MPEDA

Newsletter

VOL. X NO. 1 & 2 APRIL & MAY 2022

Dr K. N. Raghavan IRS Takes Charge as Chairman of MPEDA

MAIN STORY
Tools Used for Dissemination of Fishery Information

Marine Products Exports Reach All-Time High in 2021-22

MPEDA Golden Jubilee Marine Quest - 2022










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On the Platter

MPEDA
VOL.X / NO. 1 & 2 / APRIL & MAY 2022 Newsletter

Dr. K.N. RAGHAVAN, IRS
Chairman

Hi friends,

As you may be aware, I have taken over as the Chairman of MPEDA on 30th March 2022. First of all, let me congratulate the seafood export fraternity for their unstinting effort to push the seafood export trade forward, which helped to reach an all time high figure of US$ 7.74 billion during the last financial year. As in the previous years, frozen shrimp contributed the lion's share to exports, while USA retained the top spot among the markets. The exports to China showed a remarkable resurgence compared to previous year, despite the challenges faced on account of restrictions placed by that country on consignments exported from India. I am certain that the exporters will continue their wholehearted efforts to push exports further up during the current year.

MPEDA had a successful participation in the Seafood Expo North America held at Boston from 13th to 15th March 2022, which was held in physical format after a gap of 2 years. The 1600 sq. ft. Indian Pavilion set up by MPEDA had 11 exporters as co-exhibitors. The Indian pavilion and the exporter's stalls attracted a lot of buyers and trade enquiries. The cooking demonstration organized in the pavilion added flavor to it. MPEDA is also taking part in the Seafood Expo Global, Barcelona from 26th to 28th April 2022. The Indian pavilion admeasures 300 sq. m. has 14 co-exhibitors with MPEDA.

To further our efforts on market promotion, MPEDA has organized 3 virtual buyer seller meets during the month, with Russian and Japanese buyers. Japan has registered remarkable growth in exports during the last financial year and holds 6% share in overall value.

On 13th April 2022, NETFISH, a society under MPEDA has signed a MoU with the Central Institute of Fisheries Nautical and Engineering Training (CIFNET) to conduct training programmes jointly in the capture fisheries sector. The trainings are aimed at skilling the fishers on sustainable fishing and safety at sea.

MPEDA in association with Joint Institute of Food Safety and Applied Nutrition (JIFSAN) and US FDA is organizing 3 training programmes this year for the benefit of the sector; two on seafood HACCP and one on Good Aquaculture Practices. The seafood HACCP trainings are in April 2022, while that on Good Aquaculture Practices will be conducted in May 2022. The training is designed to help the technicians and academia to guide the sector in producing safer food products for consumers.

Thank you,

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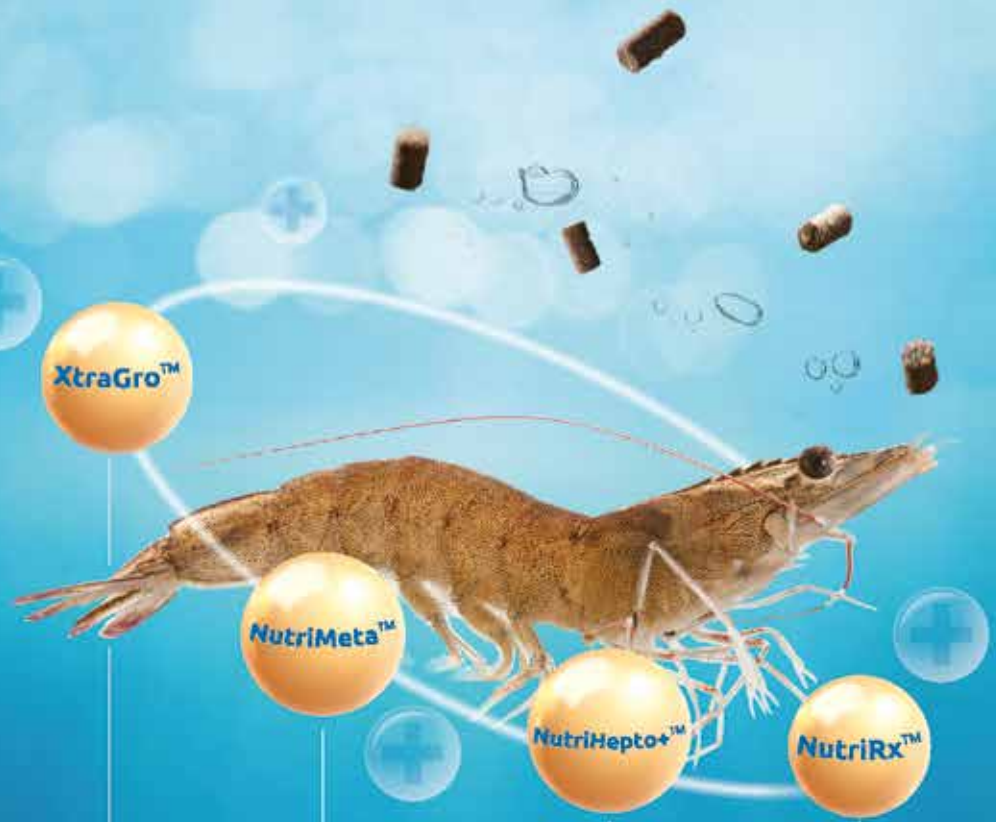

