar was Mr. Ritesh Victor, Co-Founder & Country Head, Myforexeye Fintech Pvt Ltd. The webinar was inaugurated by Mr. Anilkumar P., Joint Director (Marketing), MPEDA and moderated by Mrs. Anju, Assistant Director (Development & Market Promotion), MPEDA. The webinar covered the methods to manage forex rates, hedging using forward contracts like fixed or window, optimising interest cost for exporters, the current and future position of Rupee and the Myforexeye Mobile Application. Mr.Ritesh Victor highlighted the lack of transparency of forex rates in India and explained various ways to overcome this challenge which is beneficial to the exporters.

During the discussion, Mr.Ritesh also threw light on the focus points that the exporters has to understand in order to ensure complete transparency of forex rates, getting access to realtime forex spot and forward rates, understanding the forex transaction type, learning the forex rate calculation methodology, fixing the bank margin (bank charges on forex conversions), etc.

In the Q&A session, exporters were clarified of their doubts on the forex rate, credit facilities from the bank, fixing the exchange rate, etc. The exporters opined that the session was beneficial for them to understand the fluctuation in the market and optimizing interest cost which will save their export earnings.



## MPEDA Webinar



#### Speaker

### M/s. Myforexeye Fintech Private Ltd, Noida

#### Topic

Trends in forex markets & ways to save forex costs cum techniques to hedge against volatility in forex markets

#### Date

2<sup>nd</sup> December 2021 at 4.00 P.M



Meeting ID: 830 8429 0157 Passcode: 594304 All exporters are requested to participate in this free webinar.

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The webinar concluded with vote of thanks by Mr. A. Sakthivel, Assistant Director (Marketing Services), MPEDA.





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SEM FAST	3 <b>4</b> 3	1

## MPEDA coordinated visit of IAS Officer Trainees to seafood processing unit



A n exposure visit for 10 IAS officer trainees from the 2020 Civil Services batch was arranged to the seafood processing plant of M/s. Febin Marine Foods, Eramalloor, Alapuzha on 24<sup>th</sup> December, 2021 by MPEDA. Trainees were accompanied by Coordinator Mr. Rajesh, and MPEDA- NETFISH State Coordinator Mrs. Sangeetha. The trainees were greeted by Mr. Sankara Pillai R., Deputy Director, MPEDA RD Kochi, who briefed them on the processing requirements and various steps involved in seafood processing.

Mrs. Seema Sanil, Technical Manager of the unit explained about the various quality aspects, infrastructural requirements and certification process, besides the processing methods practiced in their plant. A short corporate video of the establishment was shown and the trainees were taken to the processing line and explained the pre-processing techniques of lobsters, blanching and cooking of squid rings and IQF *Karikadi*.



Queries raised on glazing process, price premium for farmers following BMP's, different steps involved in low risk and high risk production environment, different tests carried out in the in-house lab were clarified by the officials and technical staff of the processing plant.

## Foundation stone laid for Integrated Complex of MPEDA in Bhimavaram in the Golden Jubilee year



Revealing the Plaque

himavaram town in West Godavari district of Andhra Pradesh has been the hub of aquaculture activities since the 1980s and has occupied a prominent place as a shrimp culture and export hub. The potential for aquaculture and allied activities is immense in the region. The Marine Products Export Development Authority (MPEDA) functioning since 1994 Bhimavaram, has been instrumental in the development of the aquaculture sector of the area as well as exports from the town. Through financial assistance schemes, MPEDA has promoted and guided the sector and made it into the most important economic activity of the district. Around 42 processing plants with a capacity of 2,396.57 MT, 44 Storage Premises with a capacity of 30,602 MT and overall 64 exporters of seafood are registered with Sub Regional Division of MPEDA, Bhimavaram. In 2004, MPEDA has established a Quality Control Lab at Bhimavaram to undertake analytical activities under the National Residue Control Plan (NRCP). Later in 2009, an ELISA lab was also set up in the town for enabling the farmers to test their crop for antibiotic residues under



Mr. Grandhi Srinivas, Honourable MLA, Bhimavaram laying the foundation stone

the Pre Harvest Test certification scheme. Currently, the lab also caters to commercial samples and preexport testing samples are also analyzed by the lab. MPEDA's presence in the region in the form of Export cum aquaculture office, Quality Control & ELISA



Chairman, MPEDA places a stone

laboratories has immensely accelerated the production and export of farmed shrimp from the region, generating significant foreign exchange. During FY 2021-2022 April to October, 1,99,410 MT, of seafood worth ₹ 11,951.04 Crore was exported from the ports of Andhra Pradesh. The aquaculture production from Andhra Pradesh for the year 2020-21 was 6,34,672 MT of which 65% of the total shrimp production from Andhra Pradesh was reported from East Godavari, West Godavari & Krishna districts.

The Quality Control laboratory of MPEDA at Bhimavaram analyzes around 2300 samples annually and nearly 1200 PHT samples. The Laboratory started with testing of 27 parameters and then later on enhanced the scope to 81 parameters. The Laboratory is fully equipped with sophisticated equipments like UHPLC-MS/MS, GC-MS/ MS with Micro-ECD, UHPLC-FL and Fully Automated ELISA Reader. Laboratory has been successfully participating and achieving good Z-score in International/ National Proficiency Testing Programmes. In addition, MPEDA also has ELISA labs at Amalapuram and Kakinada to screen farmed shrimp for banned antibiotics as per the farmers' requests. Considering the importance of multifaceted activities of MPEDA in Bhimavaram, it was necessitated to establish a permanent set up to house MPEDA offices and QC & ELISA labs to function more effectively in discharging mandate of MPEDA among the stakeholders. The Agriculture Market Committee of State Government of Andhra Pradesh was generous to allocate 60 cents of land to MPEDA in the premises of Agriculture Market Committee at Bhimavaram.

With the approval of Department of Commerce, Government of India, the foundation stone for the construction of Integrated Office Complex of MPEDA at Bhimavaram was laid on 29<sup>th</sup> December 2021 by Mr. Grandhi Srinivas, Honourable Member of Legislative Assembly, Mr. K. S. Srinivas IAS, Chairman, MPEDA and Mr. C. Vishnu Charan IAS, Sub Collector, West Godavari district in presence of other invited dignitaries - Mr. Kandregula Narasimha Rao, Hon'ble Member, Zilla Parishad Territorial Council, Bhimavaram, Mr. Thirumani Yedukondalu, Chairman, Agriculture Market Committee, Bhimavaram, Er. P. Sai Krishna IES, Superintending Engineer, Central Public Works Department, Mr. U. Kasi Viswanadha Raju, Chairman, Ananda Group of companies, Bhimavaram, Mr. I. Surya Rao, President, SEAI, West Godavari district, aquaculture farmers, Seafood exporters, hatchery operators and officers from State Fisheries Department, MPEDA, NaCSA, RGCA, EIA, CPWD etc.

After laying the foundation stone, Mr. Grandhi Srinivas, Hon'ble Member of Legislative Assembly, in his Chief Guest Address appreciated MPEDA for its efforts and continuous involvement for aquaculture and export promotion for the past several years. He told that in AP, more than 50% of the aquaculture production comes from three districts namely West Godavari, East Godavari & Krishna districts. He told that the farmers require quality seed for better production of shrimp and screening of seed is necessary for supply and stocking. He also appreciated Agriculture Market Committee for allocating land to MPEDA to establish and operate a systemized office cum Lab with more features and facilities for the benefit of the sector.

Mr. K. S. Srinivas IAS, Chairman, MPEDA in his key note address, thanked the government of Andhra Pradesh and Agiculture Market Committee for allocation of land to MPEDA. He has also thanked CPWD for their agreement to take up the construction of the project and requested them to complete the project within the stipulated time period. The Chairman thanked all stakeholders for their attendance in the programme. Mr.C.Vishnu Charan IAS, Sub Collector, West Godavari district, Mr. Kandregula Narasimha Rao of Zilla Parishad Territorial Mr. Thirumani Yedukondalu. Chairman. Council. Agriculture Market Committee, Bhimavaram, Mr. U. Kasi Viswanadha Raju, Chairman, Ananda Group of companies, Bhimavaram and Mr. I. Surva Rao, President, SEAI, West Godavari district offered felicitations. Er. P. Sai Krishna, IES, Superintending Engineer, CPWD briefed the action plan to complete the construction as per the schedule. Earlier, Mr. A. Jeyabal, Joint Director, Regional Division, MPEDA, Vijayawada welcomed all the dignitaries, stakeholders and officials. The programme concluded with vote of thanks by Mr. V. I. Hakkim, Deputy Director, MPEDA, Sub Regional Division, Bhimavaram.

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## Exportable fishery resources of Andaman & Nicobar Islands

Ujjwal Dhali, Fisheries Technical Assistant, MPEDA Desk Office , Port Blair & Dr. Ansar Ali. A, Deputy Director, MPEDA Chennai

#### Introduction

he Andaman and Nicobar Islands located in the Bay of Bengal consists of 572 islands and has a total coastal length of 1,962 km, which is 24% of India's coastline. These Islands are spread over 8200 sq.km of geographical area and have 0.6 million sq.km of Exclusive Economic Zone, which accounts for 30% of India's total EEZ. The continental shelf area of 35,000 sq.km and the mangroves provides feeding and nursery ground for juveniles of a large number of marine species.

The A& N Islands are divided into three major areas-North, Middle and South Andaman. These islands are encircled by large coral reef banks and vast stretches of open ocean, which are habitats for large number of demersal and pelagic fish stocks. Estimates by the Fisheries Survey of India (FSI) suggest that these Islands are home to 9.2% demersal, 57.1% coastal and 33.7% oceanic fish stocks.

Over 282 commercially important species are present in the waters of the A&N Islands, making it an area of prominence for marine resources.

Some of the commercially important fish species landed in the A&N islands are sardines, perches, silver bellies, carangids, mackerels, seer fish, tuna, mullets, prawn and other crustaceans. 50% of the catch are consumed locally and the rest is transported to mainland by ship or flight for export or consumption purpose.

#### Major landing centers:-

At present there are 16 landing centers (Table1) and active fish landings takes place in almost all these landing centers. Commonly landed fishes are mackerels, tunas, carangids, snappers, mullets, and groupers.