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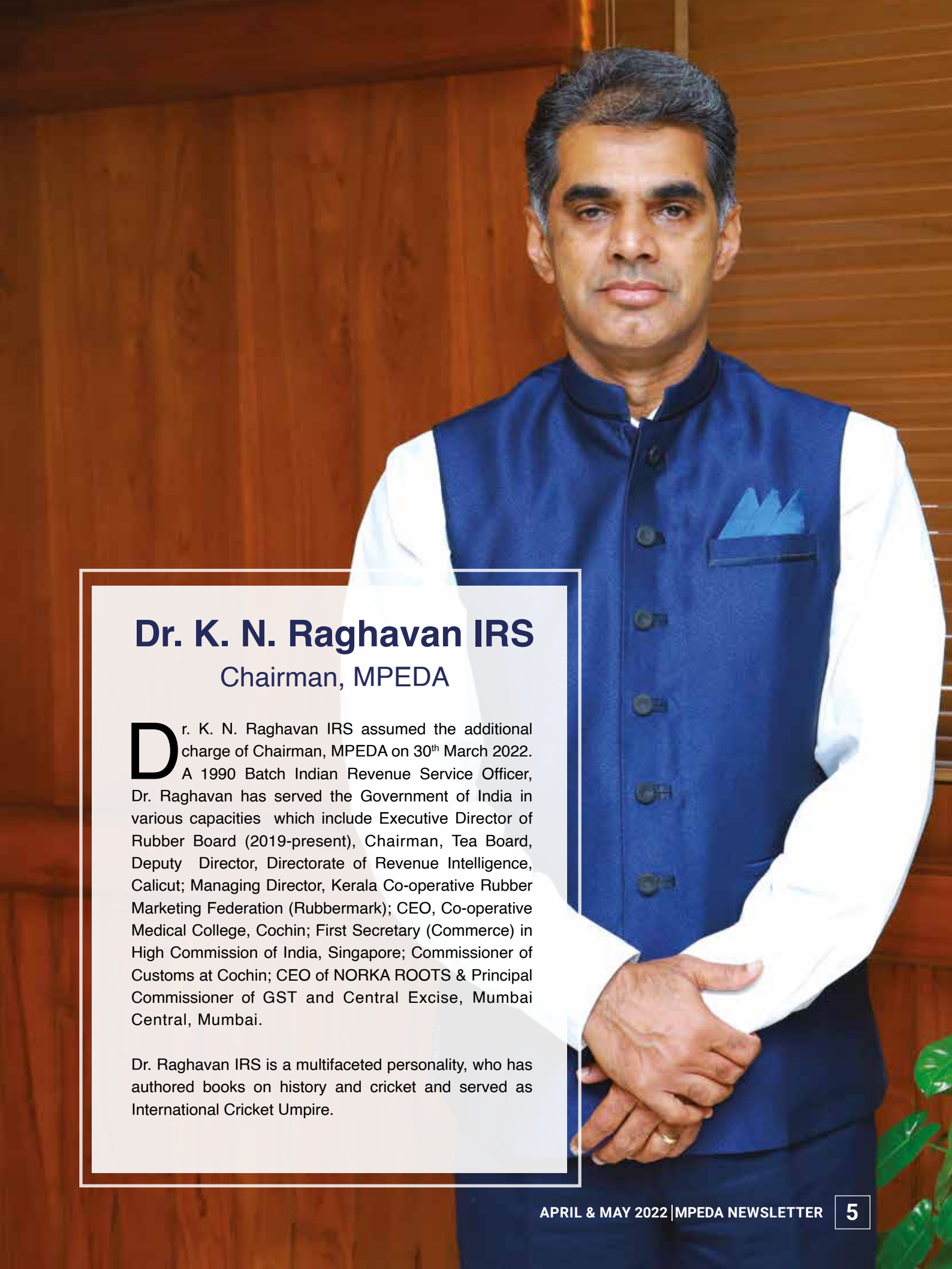


Dr. K. N. Raghavan IRS

Chairman, MPEDA

Dr. K. N. Raghavan IRS assumed the additional charge of Chairman, MPEDA on 30th March 2022. A 1990 Batch Indian Revenue Service Officer, Dr. Raghavan has served the Government of India in various capacities which include Executive Director of Rubber Board (2019-present), Chairman, Tea Board, Deputy Director, Directorate of Revenue Intelligence, Calicut; Managing Director, Kerala Co-operative Rubber Marketing Federation (Rubbermark); CEO, Co-operative Medical College, Cochin; First Secretary (Commerce) in High Commission of India, Singapore; Commissioner of Customs at Cochin; CEO of NORKA ROOTS & Principal Commissioner of GST and Central Excise, Mumbai Central, Mumbai.

Dr. Raghavan IRS is a multifaceted personality, who has authored books on history and cricket and served as International Cricket Umpire.

Virtual Buyer Seller Meets organized by MPEDA

Denmark

A Virtual Buyer Seller Meet was organized by MPEDA in association with EOI, Denmark on 8th March 2022. The meeting had an active participation of about 9 importers from Denmark and 15 exporters from India. Mr. Anil Kumar P., Joint Director (Marketing) and Dr. T. R Gibinkumar, Deputy Director (Market Promotion & Statistics) co-ordinated the meet from MPEDA. Mr. Asok Kumar, Marketing Officer, EOI, Denmark & Mr. Poul Melgaard Jensen, Director, Danish Seafood Association, attended the meet from Denmark. Mr. Anil Kumar briefed the Indian marine exports and showcased the statistics of production, capacity and exports to EU in general and Denmark in particular. A short video on seafood processing industry of Denmark was followed by a brief talk on the imports of the country by Mr. Jens Mathiesen from M/s. Launis. Buyers from Denmark introduced themselves and specified the required products. The online platform also provided separate chat rooms for one to one discussion between buyers and sellers. Mrs. Anju, Deputy Director (Market Promotion & Development) gave the concluding remarks for the introductory meet. The technical details of the one to one online platform were given by Mr. Regil Das.

New Zealand

MPEDA had organized a VBSM for M/s. Hasper Brand labs from New Zealand upon their requirement for Black Tiger shrimp from India. The meet was conducted on 17th March 2022.

Six exporters who evinced their interest in New Zealand market participated in the meet and had an interactive session with Mr. Dileep Maddukari from Hasperband labs, New Zealand. The strict quality standards of the New Zealand seafood market and the prevailing seafood market preferences were shared by the importer.

The importer found the meet helpful and appreciated the efforts taken by the authority. Mr. Dileep shared his expectations to have more seafood trade, subsequent to the signing of FTA between India and Australia.

Mr. Dileep also promised to liaise with Indian consulates in New Zealand and related authorities to conduct a webinar on the regulatory requisites and product requirements for New Zealand in the near future for the benefit of Indian exporters.