SI. No	Name of places						
	South Andaman						
1.	Junglighat						
2.	Panighat						
3.	Guptapara						
4.	New Wandoor						
5.	Shaheed Dweep (Neil Island)						
6.	Hutbay						
7.	Swarajdweep (Havelock)						
Middle Andaman							
8.	Pokkadera (Mayabander)						
9.	Rangat Bay						
10.	Yerrata (Rangat)						
11.	Uttra						
12.	Betapur						
	North Andaman						
13.	Durgapur (Diglipur)						
	Nicobar						
14.	Tee Top, Car Nicobar						
15.	Campbell Bay						
16.	Katchal (under construction)						

Table 1: Major fish landing centres in A & N Islands

#### Exportable varieties of fishes in the islands

#### Tunas

The main species of commercially caught tuna in A & N islands are *Auxis rochei, Euthynnus affinis, Thunnus tonggol, Auxis thazard* and *Katsuwonus pelamis.* They are caught by purse seine and king mackerel gill nets from the Andaman waters. The peak season for

small tunas in the Andaman seas is during northwest monsoon periods. Annually around 116 tons of tuna are commercially transported to mainland.



Fig. 1: Thunnus tonggol



Fig. 2: Auxis rochei



Fig. 3: Katsuwonus pelamis

#### **Groupers and Snappers**

This group constitute the major commercial fishes of A & N islands and are the important component of the commercial catch. The genus Epinephelus and Lutjanus is represented by around 26 species each from these islands. Some of the species of groupers are *Epinephelus areolatus, E. chlorostigma, E. coioides* and *E. malabaricus* and snappers such as *Aphareus rutilans, Lutjanus argentimaculatus, L. ehrenbergii, L. griseus, L. campechanus* are widely distributed.

Long lines, trawls and hand lines are the most commonly used gears for groupers and snappers. Groupers and snappers from the islands are exported in chilled form from the mainland after transporting it there. Annually around 290 tons of groupers and 225 tons of snappers are commercially transported to mainland.



Fig. 4: Epinephelus areolatus



Fig. 5: Cromileptes altivelis (Humpback Grouper)



Fig. 6: Lutjanus sebae (Two spot red snapper)



Fig. 7: Lutjanus bohar (Emperor red snapper)



Fig.11: Variola louti (yellow-edged lyretail)



Fig. 8: Plectropomus leopardus(groupers) (leopard coral grouper)



Fig. 9: Lutjanus campechanus (Red snapper)



Fig.10: Aphareus rutilans



Fig. 12: Aprion virescens (Gray Snapper)

#### Mackerel

The mackerel fisheries are mainly composed of 3 species *Rastrelliger kanagurta*, *R. brachysoma* and *R. faughni* in the A&N Islands. Indian mackerel, *R. kanagurta* of different sizes are widely distributed in the Andaman sea. The gears used to catch mackerels are mainly the ring nets. The harvesting of mackerels occur in the islands throughout the year, but sometimes due to inclement weather condition like cyclone, heavy rain, heavy waves the fishermen would not be able to venture into the sea for fishing. Annually 870 tons of mackerel are commercially transported to mainland.



Fig.13: Rastrelliger kanagurta



Fig.14: Rastrelliger brachysoma



Fig.17: Caranx papuensis (Brassy trevally)

#### Carangids

There are 48 species belonging to the family Carangidae in the Andaman seas. Species such as *Caranx ignobilis, C. melampygus, C. papuensis Atule mate, Selar crumenophthalmus, Carangoides talamparoides, C. malabaricus* are the major carangids landed. Peak landing season is from April to July. Spearing and loglines are the commonly used gears to catch carangids. Annually around 80 tons are transported to mainland.



Fig.15: Caranx melampygus



Fig.16: Atule mate ((yellowtail scad)

#### Shrimps

In Andaman mainly three varieties of shrimps are found locally such as *Penaeus indicus, P. monodon* and the fresh water prawn *Macrobrachium rosenbergii*. In places such as Diglipur (Kishorinagar/Kalighat/Swarajgram), Rangat (Betapur) and Port Blair (Shoal bay) shrimps are caught or cultured in small quantity. The farming of shrimp in Andaman is getting popular and at present there are three farmers from south Andaman culturing shrimps in 4 Ha area. *P. monodon* has very good local market and commercial value, sold at Rs. 750 per Kg, whereas *P. indicus* is sold at Rs. 500-550 per Kg.

#### Crab

Fattening and grow out practices of mud crab, *Scylla serrata* and *S. olivacea* are practiced in brackish water with mangroves. Approximately 120 tons of crabs per year are commercially transported to mainland. Peak harvest /landing season is during April to July.



Fig.18: Scylla serrata



Fig.19: Scylla olivacea

Seafood exports from the Andaman & Nicobar Islands At present there are 38 fish traders and one MPEDA registered seafood processing unit with freezing facility in Andaman and Nicobar islands. The traders are supplying fish to the exporters in mainland. On an average 60 tons of fishes are exported per month from the islands through the exporters from mainland via Chennai or Kolkata to overseas markets. These exports are happening mainly in the chilled form. Andaman and Nicobar islands are located geographically close to South East Asian and Far East Asian countries compared to mainland. There is potential for establishing more fish processing units especially for fin fishes and for tuna fish based value added units. The Industries Department, Administration of Andaman and Nicobar Islands is providing financial assistance for setting up of processing units. More fresh catch can be exported in chilled form from the islands directly to South East Asian countries, once the international airport starts its operation.

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## Mackerel remained topmost species landed in December

Dr. Afsal V.V. & Dr. Joice V. Thomas NETFISH-MPEDA

andings of marine fishery resources at selected major harbours/landing centres in India is monitored and recorded on a real-time basis by NETFISH. The Harbour Data Collectors engaged at around 100 landing sites across the country's coast collect the name, registration number and type of fishing vessels arriving every day at the harbor / landing centre and the species-wise quantity and rate of catch landed by these vessels and these data are being saved in the MPEDA Catch Certificate website. This report presents the species-wise, harbour-wise and state-wise fish catch and boat arrival trends observed during December 2021.

#### I. OBSERVATIONS ON FISH CATCH

Marine fishery resource landings recorded from the 98 selected landing sites during December 2021 was totalled to 89,738.20 tons. The total catch was comprised of about 48,398.88 tons (54%) of pelagic finfish resources, 24,351.99 tons (27%) of demersal finfishes, 9049.82 tons (10%) of Crustaceans and 7,937.51 tons (9%) of Molluscs (Fig.1).



Fig. 1: Catch composition of marine landings recorded in December 2021

253 species were recorded in the month, of which five top contributors were *Rastrelliger kanagurta* (Indian mackerel), *Decapterus russelli* (Indian scad), *Lepturacanthus spp.* (Ribbon fish), *Otolithes spp.* (Tigertooth croaker) & *Nemipterus japonicus* (Japanese thread fin bream)(Table1).

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Table 1.	iviajoi iisii	species iariu	eu in Dece	11001 2021

SI. No:	Common name	Scientific name	Qty. in tons
1	Indian mackerel	Rastrelliger kana- gurta	8,424.24
2	Indian scad	Decapterus russelli	6,549.45
3	Ribbon Fish	Lepturacanthus spp.	6,270.25
4	Tiger- tooth croaker	Otolithes spp.	4,763.36
5	Japanese thread fin bream	Nemipterus japoni- cus	2,839.94

The various species of fishery items recorded during the month were categorised into their common groups and the catch trend was analysed.



Fig. 2: Major fishery items landed in December 2021

Mackerels, Scads, Croakers, Ribbon fish and Coastal shrimps were found as the major contributors, together forming 45% of the total catch (Fig. 2). Other major items reported were Tunas and Cuttlefish, each contributing 5,185 and 4,107 tons respectively.

Mackerels, Scads and Ribbon fish were the major contributors among the pelagic finfishes, whereas Croakers and Japanese threadfin breams were the most landed items among the demersal finfishes.

About 65% of the Crustacean catch comprised of different species of coastal shrimps, of which the Karikkadi shrimp was the most landed item. Among Molluscan resources, cuttlefish and squid were the major items landed.

**State-wise landings:** West coast states led the tally, and Gujarat stood first with a catch of 22,397.34 tons (25%), followed by Maharashtra and Karnataka with a share of 17,924.89 tons (20%) and 14,651.99 tons (16%) respectively (Fig.3). The lowest landing of 121.50 tons was reported from the Lakshadweep islands.



Fig.3: State- wise landings (tons) in December 2021

**Harbour-wise landings:** New Ferry Wharf harbour in Maharashtra recorded the maximum fish landings of 6,900.18 tons (7.7%), followed by Mangalore in Karnataka and Veraval in Gujarat, with 5,408.11 tons (6%) and 5,243.78 tons (5.8%) respectively.

The Dahanu harbour in Maharashtra recorded the lowest landing (6.36 tons).



Fig.4: State-wise boat arrivals during December 2021

#### **II.OBSERVATIONS ON BOAT ARRIVALS**

42,565 fishing vessel arrivals were recorded from the 98 fish landing sites in December 2021. Statewise figures (Fig.4) show that the highest number of boat arrivals had occurred in Gujarat (24%), followed by Kerala (19%) and Tamil Nadu (15%). Porbandar (2400), Mangrol (1962) and Veraval (1897) harbours of Gujarat had the highest fishing vessel arrivals during the month.

**Summary:** In December 2021, a total of 89,738.20 tons of sea catch was landed and 42,565 of boat arrivals were reported from 98 major fishing harbour/landing centres along the 9 maritime states and Lakshadweep Island. A declining trend in the marine landings was observed compared to previous months.

A decline by 2141.52 tons in catch was there compared to November 2021, contrary to an increase of 3563 boat arrivals recorded in the month compared to previous month. Pelagic finfishes remained the major contributor to the total landings, and Indian Mackerel (*Rastrelliger kanagurta*) remained as the most landed fish species.

Various species of mackerel together formed the most landed fishery item in December, pushing Scads to the second position. Gujarat had the maximum catch and boat arrivals. New Ferry Wharf harbour had the maximum catch landed among harbours, while Porbandar harbour had the maximum boat arrivals recorded.



## Masmin: The story of a unique product from Lakshadweep

Ajith Raj R., Senior Research Assistant, Sustainable Fisheries Program , Dakshin Foundation, Bangalore

thriving tuna fishery and tuna-based product locally called masmin is the primary source of livelihood and income for a good number of people in Lakshadweep. It has a distinct identity from other tuna fisheries operating in the country in terms of scale and technology. Lakshadweep tuna fishers use pole and line fishing technique, which is relatively simple yet involves many fishing skills. They operate on a much smaller scale than other fishing techniques like purse-seining and long-lining that targets pelagic tuna resources. In the pole and line method, once fishers identify a tuna shoal, they make the school trail the boat by creating a feeding frenzy using small bait fishes like herrings. The pole and line method, as the name indicates, involves a bamboo or a fibre pole to hook fish one by one from the tuna school that trails the boats. It is an age-old labour-intensive method of fishing; that requires relatively small capital. However, this fishery makes up a significant 14% of the total tuna landing in India every year. In India, Lakshadweep is the only place where pole and line fishing is practised hence, not many people from the mainland are aware of this fishing method. Although it is less known to a

majority of the mainlanders, the pole and line fishing technique is known globally for its sustainability attributes. As a species-specific fishery with virtually no bycatch, it is known as an ecofriendly fishing technique. Additionally, as a labour-intensive technology, it can create significant employment opportunities and hence supports the social and economic sustainability of the fishing community.

#### A special product from a unique fishery

Lakshadweep records over fifteen thousand tons of fresh tuna landings annually. This volume is much more than the market demand for fresh fish tuna on the islands. Although the mainland has good market prospects for fresh fish, constraints like geographic isolation and poor connectivity have been stopping fishers from selling their products there. As a strategy to prevent the wastage of excess catch, islanders had to adopt a long term fish smoking and drying based preservation technique. For preservation, islanders adopted a traditional method where the cleaned and filleted tuna is smoked and dried to produce *masmin* 



which is also known as *Hikki mas* in Minicoy island in the Lakshadweep UT. This product has a shelf-life of about one year.

Masmin making is a time-consuming and labourintensive process that reached the Lakshadweep from the Maldives. The pole and line fishing technique also reached the island from the Maldives through Minicov island which is geographically closer to the island nation. The masmin making process begins with boiling cleaned fish on the first day and ends with sun drving the product on the tenth or eleventh day. Before boiling the fish, fishers slice the edible meat from the skipiack tuna catch as soon as it is brought ashore. The meat will then be processed by cooking in seawater, smoked using the coconut tree leaves and other parts of the plant and finally, it is sun-dried in the open for about 1-2 weeks. Masmin is a black coloured, hard, and odourless product. It appears like a piece of wood at first sight. The smoking and drying processes in the production process have a direct influence on the nutrient content. flavour, colour, shape, and texture of masmin. In most of the islands in Lakshadweep, fishers themselves put their labour into making masmin. However, unlike other islands, women are also involved in the masmin making process in Minicoy island.

#### Masmin: The lifeline of Lakshadweep economy

Although *masmin* making was adopted as a preservation technique to improve the shelf-life of tuna, the *masmin* trade became a primary source of income for thousands of tuna fishers in Lakshadweep. The



product has already earned a tag as "the Lakshadweep product". Over 90% of the total tuna landings in Lakshadweep is being converted to *masmin* which is being produced at a much higher scale than being traded afresh on the island. In terms of scale, *masmin* has already become a major traded commodity steering the economic fulcrum of the islands. *Masmin* is regarded as a pricey commodity in the international markets, however, the product doesn't have a major consumer demand in the domestic markets.

Therefore, primarily the Lakshadweep masmin is now being exported to Sri Lanka and Southeast Asian countries to some extent where the consumer demand is higher. It reaches these markets through a supply chain that includes intermediaries and local agents operating from Lakshadweep and the mainland. The port in Tuticorin is the exporting hub for the masmin from both Lakshadweep and other places in India. Interestingly, for ages, most of the fishers on the islands have been depending on this supply chain for marketing their produce. Although this supply chain is the lifeline of fishermen in Lakshadweep, it is sparsely understood.

#### **Declining masmin price**

The local agent who could either be an islander or from the mainland is the primary contact for fishers to sell their product. For the past five years, they offered a procurement price that falls within a range of Rs 350-



500 for a Kg of masmin for fishers. During that time, islanders could additionally make income by selling fresh fish to collection boats that come to the islands from the mainland. However, the pandemic disrupted the smooth functioning of masmin supply chains at an unprecedented scale. It also stopped collection boats from outside to enter the islands which further increased the dependence of fishers on masmin for income. Supply chain related disruptions brought down the price of masmin to its lowest in a decade to Rs 120-180<sup>1</sup> for a Kg, which is much lower than what they were getting in the previous years.

Apart from supply chain disruptions, other external issues such as the trade embargo set by Srilanka on dried fish imports and the increased supply of masmin at lower prices from places like Tuticorin have deepened the masmin price crisis. This series of events negatively affected tuna fishers on the islands who are excessively dependent on masmin for income.

#### Tackling the challenges and beyond

These issues have exposed the risks and vulnerabilities associated with the current masmin marketing system in Lakshadweep in which fishers rely on a single supply chain for exporting. As a fix to the fluctuating prices of the product, fishers with whom we interacted on the field suggested the need for government intervention to procure fishery products with minimum price support and improve accessibility for new markets outside the conventional supply chain. In the long run,



a diversification of the product range beyond *masmin* is also required to reduce the vulnerability of excess reliance of fishers on a single commodity. A diverse range of products will make the island economy more resilient to unexpected external economic shocks in the form of a freefall in the price of fishery products like *masmin*. A diversification process requires major interventions for improving required infrastructures such as ice availability, cold storage and transportation facilities to the mainland. The government has already rolled out projects that are supporting the diversification process through the promotion of products like *Katsuobushi* and recently started building better cold storage and ice plant facilities. However, it is in a nascent stage.

Fishers in Lakshadweep are skilled in making *masmin* and have a traditional infrastructure in place for its production. In the short run, pole and line fishers may find it difficult in making a quick transition to the making of other products. Therefore, a diversification strategy leaving behind *masmin* won't be helpful in the short term. To deal with short-term challenges, it is imperative to find solutions for *masmin* price fluctuations. Therefore, product diversification strategies should go in tandem with interventions that aim at improving *masmin* making process in Lakshadweep to be on par with international quality standards will be significant progress in positively impacting the export prospects of the product and its profitability. It also requires



some logistic support and expertise from concerned stakeholders.As a sustainable fishery with unique prospects, the pole and line fishery is an ocean of excellent opportunities. However, it is important to tap into the benefits that the fishery offers through creative interventions. Creating a conducive environment for improving quality of the product and supporting market mechanisms will improve the market prospects of Lakshadweep *masmin*. However, it is important to have detailed consultation with community members to decide upon the best production practices.

*Masmin* as a major driver of the island economy is crucial in supporting the livelihoods of thousands of islanders. Therefore, any interventions intended to improve the economic prospects of *masmin* will create a "multiplier effect" by promoting social and economic development of island communities.

<sup>1</sup>The author is a reasearcher working in Lakshadweep. Information on the trading price range of masmin has been obtained from direct conversation that he had with the fishers in Lakshadweep



## Foundation stone laid for Crossover bridge at Padapanapeta, Srikakulam district



The objective of NaCSA-MPEDA is to enable aquaculture farmers to adopt sustainable and eco-friendly farming practices to produce quality and safe aquatic products for export and domestic markets.

NaCSA-MPEDA has 620 active societies as of now, in which 18 societies are identified under the category of SC/ST societies in Andhra Pradesh and about 408 farmers are doing culture in 285.26 Ha WSA under SC/ ST category. Due to lack of infrastructure and finance, the farmers are able to do only one crop per annum and the Nationalised and Cooperative banks are not providing any credit facility to help the Society Farmers. Gara Mandal is one of the potential areas for shrimp farming in Srikakulam district. There are 4 SC/ST & 4 general societies functioning and farmers are depending on the Uppigeda creek at Padapanapeta village. In addition, 11 villages surrounding the same creek in the Mandal with a population of 40,000 also have to cross the Uppigeda creek for their daily needs.

The farmers of the area face great difficulty in carrying the farming inputs to their ponds, and to transport the harvested crop across the creek. Otherwise, they have to make an additional travel of around 20 Kms. A



registered Society M/s. Damayanthi AFWS, Chintuvalasa, of Gara Mandal, Srikakulam approached NaCSA-MPEDA with a request to support construction of a crossover bridge over Uppigedda creek. Based on the request, NaCSA-MPEDA has initiated the proposal to construct a Crossover Bridge across the Uppigeda creek jointly with the district administration, as it would help the aquafarmers of the Mandal tremendously.

The foundation stone laying ceremony of the crossover bridge was held on 30<sup>th</sup> December 2021. The foundation stone was laid by Mr. Dharmana Prasada Rao, Hon'ble Member, Andhra Pradesh Legislative Assembly representing Srikakulam constituency, and Dr. Sidiri Appalaraju, Hon'ble Minister, Animal Husbandry and Fisheries Department, Govt. of Andhra Pradesh along with Mr. K. S. Srinivas IAS, Chairman, MPEDA & President, NaCSA, Mr. Srikesh Lathkar IAS, Collector and District Magistrate, Srikakulam.

Mr. K. Shanmukha Rao, CEO, NaCSA, Mr. A. Jayabal, Joint Director, MPEDA, Mr. P. V. Srinivas Rao, Joint Director of Fisheries, Srikakulam and other officials of Srikurmam Panchayat Gara Mandal, Srikakulam, MPEDA, NaCSA, and Society Farmers of NaCSA were present on the occasion.

Mr. Shanmukha Rao, CEO, NaCSA welcomed all the dignitaries & briefed the requirement of Crossover bridge in the area for the benefit of small-marginal farmers, fishers & general public. Mr. Dharman Prasad Rao, Hon'ble MLA, Srikakulam & Dr. S. Appalaraju, Hon'ble Minister for Animal Husbandry & Fisheries, Govt. of Andhra Pradesh addressed the gathering. Chairman, MPEDA & President, NaCSA in his key note address spoke on the requirement and benefit of the Crossover Bridge on the Uppigedda Creek at Padapanapeta village. He said that MPEDA-NaCSA has already given Rs 187.5 Lakh as 75% share of Central Government assistance and appreciated the District Administration for sanction of Rs 62.5 Lakh from the CSR Fund for the crossover bridge.

Mr. Srikesh Lathkar IAS, Collector, Srikakulam thanked the authority for the bridge project and assured to help further in this regard. Mr. Gora Suresh, President, M/s. Sri Damaynthi Aqua Farmers Welfare Society, Chintuvalasa, Gara Mandal proposed the vote of thanks.