Participants of VBSM with Denmark

Danish Seafood Association

Danish Seafood Association (DSA) started its activities in 2010 as a result of a merger between the Danish Fish Industry and Export Association. DSA currently has 116 active members within processing and trading of fish and fish products. DSA aims to ensure a strong profile of the fishing companies' views to the Danish authorities as well as in the press. DSA regularly provides members with assistance and contributes to the resolution of individual cases.

Peter Bamberger is the Chairman of DSA and Mr. Poul Melgaard is the association's director. From July 2017, DSA has had a secretariat at Axelborg in Copenhagen. The association also runs 5 working groups within salmon; smokehouse; Fresh fish; shellfish and preserves as well as the pelagic industry.

Participants of VBSM with New Zealand

Hasper Brand Labs

Hasper Brand Labs is a food supplier based in New Zealand and specialised in empathy customer service with impeccable end to end do business in co-ordination. Hasper Brand Labs provides service and quality products to the retailers throughout the world since 2017 with specialisation in quality food and agricultural products.

Hasper Brand Labs utilize Just In Time (JIT) technology with their vendor and resellers to make sure that all the products are available at all the time. The company has grown to become one of the industry leading and most trusted provider of private label products. Hasper Brand Labs also help customers comply with the import and export requirements, assisting with smooth customs and clearance process.

Taiwan

In order to increase the marine exports to Taiwan, MPEDA has organized a Business Meet in association with India Taipei Association, Seafood Exporters Association of India, Taiwan Import Seafood Association and Taiwan Frozen Seafood Industries Association on 24th March 2022.

Dr. M. Karthikeyan, Director, MPEDA gave introductory remarks on the exports of marine products from India to Taiwan. Mr. Gourangalal Das, Director General, India Taipei Association, in his introductory speech highlighted that India is the largest supplier of white pomfret and surimi to Taiwan. He also assured the continued support of ITA to develop seafood trade between the countries. Mr. Rustom Irani, Vice President, Seafood Exporters Association of India, Mr. Shih Yung Wu, Chairman, Taiwan Import Seafood Association and Ms. Tzu-Jung Wu, Secretary General, Taiwan Frozen Seafood Industries Association spoke during the occasion.

Participants of the VBSM with Taiwan

Mr. Wen-Che Hsieh (Henry), Commercial Section, India Taipei Association introduced the Taiwanese buyers in the programme and Dr. T. R. Gibinkumar, Deputy Director (Market Promotion & Statistics) introduced the Indian exporters during the meeting.

A question- answer session followed the introduction of the buyers and exporters, which was moderated by Mr. Anil Kumar P., Joint Director (Marketing), MPEDA. Mrs. Anju, Deputy Director (Market Promotion & Development) proposed the vote of thanks. The meet had a participation of over 25 exporters and 15 Taiwanese buyers.

MPEDA participates in SENA 2022

Seafood Expo North America / Seafood Processing North America is America's largest seafood exposition. Thousands of buyers and suppliers from around the world attend the annual, three-day exposition to meet, network and do business. The attendees of the expo represent importers, exporters, wholesalers, restaurants/ supermarkets chains, hotels, and other retail and foodservice companies. The expo also provides an opportunity to explore latest trend in seafood products, equipments & packaging technologies.

Seafood Expo North America is instrumental in business promotion and networking success for seafood export into US. More than 90 percent of seafood consumed in the U.S. is imported, making Seafood Expo North America a sizable sales opportunity for suppliers from everywhere to bring their products to buyers from restaurants, supermarkets, catering firms, seafood markets, hotels, airlines, cruise lines and more.

The expo was held at the Boston Convention and Exhibition Centre (BCEC), Boston, Massachusetts, United States. The centre is located on Summer Street near the South Boston waterfront and Boston's World Trade Centre. In spite of the Covid pandemic and travel restrictions, SENA saw a participation of 625 seafood companies and 240 equipment / packaging / service companies from different countries.

MPEDA has been participating continuously in this mega show. As India is the largest supplier of shrimps to USA since 2015, MPEDA's participation in the Seafood Expo North America is inevitable to expand our market base in US and adjoining markets and to familiarise new products.