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## COVER STORY

## Strategies and action plan for seafood exports by 2025– Series 7

K. S. Srinivas IAS. Chairman. MPEDA



The series published by Chairman, MPEDA on the strategies and action plan envisaged by MPEDA in enhancing the seafood exports from the country to achieve the goals set for 2025 concludes by this chapter. During the previous chapters, Chairman, MPEDA has discussed on the current status of exports, constraints in the production level, SPS TBT issues faced by Indian seafood exporters, strategies for export promotion, modernization of capture fisheries sector to reduce post harvest losses and increase the economic value, interventions that would enhance the production and productivity in aquaculture sector to increase the supply of quality raw material for exports, and the strategies to be adopted to enhance the share of value added products in our seafood exports. In this last series, quality assurance measures to be adopted to enhance the image of Indian seafood in overseas markets and mitigation measures to reduce quality rejections, especially due to antibiotic residues are discussed.

#### Introduction

systems. This result in rejection of Indian farmed shrimp consignments in major markets such as EU, markets with special reference to antibiotic residues.

nauthorised usage of banned antibiotics is a Japan and USA due to the presence of residues of major concern in the hatchery and farming banned antibiotics. Table 1 below shows the details of rejection of Indian seafood consignments in major

Table 1: Details of rejection of Indian seafood consignments in major markets									
	Rejections								
Year		EU		USA	Jap	ban	Total		
	Total	Antibiotic	Total	Antibiotic	Total	Antibiotic	Total	Antibiotic	
2015	17	5	43	15	9	7	69	27	
2016	27	5	61	28	3	3	91	36	
2017	39	15	47	3	7	6	93	24	
2018	37	13	52	8	5	4	94	25	
2019	11	4	30	6	5	5	46	15	
2020	13	4	71	11	5	5	89	20	
2021	22	3	47	7	5	5	74	15	

In addition to the above, there was a case of detection of antibiotic residue in Indian shrimp consignment from UK in 2021



Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
India		4	2	12	13	20	16	26	31	6	11	8	3	12	4	5	15	13	4	4	3
Bangla- desh				6	14	27	5	14	48	4	2			1		2	1				
China	22	35	1	1		1	10	5		1	3		6	2							
Vietnam	20	45	3	5	1	3	1		1	2		1		2	3		1	1			
Thailand		43	2	3	1	1	3	4													
Indone- sia	4	22	2	10	1	1	1	1													
Myanmar		1	2	1	1		1		1												
Sri Lanka									6												
Malaysia			1	2			1	1					1								
Ecuador		1	1		1									1							
Philip- pines				1	1																

Table 2: Rejections in EU due to banned antibiotic residue in shrimps- a comparison between exporting nations

Table 2 indicates the rejections in EU on account of antibiotic residue in farmed shrimps. It could be seen that India is the only exporting country that contribute to the rejections since 2019 in farmed shrimp consignments. The FVO Mission reports repeatedly calls for an effective mechanism for better control over the availabilitv of veterinary medicinal products in the market and access of farmers to such products.

The market share of Indian shrimps have fallen from 17.66% in 2016 to 12.31% in 2020 due to the stringent actions adopted by the EU against the antibiotic residue incidence in cultured Indian shrimp consignments (Fig.1). The EU also increased the sampling for cultured Indian

Fig.1: EU % export share - Indian farmed shrimp (USD value)

shrimps from 10% to 50% in October 2016, which is applicable to India only. EU had delisted 14 Indian seafood processing units based on the detection of antibiotic residues in their consignments, though 4 of which are now permitted to export sea caught material after extensive bilateral negotiations. Even new



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Indian seafood establishments approved by EU are not c.SHAPHARI certification scheme permitted to export aquaculture material to EU.

#### Monitoring and control measures

There are certain monitoring and control measures in place to ascertain the usage of illegal use of banned antibiotics in aquaculture systems and to take corrective actions. They are detailed below:

#### a. National Residue Control Plan (NRCP)

As mandated by EU regulations, MPEDA implements National Residue Control Plan (NRCP) on behalf of the Export Inspection Council (EIC) of India. The scope of NRCP includes all aquaculture farms, processing establishments, feed-mills and hatcheries linked to and/or intended for export oriented production of aquaculture products; and the testing and certifying laboratories, in order to ensure overall monitoring of the aguaculture products at different stages of production to guarantee safe products from farm to table. A total of 93 parameters in 2 groups in nearly 8,000 samples are analysed annually under NRCP.

Under NRCP, samples from hatcheries, farms, processing units and feed mills are collected and analyzed for pharmacologically active substances. The results of NRCP indicates that the percentage positivity for banned antibiotics from farm samples have increased to 0.93% from 0.25% in 2020. Similarly, the percentage positivity for the same parameters in hatchery samples was 20.39% in 2021, indicating an increase from 20.18% during last year.

#### b.Pre Harvest Testing (PHT) & Certification of aquaculture material

As per the directives of Export Inspection Council of India, MPEDA undertakes Pre Harvest Testing (PHT) and certification of farmed shrimps. Though initially this was performed on all aquaculture material for export, since June 2014, this is mandated only for aquaculture material meant to be exported to EU.

This exercise is done through 16 ELISA labs established by MPEDA in the coastal states and the certification follows an online system. Annually more than 10,000 farmed shrimp / scampi / fish samples are analyzed and certified. There were 5 positive cases under PHT analysis in 2021, compared to zero detections in 2019 & 2020. These detections indicate the illegal use of banned antibiotics in the name of aquaculture inputs in our seed producing and grow out systems.

MPEDA operates SHAPHARI certification scheme with an objective to produce and export residue free shrimps. In the first phase, the scheme is launched for hatcheries. So far, six hatcheries have been certified by MPEDA under the scheme for producing antibiotic free seeds, and another 13 hatcheries are under various stages of certification process. This denotes that antibiotic free shrimp seed production is possible and will reduce the risk of contamination of seeds transferred to grow out systems. Once the seed quality and health is assured, farmers follow the Better management Practices to harvest a residue free successful crop. SHPAHARI scheme is being extended to farms in the next phase, and the guidelines for the same have already been prepared. Pilot projects under the scheme are envisaged in 2022.

#### d. Task Forces by State Fisheries Department

Department of Fisheries, Andhra Pradesh has formed an interdepartmental Task Force to carry out inspections in farms, hatcheries and agua shops as a measure to control the use of banned antibiotic substances. They periodically conduct such inspections and offenders are penalized. States such as Karnataka and Odisha have also notified the formation of similar Task Forces.

During the last 2 years, the antibiotic rejection in the European Union has come down significantly. However, the number of rejections in Japan are stagnant, which risks the market prospects of Indian shrimp there as Japan follows a 100% import inspection regime for farmed vannamei shrimp from India. They have exempted farmed Black Tiger from import inspection for antibiotic residue since December 2020 as India could demonstrate that there were no antibiotic detection cases for the species since 2013. A similar effort is required to seek exemption for vannamei shrimp also in Japanese market, which will augment our exports to Japan exponentially.

MPEDA is raising this issue almost in every forum to sensitize the stakeholders and departments. Extension programmes and campaigns by MPEDA among farmers also cover ill effects of antibiotic residues on market prospects and consumers. More than 4000 such programmes were organized along the coastal states during the last 4 years by MPEDA and its society, National Centre for Sustainable Aquaculture(NaCSA). The Coastal Aquaculture Authority has banned the use of 20 pharmacologically active substances in aquaculture systems. Based on requests, CAA is also initiating monitoring of approved aquaculture inputs to

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ensure that those products continue to maintain quality and purity.

As requested by MPEDA, the Central Drugs Standard Control Organization (CDSCO) has advised the state drug controllers to strictly regulate the sales and distribution of antibiotics as per the provisions of Drugs and Cosmetics Rules 1945, and to sensitize chemists and druggists in respective states to sell antibiotic for veterinary use only based on the prescriptions of a registered veterinary practitioner.

MPEDA has requested the Ministry of Health & Family Welfare and the Central Drug Standards Control Organization (CDSCO) to consider banning the use of Nitrofurans & Chloramphenicol in all food producing animals as is done by many of the importing countries.

#### Mitigation measures suggested

• Considering the continued rejections of consignments in markets such as USA, EU, Japan and UK due to antibiotic residues, a policy decision has to be taken to make PHT mandatory for all farmed shrimps produced and exported from the country.

• Appropriate funds need to be earmarked for replacement & up-gradation of the existing analytical infrastructure in approved laboratory facilities.

• Formation of multidisciplinary task forces by the State Fisheries Departments and regular inspections will help in ensuring that the banned antibiotics are not available or used in shrimp culture. The Task Force could investigate & take appropriate corrective actions when incidences of usages are detected.

• Farmers may opt to purchase seeds from hatcheries certified under "SHAPHARI" scheme of MPEDA, which provides for supply of residue free shrimp seeds. Coupled with Better management Practices (BMPs) farmers will be able to produce residue free shrimp for export supply.

• There is a need to regulate and register farms beyond the jurisdiction of CAA by the State Fisheries departments.

• Based on active surveillance programmes, disease free zones have to be declared to comply to biosecurity regulations by certain markets

• Farmers shall refrain from extra label use of drugs, and shall only use inputs approved by CAA.

• Voluntary Pre harvest Testing and certification of the

crop by farmers will ensure the purity and traceability of the crop. It will also bring in better economic gains to the farmer.

#### Conclusion

As guality of seafood and fishery related traceability and sustainability certifications are major factors for purchase decisions these days, quality testing infrastructure and enforcement of sustainability measures attains utmost importance. The constraints have to be addressed with a systemic approach and the gaps have to be plugged in to enhance our production and processing capabilities. It also requires associated capacity building exercises on quality, traceability and sustainability aspects besides skilling of the farmers and workers to produce quality products that could be promoted under Brand India. There is a huge potential to increase Indian seafood export. However, the continuing Covid - 19 pandemic forces us to revisit the growth of the sector and urge us to place it in a more workable perspective, as all the stakeholders are still reeling under huge turmoil caused by the pandemic situation in export trade. The shortage of containers and the surge in freight charges for exports in 2021 have caught exporters off the guard.