Indian Pavilion

The India pavilion was organized at booth no. 2833 by MPEDA with the support of Embassy of India, New York. This year, MPEDA took a space of 1600 sq. ft. for the Indian Pavilion, which had stalls of MPEDA and 11 co-exhibitors. The pavilion was beautifully designed with the theme of value added seafood, sustainability & diversification. All the co-exhibitors appreciated MPEDA for the design and arrangements made in India pavilion.

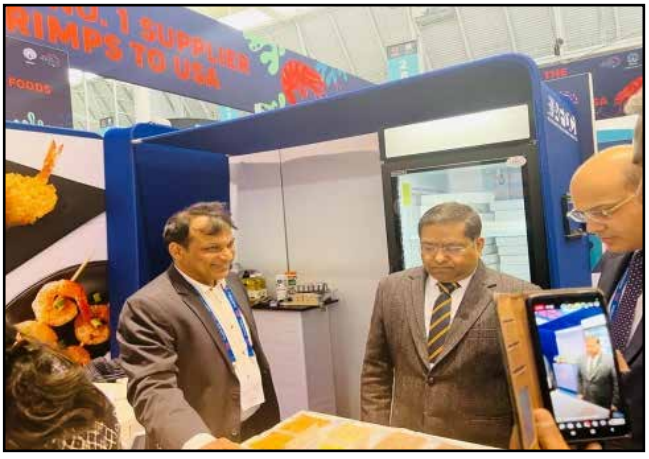
Co-exhibitors of Indian Pavilion in SENA 2022
1. M/s. Growel Processors Pvt. Ltd., AP
2. M/s. Seafood Innovations, Kochi
3. M/s. AFDC, Kochi
4. M/s. V. V. Marine Products, Tuticorin
5. M/s. Hannan Exports, Gujarat
6. M/s. Pasupati Aquatics, Kolkata
7. M/s. Gadre Marine Exports, Ratnagiri
8. M/s. Corlim Marine Exports, Goa
9. M/s. Indian Exports, Veraval
10. M/s. Sun Exports, Veraval
11. M/s. Britto Seafoods, Chennai

Dr. M. Karthikeyan, Director and Mr. R. Prasad Naik, Assistant Director coordinated the participation of MPEDA in SENA 2022.

MPEDA stall showcased the diverse chilled, frozen, dried and ready to eat/ serve value added seafood items. Publicity material like co-exhibitors guide featuring the details of the participating exporters, pamphlets, product catalogue, commercial fish chart etc. were displayed and distributed among buyers. The major item on display at the MPEDA booth was retail products, especially ready to cook and ready to eat products.

The MPEDA booth was inaugurated by Mr. Randhir Jaiswal, Consul General of India, New York in the presence of Dr. Varun Jeph, Deputy Consul General of India, New York, Dr. M. Karthikeyan, Director, MPEDA, Mr. R. Prasad Naik, Assistant Director, MPEDA and the co-exhibitors on 13th March 2022.

Mr. Randhir Jaiswal Consul General of India, Indian Embassy, New York inaugurates the India Pavilion



Mr. Randhir Jaiswal, Consul General of India, Indian Embassy, New York visits the stall of co-exhibitors

Consul General of India, New York appreciated the design and the branding promoted by MPEDA and visited the stall of co-exhibitors.

He appreciated the efforts taken by MPEDA to arrange the diverse forms of Indian seafood for display in chilled and frozen forms.

MPEDA had arranged a Michelin star chef Mr. Hemant Mathur from New York with the support of Indian Embassy, New York for carrying out the cooking demonstration of Indian cuisine. Variety of Indian cuisines with shrimp, squid and fish were served to the visitors and buyers. The cooking demo was a crowd puller for the Indian pavilion.

Cooking demo at the MPEDA stall by Michelin star chef Mr. Hemant Mathur

The MPEDA officers attended to the visitors and buyers and briefed them about the Indian seafood industry focussing on the various aspects like quality of Indian seafood, sustainability of Indian Seafood sector and strength of Indian seafood processing sector. The queries and trade enquires raised by the visitors and buyers were also answered by the MPEDA officials. More than 100 buyers visited the Indian Pavilions.

The Director, MPEDA met with delegates representing various International organisations during the fair. He had an interaction with Dr. Brett Koonse of JIFSAN and Mr. John Connelly, President, NFI.

Dr. M. Karthikeyan, Director, MPEDA with Dr. Brett Koonse, JIFSAN

Dr. M. Karthikeyan, Director and Mr. R. Prasad Naik, Assistant Director, MPEDA with Mr. John Connelly, President, NFI

Dr. M. Karthikeyan, Director and Mr. R. Prasad Naik,Assistant Director, MPEDA during their visit to Office of Consul General of India, New York

The SENA, 2022 Boston fair was a grand success attracting lot of buyers and visitors to Indian Pavilion.

Many Indian exporters also participated in the fair as delegates, since it is happening in physical format after 2 years. Later on, MPEDA officials paid a visit to the Office of Consul General of India, New York, and discussed about the strategies for expansion of seafood to US with Mr. Randhir Jaiswal, Consul General of India, New York in presence of Dr. Varun Jeph, Deputy Consul General of India, New York.

MPEDA participates in "Workshop on Export Promotion" organised by Government of Maharashtra

A State level workshop on 'Export Promotion' was organized by Department of Industries, Government of Maharashtra on 24th March 2022 at World Trade Center, Cuffe Parade, Mumbai. The Programme was inaugurated by Mr. Baldev Singh IAS, Additional Chief Secretary (Industries), Govt. of Maharashtra.

Panel discussion was conducted as a part of the workshop with export promotion bodies like MPEDA, Engineering EPC, Textile EPC and IOPEC. The panel discussion was focused on the function / roles of each Department towards promotion and exports of products, current scenario in exports, exports target and achievement mainly from Maharashtra, role played to achieve the target despite COVID-19 pandemic & employment generation, current geo-political situation & future export outlook. Mr. Naresh Tambada, Deputy Director, MPEDA Regional Division, Mumbai informed the participants about various functions of MPEDA towards export promotion of seafood sector.

Inauguration of State level Export Workshop at WTC, Mumbai

Mr. Naresh Tambada, Deputy Director, MPEDA RD, Mumbai receiving momento from Department of Industries, Government of Maharashtra for participation and Panel Discussion

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Dr. K. N. Raghavan IRS is the new Chairman of MPEDA

Dr. K. N. Raghavan IRS took over as the new Chairman of MPEDA on 30th March 2022. He replaces Mr. K. S. Srinivas IAS, who served as its Chairman since August 2018. Dr. Raghavan currently serves as Chairman of Tea Board and Executive Secretary of Rubber Board. MPEDA welcomed its new Chairman Dr. K. N. Raghavan IRS during the ceremonial function organised on 30th March 2022. MPEDA also bid farewell to former Chairman, Mr. K. S. Srinivas IAS on the occasion. Mr. K.S. Pradeep IFS, Secretary, MPEDA welcomed the gathering. Dr. M. Karthikeyan, Director, MPEDA, Dr. S. Kandan, Director, MPEDA-RGCA, Mr. Anil Kumar P., Joint Director (Marketing), Mr. C. Wilson, Joint Director (Aqua), Mr. Maruthi D. Yaligar, Joint Director, SRD Valsad and Mr. A. Jeybal, Joint Director, RD Vijayawada, Mr. Shanmukha Rao, CEO, MPEDA - NaCSA, Dr. Joice V. Thomas, CEO, MPEDA- NETFISH offered felicitations.

A short video on the activities pioneered by Mr. Srinivas was projected before the audience, which included officials from MPEDA and its societies across India. Dr. K. N. Raghavan IRS in his address appreciated Mr. Srinivas for the efforts taken by him for the betterment of trade and MPEDA. Mr. K. S. Srinivas reciprocated and expressed his gratitude to all members of MPEDA for offering sincere co-operation during his tenure. Dr. Ram Mohan M. K., Joint Director (QC) proposed the vote of thanks.

Dr. K. N. Raghavan IRS welcomed by Director, MPEDA

Mr. K. S. Srinivas IAS, former Chairman, MPEDA with Dr. K. N. Raghavan IRS, Chairman, MPEDA

MPEDA Golden Jubilee hall opened

The conference hall of MPEDA was constructed along with the Head Office building in 1990. The wear and tear demanded renovation of the hall with contemporary corporate styling equipped with state-of-the-art facilities. As MPEDA enters its Golden Jubilee year in 2022, it was also decided to name the renovated conference hall as Golden Jubilee Hall.