For the sector to grow at the most conservative rate also, policy interventions to enhance the production alongwith an investment of Rs. 33,813 Crore is required, of which Rs.15,460 Crore will be the assistance from Government. Organizations under the Commerce ministry may also consider enhancing export oriented benefits such as Duty free import of ingredients for value addition, export incentives to mitigate the higher tariffs imposed by importing countries on value added products and adverse weight volume ratio while transporting such products. The seafood export can be enhanced through improvement in unit value by way of better quality management and enhancement of unit value, improving the infrastructure in fishing harbors and fishing boats, increasing the production in shrimp aquaculture sector by increasing the area under culture, increasing productivity and diversification of species, increasing the production of value added products, addressing the technical trade barriers such as antibiotic residue, biosecurity and sustainability issues. To top it all, active promotion campaigns need to be organized by effectively utilizing the participation in seafood trade fairs, organizing buyer seller meets, carrying out market research, signing of Free Trade Agreements (FTAs) and branding of Indian seafood in International markets.

(Concluded)





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**RAINBOW IN A BOWL** 

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#### RAINBOW IN A BOWA



#### V. K. Dey

V K Dey has over three decades of experience in diverse sectors of seafood industry in Asia-Pacific region. He was the Deputy Director of MPEDA and then associated with INFOFISH, Malaysia. As part of INFOFISH, he was involved in several studies related to seafood industry in the Asia-Pacific region and beyond, including setting up of Aqua-technology Park for ornamental fish. MPEDA has published Living Jewels, a collection of his articles on ornamental fish.

sian killifishes, better known as panchax, are members of the order Cyprinidontiformes, are small surface swimming fishes. They are native of Asian continent distributed in Cambodia, India, Indonesia, Peninsular Malaysia, Myanmar, Sri Lanka, Thailand and Vietnam. However not found in China and Philippines. They have an elongated and robust body, with convex back at the insertion of dorsal fin and broad mouth and are found in the wild in streams, rivers, low lying paddy fields, swaps and brackish waters. They are plant spawners, lay their eggs on plants. Easy to breed. There are eight valid species known today, of which four species are very popular in the context of aquarium interest, which are Aplochelius dayi (Green panchax), A. lineatus (striped panchax), A. panchax (Blue panchax) and A. blockii (rainbow panch.ax).

A. dayi (green panchax), known as Ceylon killifish among the hobbyists, is a native of Sri Lanka. Found in the brackish water environment mostly in the mangrove areas, rural streams and drains. They prefer moderately hard and alkaline water with a temperature ranges from  $24 - 27^{\circ}$ C. Very easy species to keep and breed. They eat all kinds of feed.

A. lineatus are found in three different colour variations – stripped, gold and red. They are the native of India and Sri Lanka. Their body is elongated and robust with broad mouth, a characteristic of the genus. Dorsal fin positioned above the hind part of the large anal fin which in the rear end pointed in male and rounded in female. The second pectoral fin ray is elongated, reaching back to the start of the anal fin in the female, considerably further in male. In the caudal fin, the central rays are considerably longer than the others, particularly in the adult males. They can attain a maximum size of 4.5 inches but will mature sexually at 3 inches long. Males and female are about the same size. The ideal water

parameters are temperature  $25.5^{\circ}$ C with pH 6.8 – 7.2 and Hardness around 7. They prefer conditioned water and regular changes of water will keep the fish healthy. They eat floating feeds.

*A. blockii* (rainbow panchax) is very active but not aggressive and most popular fish among all panchax, is a native of Indian peninsula especially in the southern states. Found in the paddy fields, small streams and drains. They breed profusely under favourable water conditions.

With slender body, rounded tail, Aplochelius panchax is better known as blue panchax though by the look of it is green. However, with right lighting in the aquarium they will show a bluish sheen. The females are pale green and have clear fins and a black dot at the base of the dorsal fin. The body is grey above with a shiny white spot on top of head. They are peaceful, grow as large as 6 cm. Found in the mangrove streams in small groups. This is adaptable fish easily recognised by their shiny white spot. It can tolerate and thrive in both freshwater and brackish water. They will spawn if kept a pair or small group in aguarium tank containing a float spawning mop. Water conditions are not extremely important as long as the water is too hard. The water temperature should be maintained at about 26°C with pH level of 6.7 – 7.3 for good results.

The species are quite prolific breeder and the medium sized eggs are picked from the spawning mops and placed in a plastic container to hatch. Depending up on the temperature, they will hatch within two weeks. The fry are large enough to eat live baby brine shrimp and micro worms. *A. panchax* has two sub species viz. *A. panchax panchax*, commonly found in Bangladesh, Nepal, India and Malayan Peninsula and *A. panchax siamensiis* which is found only in Thailand.

 $\mathbf{a}$ 

## Aquatic Quarantine Facility of MPEDA- RGCA achieves milestone in quarantine of *L. vannamei* broodstock

quatic Quarantine Facility (AQF) of MPEDA RGCA has successfully handled and quarantined 2.0 million (20,20,568 no.s) SPF L. vannamei broodstock during the period from 2009 to 2021. This is a milestone by MPEDA - RGCA in its support to the aquaculture of Pacific Whiteleg Shrimp (Litopenaeus vannamei) in India, a shrimp species that contributes more than 92% of the aguaculture shrimp production in the country. AQF has also guarantined over six thousand (6,783) Black Tiger shrimp (Penaeus monodon) broodstock imported from overseas suppliers to support the revival of Black Tiger shrimp aquaculture in India. More than 1.1 million (11, 33,460) Parent Post Larvae (PPL) have been guarantined successfully for broodstock multiplication centre (BMC) for supporting broodstock rearing in our own environment. Mr. K. S. Srinivas IAS, Chairman, MPEDA & President, RGCA lauded the excellent service rendered by Aquatic Quarantine Facility (AQF) of MPEDA-RGCA, Chennai to the shrimp aquaculture sector in India and making the country second largest farmed shrimp producer in the world. Chairman, MPEDA also stated that the Quarantine methods at AQF have effectively prevented the entry of foreign pathogens to Indian waters. AQF,



Chennai is the only facility for aquatic quarantine in the country and has been playing a vital role in augmenting the country's shrimp production and exports, by facilitating quarantine services to the imported shrimp stock, through its stringent quarantine measures and disease screening protocols. Dr. S. Kandan, Director, RGCA said that upon commissioning of the newly developed additional phase- the Phase IV, AQF will be equipped to receive and quarantine more than 5.30 lakh of brooders in a year.



Training programme on "Better Management Practices for sustainable aquaculture"



Dr. K. Gopal Anand, Assistant Director, SRD Bhimavaram delivers a lecture at Matsyapuripalem village of West Godavari



Mr. K. Ramanjaneyulu, Junior Technical Officer, SRD Bhimavaram delivering a lecture



Trainees at Matsyapuripalem Village of West Godavari



View of the participants of the training programme on adoption of BMPs in shrimp farming & species diversification organized by RD, Bhubaneswar at Astraga village



Field visit of the participants of the training programme conducted at Astraga village of Puri district, Bhubaneswar



Training programme on "Eco-friendly and sustainable aquaculture through species diversification"



Mr. Sankara Pillay, Deputy Director, MPEDA RD Kochi handles technical session at Nilambur in Malappuram district



Distribution of training certificates to the participants of the programme at Nilambur



MPEDA RD, Kolkata Officials and participants of the training programme conducted at South 24 Parganas



Certificate distribution to the participants of the programme at South 24 Parganas



Field visit of trainees at South 24 Parganas

## Awareness campaign on antibiotics in aquaculture



Participants of the antibiotic awareness campaign conducted at Killai

wareness programme on antibiotics in aquaculture was conducted for farmers at Kallimedu, Maharajapuram, Jambuvanodai South, Thirupoondi and Killai villages by MPEDA- SRD Nagapattinam. The antibiotic campaign was organized to spread awareness on the abuse of banned antibiotics, veterinary medicines and chemicals in aquaculture, importance of farm enrollment with MPEDA, traceability, requirements for farm enrollment with MPEDA, role of farm enrollment in e - Santa and cooperative society registration.

The fundamentals of NRCP system was explained to the farmers during the campaign and they were urged to utilize the MPEDA ELISA Lab facility for pre harvest testing (PHT) at Nagapattinam and Pattukottai.



Participants of the awareness campaign conducted at Jambuvanodai south

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## China's new regulatory requirements for imported food products

Ebeena Francis, Sree Reshma Raju, V. Vinod, Dr. Biji K.B. & Dr. Ram Mohan M. K., Quality Control Section, MPEDA

#### INTRODUCTION

hina has today emerged as a formidable trading power that is wielding its overall economic strength to assert itself across the globe. As the world's largest exporter and second largest importer, China recorded a trade surplus of USD 535.37 billion in 2020 with an increasing trend over the last five years. As of September 2021, China exported merchandise worth USD 306 billion and imported USD 239 billion, resulting in a positive trade balance of USD 66.7 billion. This was despite the global economic slowdown, which had led to decline in trade among countries as well as the criticism of China regarding COVID-19 issue.

Although China is one of the largest seafood traders in the world, seafood is not included in China's top 10 major export and import items by value. In 2020, the value of seafood export from China totalled USD 18.3 billion (0.71% of total export) with a decrease of 8% from 2019 (USD 21.5 billion) and the total import value of seafood from China totaled USD 12.7 billion (0.61% of total import) with a decrease of 20% from 2019 (USD 15.6 billion). Key part of China's seafood imports are raw materials for various seafood industries. The lack of industrial activity due to Covid-19 pandemicinduced lockdowns and strict Covid-19 scrutiny at local governance levels resulting in the slow container movement could be the reasons for the fall in the volume of seafood imports to China.

India and China today represents Asia's two largest and most dynamic economies which are emerging as new trend setters in international relations. The bilateral trade between India and China has grown four-fold in the past decade. For the first time in 2021, the IndiaChina trade volume is set to cross USD 100 billion mark with shipments hitting USD 90 billion after three quarters. In 2020-21 fiscal years, total value of exports to China was USD 21.19 billion, which is around 7.26% of India's total exports that year and the total value of imports from China was USD 65.21 billion, which is around 16.53% of India's total imports. During the first seven months of 2021-22 (April-Oct), total value of India's exports to China crossed USD 14 billion and total value of India's import from China crossed USD 51 billion. This is higher than the export and import value during the same period in 2020-21 by around 16% and 52%, respectively.