The newly renovated hall was jointly inaugurated by Dr. K. N. Raghavan IRS Chairman, MPEDA and Mr. K.S. Srinivas IAS, former Chairman of MPEDA, by unveiling the plaque. Dr. K. N. Raghavan IRS in his address appreciated Mr. Srinivas, former Chairman for the great initiative. Mr. K. S. Srinivas IAS expressed his pleasure in inaugurating the Golden Jubilee Hall and appreciated the efforts taken by the Administration Section of MPEDA and its officials for making this happen in the shortest possible time frame.

Dr. K. N. Raghavan IRS Chairman, MPEDA and Mr. K.S. Srinivas IAS, former Chairman of MPEDA inaugurating the Golden Jubilee hall

From L to R: Dr. M. Karthikeyan, Director, MPEDA, Dr. K. N. Raghavan IRS, Chairman, MPEDA, Mr. K. S. Srinivas IAS, former Chairman MPEDA, Mr. K. S. Pradeep IFS, Secretary, MPEDA

Chairman and Director, MPEDA presenting a collage to Mr. K. S. Srinivas IAS, former Chairman, MPEDA

Marine products export record historic heights in 2021-22

Marine products exports from India recorded an all time high figure of US$ 7,740 million during 2021-22, in spite of the difficult trade situations faced by the sector. Department of Commerce has fixed a target of US$ 7809 million for the sector to achieve in FY 2021-22. The valiant attempt by exporters saw the marine products sector achieve 99.12% of the target.

The year-on-year growth was 30% in US$ value terms. The Compound Annual Growth Rate (CAGR) in seafood exports during the past decade stands at 8.23%. During the past 11 years, 2011-12 to 2021-22 the observed export growth is 120.64%. Decadal trend of export performance in terms of US$ shown in fig 1.

During 2021-2022, India has exported marine products to 121 countries. USA remained the top destination for Indian marine products. US holds this position for the past 11 years. The target fixed for US market during the fiscal year was US$ 3,021 million, and the market achievement is US$ 3,315 million (10% higher), with 37% higher growth compared to 2020-21.

China remained the second top destination of Indian marine exports despite the various trade embargos faced in that market. Exports to China touched US$ 1,121 million against the target of US$ 1,021 million, which is 10% higher. Year-on-year growth in exports to China is 29%.

Japan stood at number three position, retaining the same ranking for the past 3 years. Exports to Japan were US$ 448 million against the target of US$ 428 million, 5% higher. Marine products export to USA, China and Japan together constitute about 63 % of total exports. The export targets fixed by DoC to these countries have been exceeded.

Table 1 represents the territorial division-wise export performance and fig. 2 shows territorial division-wise comparison of export achievement and fixed target.

Fig. 1: Trend of export performance in US$ terms (2011-2022)

Table 1 : Territorial division- wise export performance

TERRITORIAL DIVISION	2018-19	2019-20	2020-21	2021-22 ACHIVEMENT	2021-22 TARGET	% TARGET ACHIEVED	% growth 2021-22
NAFTA	2466	2668	2565	3516	3208	109.59%	37
NEA	1358	1934	1460	1748	1661	105.28%	20
EU	916	878	810	1144	1158	98.80%	41
ASEAN	1448	611	573	678	853	79.50%	18
WANA	335	328	287	326	466	70.01%	14
CIS	95	125	102	146	186	78.56%	43
SA	71	83	69	59	119	49.65%	-14
AFRICA	67	48	49	61	85	71.28%	25
LAC	26	29	25	45	51	88.30%	80
OCEANIA	13	13	16	17	22	76.84%	3
Total	**6796**	**6716**	**5957**	**7740**	**7809**	**99.12%**	**30**