The major chunk of the Chinese imports to India is held by electrical equipments followed by mechanical appliances and organic chemicals among others. India's top export items to China are ores, slag and ash followed by organic chemicals, iron and steel among others. On the diversification front, India's exports to China are evidently more diverse compared to China's exports to India, which is highly concentrated and intensive towards fewer selected products.

China is currently the second largest seafood export destination of India. In 2020-21, India has exported 2,18,343 MT of seafood worth USD 939.17 million to China, which is around 22 % of India's total seafood exports. However, there has been a sharp decline in the Indian seafood exports to China by 32% in 2020-21 because of Covid-19 restriction. But the first seven months of 2021-22 presents a different story. During the period of 2021-22 (April-Oct), India's seafood export crossed USD 691.27 million, not only surpassing the value of 2020-21, but also the value of exports in 2019-20 (year prior to the pandemic) during the same period by around 40% and 11.6%, respectively.

In the first seven months of 2021-22(April-Oct), India's share in China's seafood imports stood at 9% revealing the significant presence of Indian seafood products in Chinese markets. But despite the vast opportunities emerging from this fast-growing market, the process of sending seafood products to China and getting them sold is getting difficult due to China's inconsistent import regulations. China being the second largest importer of Indian marine products, whenever China introduces new regulations regarding import seems to have landed Indian seafood exporters in trouble. In addition, considering the Covid- 19 scenario prevailing in the world, China has also issued technical guidelines for the prevention and control of Covid-19 in the food industry. The hard stand taken by Chinese import authorities on the detection of Covid -19 nucleic acid material in seafood packages has resulted in the indefinite suspension of 61 Indian seafood processing establishments since November 2020. In this article, the new import requirements released by China that is expected to introduce significant barriers to the food and agricultural exporters in India are discussed.

## New Registration Requirements for Food Products exported to China

On 12 April 2021, the General Administration of Customs of China (GACC) issued two crucial Regulations, Order No. 248 ("Administrative Measures for Registration of Overseas Manufacturers of Imported Food") and Order No.249 ("General Administration of Customs Measures for the Administration of Import and Export Food Safety") related to the export of food products to China. These regulations sets out new requirements for the registration of overseas food manufacturers that export food products to China and the requirements governing the inspection, evaluation and labeling of foods products exported to China, respectively. Both regulations come into force from 1 January 2022, replacing the previous regulations. An overview of the two regulations is given below with a special emphasis on some of the new policies about the fish and fishery products.

#### Order No. 248

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The most significant change in the order no 248 is that the registration regulations require all overseas food manufacturers, processors, and storage facilities of food products exported to China (hereinafter referred to as "overseas manufactures") to be registered with GACC as from 2022.

As per the legislation currently in force, the four categories of products (including aquatic products, meat and meat products, dairy products, bird's nest and their products) were already subject to facility registration with the Chinese government through the competent authority of the exporting country (region).

In addition to the current four food categories, the new registration regulations extends the obligation of customs registration through the competent authority of the exporting country (region) to another 14 categories of products (which cover eggs and egg products, oils and fats, oilseeds, stuffed wheaten foods, edible grains, fresh and dehydrated vegetables and dried beans, seasonings, nuts and seeds, dried fruits, unroasted coffee beans and cocoa beans, special dietary foods, and health foods).

The overseas manufacturers of export products other than the above mentioned 18 category of products can file their applications for registration by themselves through the International Trade Single Window (www. singlewindow.cn). These enterprises may check the registration mode (official recommendation or self application) for each HS Code before initiating the registration process. An enterprise involved in export of different kinds of food products has to apply for multiple registration numbers with GACC for different products they export to China.

## Registration processes for 18-categories of products including aquatic products

The enterprises of above mentioned 18- category products which are not registered with GACC have to register on the online registration system: https://cifer. singlewindow.cn/. It can also be accessed through China International Trade Single Window: https://www. singlewindow.cn/.

Such establishments shall obtain a username and password from the respective competent authorities (Export Inspection Council in case of Aquatic products) to access the registration module to file their applications. After logging in to the system with

overseas enterprise account, click on "Registration Application" in the menu on the left, select the product category involved in enterprise registration and input the basic information of the enterprise.

Once completed, click on "Preview" to display all the information entered to confirm. After confirmation click on "Submit", the system will automatically submit application to the competent authority.

The submitted applications will be then be scrutinized by the competent authority and recommended for registration to GACC. These recommended applications will then be evaluated by GACC. Based on the evaluation, GACC will register the overseas producers and grant them the registration number. Flow chart for the registration processes for 18- categories of products including aquatic products are provided in the Fig. 1.

For the overseas production enterprises of four high risk category products (including meat and meat products, aquatic products, dairy products, bird's nest and bird's nest products) who are already registered with GACC through the recommendation by the competent authority of the exporting country (region), their registration shall continue to be valid even after the implementation of the new registration provisions.

But for those overseas manufacturers that export four categories of products to China for the first time, GACC will evaluate and review the food safety management system and food safety status of overseas countries (regions), and determine the corresponding inspection and quarantine requirements. New regulation also stipulates the methods of assessment and censorship on the imported food manufacturers' registration, including paper audits, video assessments, and on-site inspections.

As of 3<sup>rd</sup> January 2022, a total of 605 registration applications of Indian seafood enterprises have been approved by GACC. The list of approved registrations is available at https://ciferquery.singlewindow.cn/.

After getting on to the above webpage, enter the code '1801' for aquatic products in the product category box, key in 'IND' for India in the country region & select 'Inquire'. The basic site is in Chinese, but can be converted to English with the help of Google translate.



Fig.1: Flow chart on GACC registration procedure

#### Validity period of the registration certificate

As per the new regulation, the validity period of the registration certificate is extended from the current four years to five years. In the case of most of the Indian seafood exporters, their registration validity expires in January 2023. When there are any changes in the manufacturer details including production site relocation, change in the legal representative or registration number granted by the exporting country; the manufacturer is required to apply again for registration invalid. For the renewal of the registration certificate, the request for renewal has to be submitted from 3 to 6 months before the expiration, by following the requirements provided in order No.248.

#### Order No. 249

Order No 249 covers a broad range of requirements on food exports to China, including overseas facilities registration, record filing by importers and exporters, quarantine and inspection, and product labeling.

#### **Record Filing**

As per the new guideline, overseas exporters or agents who export food to China shall apply for record with the General Administration of Customs. Foreign exporters or agents and food importers shall be responsible for the authenticity and validity of the materials they provide when filing for the record. If there is a change in the filing content of foreign exporters or agent of food importer, it shall go through the change formalities with the filing authority within 60 days from the effective date of the change.

The General Administration of Customs is responsible for publishing the record list of exporters of imported food For the exporters involved in any process of production, processing and storage, they need to be registered in the registration system (cifer.singlewindow.cn).

And for the merchant exporters operating in establishments approved by GACC, which do not own any manufacturing facility, but uses the processing and storage facility of a GACC registered establishment under separate ownership to process, pack, and store and export aquatic products.

They can register by themselves at the following link, step by step. Then, GACC will issue a record number. (https://app.singlewindow.cn/cas/login?\_loginInter netPlus=1&service=http%3A%2F%2Fire.customs. gov.cn%2Fconire%2Fcontroller%3FSERVICE\_ ID%3DFRAMEWORK\_LOGIN\_SERVICE)

#### Labeling requirements for aquatic products

The new regulation includes a number of new provisions regarding the labeling of food products exported to China.

The order imposes a new labeling requirement for all food products imported into China to include the registration number on the label of the inner and outer packaging of the food products, which China customs would examine and verify at the border prior to granting customs clearance.

For aquatic products exported to China, the label on the inner and outer packaging should be firm, clear and easily distinguishable in Chinese and English or Chinese and the language of the country of export, indicating the following:

- 1. Trade name and scientific name
- 2. Specifications
- 3. Production date
- 4. Batch number
- 5. Shelf life and storage conditions

6. Production methods (seawater fishing, freshwater fishing, aquaculture)

7. Production area (ocean fishing area, freshwater fishing country or region, country or region where the aquaculture product is located)

8. Production and processing enterprise (including fishing vessel, processing vessel, transportation vessel, independent cold store)

9. Name and registration number and address (specifically to the state/province/city, the destination must be marked as the People's Republic of China).

## China's food safety standards for imported aquatic products

The Government of China continues to highlight food safety as a priority area for policy and regulatory attention. Over the past two decades, Chinese ministries have been actively developing and revising policies, rules, and regulations overseeing food safety.

As these standards serve as a base for the inspection and approval of imported products into Chinese territory, any products being sold in China shall comply with the quality and hygienic test requirements in the applicable Chinese National Food Safety Standards. Under these standards there are mandatory tests and requirements for microbial, physical, and chemical contamination checks.

Some of the important standards providing the criteria related to maximum residue limit of contaminants, pesticides, microbial pathogens permitted in seafood are collated in the tables 1 and 2 from the below mentioned National standards(GB 2733-2015, GB 2762-2017,GB: 29921-2013,GB 10133-2014).



Table 1:Maximum Levels of heavy metals in aquatic products							
Contaminants	Food category	Limit					
	Fresh, frozen aquatic animal (excluding fish, crustacean, bivalves)	1.0 (viscera removed)					
Lead (mg/kg)	Fish, crustacean	0.5					
-	Bivalves	1.5					
	Fish	0.1					
Cadmium (mg/kg)	Crustacean	0.5					
	Bivalves, gastropods, cephalopods,	2.0 (viscera removed)					
Mercury (mg/kg)	Aquatic animal and its products (excluding carnivorous fishes and its products)	0.5					
	Carnivorous fishes and its products	1.0					
Arsenic (mg/kg)	Aquatic animal and its products (excluding fish and fish products)	0.5					
	Fish and fish products	0.1					
Chromium (mg/kg)	Aquatic animal and its products	2.0					
Benzo[a]pyrene (µg/kg)	Smoked, roasted aquatic products	5.0					
N-Nitrosodimethylamine (µg/kg)	Aquatic products (excluding canned aquatic products)	4.0					
Polychlorinated biphenyl (mg/kg )	Polychlorinated Aquatic animal and its products						
	Seawater fish, shrimp and Pre-made aquatic animal products	≤ 30					
TVB-N*/(ma/100a)	Sea crab and marinated raw aquatic animal products	≤ 25					
- 1 VB N /(mg/100g)	Freshwater fish and shrimp	≤ 20					
	Frozen shellfish	≤ 15					

Histamine*/(mg/100g)	Raw and salted Fishes (high histamine fish)	≤ 40
	Raw and salted sea fish(excluding high histamine fish)	≤ 20
Peroxide value (in fat)/ (g/100g)	Salted fish (shad fish, mackerel, salmon)	≤ 4.0
	Salted fish (excluding shad fish, mackerel, salmon)	≤ 2.5
	Pre-made aquatic dry products	≤ 0.6
Paralytic shellfish toxin (PSP)(MU/g)	Shellfish	4
Diarrheic shellfish poison (DSP)(MU/g)	Shellfish	≤ 0.05

\* Not applicable to live aquatic products

Table 2 : Microbiological limits									
Food Cotogony	Pathogan Inday	Sampling plan and limit (if not specified, is / 25 g or / 25 ml )							
1000 Calegory	T alloger muex	n	с	m	М				
	Salmonella	5	0	0	-				
Aquatic products (cooked, raw)	Vibrio parahaemolyticus	5	1	100 MPN/g	1000 MPN/g				
	Staphylococcus aureus	5	1	100 CFU/g	1000 CFU/g				
Processed Aquatic Products	Total number of bacterial colony/(CFU/g or CFU/ml)	5	2	5×104	105				
	<i>Escherichia coli /</i> (CFU/g or CFU/ml)	5	2	10	102				
NI. L.									

Note:

n: number of samples collected from the same batch of products.

c: maximum allowable number of samples exceeding m level.

m: acceptable limit level for pathogen index.

M: highest safety limit for pathogen index.

As the criteria for pathogens, contaminants and other quality indicators in food for domestic and overseas markets are different, some foods which are qualified in India may not comply with Chinese national standards. Therefore, pre-test of product quality is essential prior to export to the Chinese market. Some of the important regulations enacted by People's Republic of China for the import of sea foods are provided in table 3.

Table 3 : Seafood Import Regulations				
GB 2733–2015	National food safety standard fresh, frozen aquatic products of animal origin			
GB 14881-2013	National standard of the people's republic of China			
GB 10133-2014	Food safety national standards – Aquatic Products Condiments			
GB 29921 – 2013	Food Safety National Standard Limit of Pathogens in Food Products			
GB20941-2016	Hygienic standards for the production of aquatic products			
GB10136-2015	National Food Safety Standard -Aquatic Products of Animal Origin			
GB 2762-2017	National Food Safety Standard Maximum Levels of Contaminants in Foods			

Seafood exporters can learn more on the import requirements, regulations and preferences of China through the links provided below. It should be noted that, Chinese national standards are generally published in Chinese language. Below mentioned links are unofficial English translations of national standards of China.

1.GB 2733–2015-https://www.aqsiq.net/pdf/China\_GB\_2733-2015\_National\_Food\_Safety\_Standard\_Fresh\_Frozen\_ Aquatic\_Products.pdf

2.GB 14881-2013-http://tradeChina.dairyaustralia.com.au/wpcontent/uploads/2018/08/GB-14881-2013-General-Hygiene-Practice-for-Food-Production.pdf

3.GB10133-2014-https://www.svscr.cz/?dl\_name=zivocisneprodukty/GB\_10133\_2014\_Aquatic\_Product\_Condiments.pdf

4.GB 29921 – 2013-http://cexgan.magrama.es/MODULOS05/ Documentos/GB29921-2013-PatogenosEnAlimentos.pdf

5.GB20941-2016-https://www.aqsiq.net/pdf/China\_ GB\_20941-2016\_National\_Food\_Safety\_Standard\_ Hygienic\_Practice\_of\_Aquatic.pdf

6.GB10136-2015-http://www.sernapesca.cl/sites/default/files/ gb\_10136-2015\_aquatic\_products\_of\_animal\_origin.pdf

7.GB2762-2017-https://www.fas.usda.gov/data/China-Chinareleases-standard-maximum-levels-contaminants-foods

## Guidelines for the prevention and control of Covid-19 in the cold-chain products

Emergence of Covid-19 and its unpredictable curbs has disrupted the reliability of the food industries to provide safe and quality food products to the consumers. Even though FAO in "Guidance for preventing transmission of COVID-19 within food businesses" pointed out the transmission of disease from food products to human is unlikely to happen, China claims that the major cause for the recurrence and spread of Covid-19 in the country is possibly through the imported cold-chain products.

As part of more drastic measures adopted to control the spread of the novel corona virus, China has tightened restrictions which resulted in the strict refusal of any products suspected of contact with the virus. It is one of the only country to impose wide-scale corona virus inspections on incoming shipments. China's concern about the transmission of corona virus has increased the refusal of frozen foods exported from India.

Considering the Covid - 19 scenarios prevailing in the world, China has issued two technical guidelines for the prevention, control and disinfection of novel Corona-virus in the production and processing of cold chain food.

These guidelines highlight measures needed to control Covid - 19 in food operations, so that the safety of workers is protected, and the safety of the food supply is preserved. Preventative controls mentioned by China customs include daily health checks of personnel, personal protection of employees during production processes, encouraging employees to be vaccinated, and regular nucleic acid testing.

It is suggested to enhance the awareness of protection and take preventive measures for food workers, especially the high-risk employees. Covid-19 protection measures include nucleic acid testing of food and outer packaging before product leaves the factory, with export only after the test is negative; coverage of possible virus contamination pathways such as ventilation systems, across production and transportation.

In order to effectively prevent the virus from spreading into domestic areas through international logistics, it is necessary to strengthen the sanitation and disinfection of all stages in the cold chain food supply. China's technical guideline for the prevention, control and disinfection of Covid-19 provides a general framework

for the cleaning and disinfection practices in the production and operation of cold-chain foods. As per the guidelines, cold chain foods exported from highrisk areas of Covid-19 should undergo regular cleaning and disinfection during the process of loading and unloading, transportation, storage and sales.

China has also listed a set of common disinfectants for use against Covid-19 in "Guidelines for the Prevention, Control and Disinfection of Covid -19 in the Production and Operation of Cold-chain Foods", a summary of which is given in table 4.

#### India's future seafood markets

The major markets for Indian seafood is limited to

Tal	ble 4: Disinfectants for use against SARS-C	coV-2
Disinfectant	Activity	Chlorine Disinfectant Limit
	Surface disinfection of an object	500mg/L
Chlorine	Surface disinfection of low-temperature refrigerated objects	1000 mg/L
Alcohol	Hygienic hand disinfection	Ethanol content (70%~80%)
	Object surface	0.1%-0. 2% peracetic acid or 3% hydrogen peroxide,
Peroxide disinfectant	Air disinfection	0.2% peracetic acid or 3% Hydrogen peroxide
	Surface disinfection of low temperature refrigerated objects:	0.2% ~ 0.4% peroxy acetic acid or 6% hydrogen peroxide
Quaternary ammonium	Surface disinfection	1000 - 2000mg/L
disinfectant	Surface disinfection of low temperature refrigerated objects	2000-4000mg/L

major importing countries like USA, China and Japan and some of the EU countries. In 2020-21, India witnessed a huge drop in the seafood exports to these key markets in terms of both value and volume, primarily due to the Covid-19 pandemic and lower demand. Amid the Covid-19 pandemic, China imposed more stringent controls at their border to prevent the entry of virus through the supply markets requiring 14-day quarantine in many ports or border markets in China. The clearance of goods was thus delayed, and storage fees and the risk of the spoilage of perishable foodstuffs increased.

These strict import regulations, has increased the rejections of Indian consignments exported to China. The rise in the number of Indian seafood export firms suspended by China in the wake of detecting Covid-19 nucleic acid on packaging materials make exporters worry, forcing companies to find alternate markets to stay afloat. China being one of the leading trade partners which India has hugely over depended on, these rejections as well as tightened regulations affected the Indian export trade economy. Finding new alternative and potential overseas markets has become essential to cut down our dependency on China.

By analyzing India's export trade patterns, it could be seen many other potential markets remain unexplored as exporters prefer to tread the beaten path. Even though EU is one of the main export destination for Indian seafood, India's export share to its member countries like Sweden (0.02%), Poland (0.4%), Germany (0.5%) and Denmark (0.2%) are very less compared to their total seafood imports. Nigeria is one of top 25 largest seafood importers in the world. But, India's share in Nigeria's seafood imports stood at a menial 0.0067 % during 2020 revealing insignificant presence of Indian products in Nigeria's markets.

Brazil is one of the important trading partners of India in the entire LAC (Latin America and the Caribbean region), but seafood export to Brazil from India is almost zero. Brazil being the 24<sup>th</sup> largest seafood importer, Indian exporters should utilize the future seafood export potential in Brazil. Likewise, countries such as Chile, Peru, and Columbia also could be a future markets for India as FAO forecast an important boost of 33% in the fish consumption in these countries. Indian exporters can consider these countries as potential future markets to extend the seafood trade, but the decision to enter new foreign markets should be made only after careful market research.

Export promotion will also play a key role in supporting

businesses to recover from the pandemic and to extend the export to overseas markets. To cope with the disrupted markets, traders should attempt to find opportunities from the changed consumption preference, to compete in new markets. Processing should be adjusted to the changed preference as consumers became more inclined to buy affordable frozen fish and cook at home. The ability to mitigate risk by adjusting to new demand and developing alternative markets are crucial for improve exports in the present scenario.

#### Conclusion

Dynamic nature of China's seafood regulations are one of the biggest challenges faced by the seafood exporters in India. Under the current scenario, China pointed to the Covid-19 pandemic as justification for new requirements on imported foods, especially for foods imported through the cold chain. At a time when exporters are battling the Covid-19 restrictions, China's new import regulations are distressing the Indian seafood exporters. Although there are no changes to the existing registration and listing processes for seafood facilities, there are some concerns over the labeling procedures as new registration provisions demands labeling changes required to be made for 'non- viable' seafood products exported to China from 1 January 2022. As the regulations as per the Order are in place, businesses involved in the export of food products to China should carefully consider the requirements to ensure continuous compliance and non-disruption of its supply chain.

#### References

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## On site- Tuna Histamine testing demonstration at Tharuvaikulam & Thengapatinam

A s a part of setting up, mini-on site Fish Testing Unit by NETFISH-MPEDA, a demonstration was conducted at Tharuvaikulam fishing harbour of Thoothukkudi district and Thengapattinam fishing harbour of Kanyakumari district respectively on 16<sup>th</sup> and 17<sup>th</sup> December 2021. The objectives of the programme were:

• To demonstrate the use of HISTASTRIP Test Kits to fishermen/exporters and Other Stakeholders at Tharuvaikulam and Thengapattinam fishing harbours by technical experts from Perkin & Elmer.

• Make aware the deep sea fishermen of Tharuvaikulam and Thengapattinam about proper icing and storage, and hygienic handling of tuna for better price realization.

• To adopt onsite tuna testing facility of NETFISH MPEDA for determination of quality of deep sea fishes landed and fix price for their catch.

HISTASTRIP Test Strips and Strip reader was supplied by Perkin Elmer. The Demonstration was performed by Ms. Swapna, Technologist, Perkin Elmer along with Dr. Vinoth S Ravindran, State Coordinator, NETFISH, Tuticorin.

Dr. Joice V. Thomas, CE, NETFSIH presided over the meetings. Mr. Asok Kumar, Deputy Director, MPEDA, Thoothukkudi felicitated the meeting at Tharuvaikulam. The demonstration was also attended by Mr. Vijayaragavan, Assistant Director of Fisheries (Marine), and was supported by the Department of Fisheries and Fishermen Welfare, Thoothukkudi.





About 35 deep sea fishermen attended the demonstration. At Thengapattinam the demonstration was supported by the Department of Fisheries and Fishermen Welfare, Thoothukkudi and Mr. Arokyasamy, Inspector of Fisheries and Mrs. Arul Rose Singh, inspector, Marine Enforcement Wing attended the meeting. About 40 deep sea fishermen attended the demonstration.

## Harbour based awareness programme conducted by NETFISH- MPEDA to reduce post harvest losses



ETFISH MPEDA, Veraval conducted harbour Based Programme to reduce the post harvest loss among fishers on 24<sup>th</sup> and 25<sup>th</sup> November. Fishermen were educated on maintaining personal hygiene , hygienic handling of fish and ice, use of gum boot and gloves for segregation of fish, proper icing, minimizing single use plastic etc .







### NEWS SPECTRUM

## Efforts from India's CMFRI boosts clam production in Vembanad Lake

Recent initiative from the Central Marine Fisheries Research Institute (CMFRI) has rejuvenated black clam (*Villorita cyprinoides*) stocks in Vembanad Lake and local fishermen are now harvesting 10 tonnes of black clam per day.

CMFRI's initiative of relaying baby clams in various sites in the Vembanad facilitated increasing the clam production which in turn helped fishers harvest around 10 tonnes of clam per day from two areas of the Lake. Aimed at boosting the clam fishery and enhancing

livelihood options for the clam fishers in the region, the Molluscan Fisheries Division of CMFRI relaid (stocked) baby clams after identifying suitable areas on the northern side of the Thanneermukkom Barrage. As part of this initiative, which was under a project on "Rejuvenation of Clam" taken up by the Fisheries Department of Kerala using the District Panchavat Scheme, approximately 200 tonnes of baby black clams were re-laid in Keecheri and Chakkathukadu areas of the Vembanad Lake technical under the guidance of CMFRI.



According to the CMFRI scientists, the initiative is expected to bring out a production of nearly 1,500 tonnes from these sites which is more than seven-fold of the re-laid baby clams.

The long undisturbed period of nearly two years has facilitated at least two spawnings followed by spat settlement leading to the establishment of a new black clam bed in the Lake and thus enhancing the clam resource, said Dr P Laxmilatha, Head of Molluscan Fisheries Division (MFD) of CMFRI.

Relaying of baby clams led to the establishment of the resource in these areas spreading around 20 hectares and helped fishers harvest adult clams with good growth rate, she said.

"The production of black clams declined from a peak of 75,592 tonnes in 2006 to 42,036 tonnes in 2019 in Vembanad Lake. Low production owing to multiple reasons and the pandemic have had cascading effect

> on clam fishers along Vembanad Lake", Dr Laxmilatha added.

Reaping the benefits out of this, fishermen under the Keecheri Ulnadan Matsva Thozhilali Sangham Sahakarana collect the clams using canoes from re-laid locations and they sell clam meat for 150 per kg in the nearest market. Each canoe collects 450 kg of clams per day. Dr Vidya R, Scientist of the MFD, CMFRI who led the project said that apart from increasing the production of clams in the area, the relaying helped clam fishers to

sustain their livelihood during the tough pandemic period."Nearly 5,000 fishermen are involved in black clam fishery in the Vembanad Lake," she said adding that the clam rejuvenation programme greatly helped increasing the production in the backwaters that provided a lifeline to the fishers depending on clam resources in the area.

www.thefishsite.com



## Hilsa travels 225 kms in Ganges, loses 34 gram; ICAR study

hile reports of the mammoth blue whale and even wild animals being tagged for research have appeared in journals and talks shows, emulating the study on fish is less heard off.

Kms of lower stretch of the river, 95 Kms stretch is a freshwater tidal stretch that shows the river stretch experiences tidal current. Negotiating the tidal current, the Hilsa migration speed was estimated as 0.56 m/s.

But one such study is being carried out by the The ICAR-Central Inland Fisheries Research Institute, Barrackpore, Kolkata with an objective to increase the population of Hilsa fish in the Ganges.

This follows a drastic reduction in their numbers especially between Farakka in West Bengal and Prayagraj in Uttar Pradesh since the construction of the



Farakka barrage in 1975. The study began in 2020 and since then 391 live Hilsa fish weighing 250 grams have been tagged and released into the river.

A major breakthrough was achieved on October 6 when a fisherman caught one of the tagged fish live along the banks of the Ganga at Baidybati under Hooghly District, West Bengal, giving the researchers a clear understanding of movement pattern, among other aspects. The fish was ranched on October 1 at Farakka and during the course of its four days and 21 hours journey, it swam 225 kms. "Of the 225 It has also recorded a weight loss of 34 gms during the period of migration," said ICAR in a statement.

This interesting result is of first its kind to record in the migratory fish species in the country, it said.The study was a joint initiative of the **ICAR-Central** Inland **Fisheries** Research Institute. Barrackpore, Kolkata and the National Mission Clean for Ganga.

Hilsa is a popular delicacy in households across the eastern states, with some estimates suggesting that the demand ranges between 30,000 to 40,000 metric tonnes on an average. However, dwindling production rate has made this variety an expensive proposition for middle class families. On September 21, the Bangladesh government allowed traders to export 2080 metric tonnes of Hilsa to West Bengal as part of a goodwill gesture, ahead of the Durga Puja celebrations.

www.aquapost.in



### NEWS SPECTRUM

## ILO looks to sustainable aquaculture to achieve decent work goals



statement from the ILO says that lessons learned from the Covid-19 crisis should encourage reforms towards a more sustainable and resilient aquaculture sector and food systems at large. For the sector to feed the world's growing population, it needs to engage in concerted efforts to promote sustainable enterprises and decent work for its workforce.

These are among the main conclusions of the Technical meeting on the future of work in aquaculture in the context of the rural economy (13 to 17 December 2021) that brought together representatives from governments, employers and workers at the ILO to discuss the decent work challenges and opportunities in the aquaculture sector.

In recent decades aquaculture has made important contributions to reducing poverty and hunger in many impoverished rural communities. It remains an important source of livelihoods and food for many rural workers today. At least 20.5 million people work in primary aquaculture production. Many more are engaged along the aquaculture supply chain.

"If we are to ensure that the aquaculture industry will contribute to inclusive growth and decent work opportunities for more women and men we must create a level playing field and an enabling environment for sustainable production and for workers to enjoy their rights at work," said Magnús Magnússon Norddahl, Chairperson of the meeting.

The meeting adopted conclusions that will assist governments, workers and employers to take measures to tap the potential of the sector to support full and productive employment and decent work for all, so contributing to food and nutrition security and making sure that no one is left behind.

www.thefishsite.com



## Methane-to-fishmeal project could be a profitable food security solution



A first-of-its-kind ,Stanford University analysis has evaluated the market potential of growing bacteria that have been fed captured methane, that can be processed into a protein-rich fishmeal.

The study, published in Nature Sustainability, finds production costs involving methane captured from certain sources in the US are lower than the market price for conventional fishmeal. It also highlights feasible cost reductions that could make the approach profitable using other methane sources and capable of meeting all global fishmeal demand.

#### Two problems, one solution

56

Although carbon dioxide is more abundant in the atmosphere, methane's global warming potential is about 85 times as great over a 20-year period and at least 25 times as great a century after its release. Methane's relative concentration has grown more than twice as fast as that of carbon dioxide since the beginning of the Industrial Revolution due in great part to human-driven emissions. A potential solution lies in methane-consuming bacteria called methanotrophs. These bacteria can be grown in a chilled, water-filled bioreactor fed pressurized methane, oxygen and nutrients such as nitrogen, phosphorous and trace metals. The protein-rich biomass that results can be used as fishmeal in aquaculture feed, offsetting demand for conventional fishmeal or plant-based feeds.While methane-fed methanotrophs can provide feed for farmed fish, the economics of the approach have been unclear, even as prices of conventional fishmeal have nearly tripled in real terms since 2000.

To clarify the approach's potential to meet demand profitably, the Stanford researchers modelled scenarios in which methane is sourced from relatively large wastewater treatment plants, landfills, and oil and gas facilities, as well as natural gas purchased from the commercial natural gas grid. Their analysis looked at a range of variables, including the cost of electricity and labour availability. If efficiencies like these could bring down the production cost for a methanotroph-based fishmeal by 20 percent, the process could profitably supply total global demand for fishmeal with methane captured in the US alone, according to the study. Similarly, the process could replace soybean and animal feeds if further cost reductions were achieved.

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## twitter

FOLLOWERS - 5,548

**POSTS - 31** 

VIDEOS - 2

LIKES - 5,548

## MPEDA IN SOCIAL MEDIA

### SOCIAL MEDIA REPORT: DECEMBER

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Dec 1 - Dec 31

3,412 > -6.5%

695 > +10.8%

3,267 >

Instagram	← Insights Previous Month ∽	December 2021 SUMMARY
FOLLOWERS - 3,267	Insights O You gained 84 more follow Nov 3	ers compared to Nov 1 -
POSTS - 31	Accounts reached	<b>3,412</b> -6.5%
VIDEOS - 2	Accounts engaged	695 +10.8%
LIKES - 3,267	Total followers	3,267

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