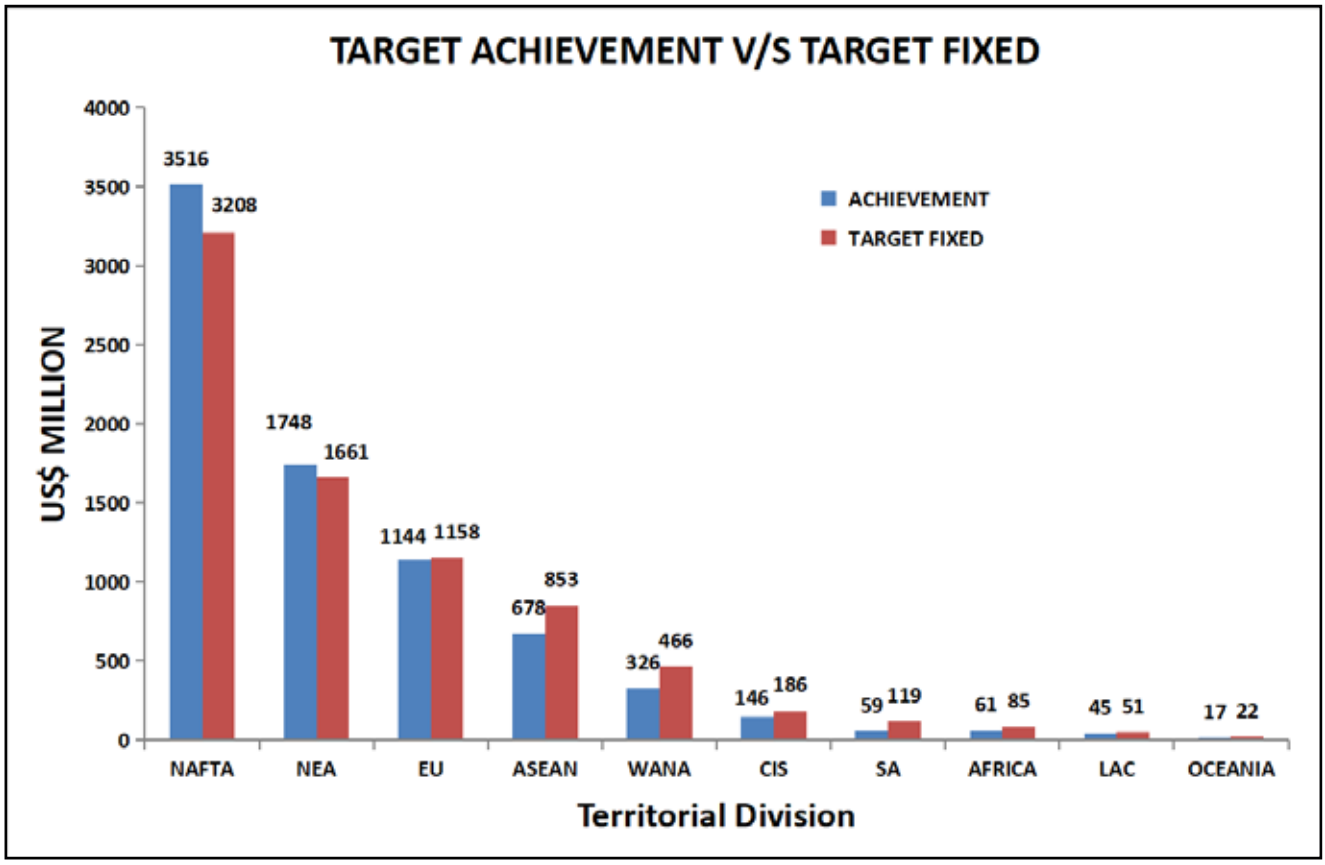

Fig. 2: Territorial division -wise comparison of export achievement and target fixed

NAFTA, NEA and EU contribute 83% of the total achievement. NAFTA and NEA exceeded the target due to the increased exports to USA, China and Japan. Exports to NAFTA region is US$ 3,516 million against the target of US$ 3,208 million. Exports to NEA is US$ 1,748 million against the target of US$ 1,661 million.

EU, LAC and OCEANIA performed very close to the target and it is observed that LAC, CIS, EU and NAFTA regions have highest growth as compared to the other regions. Exports to EU touched US$ 1,144 million against the target of US$ 1,158 million. Similarly export to LAC and OCEANIA were 45 and 17 US$ million against the target 51 and 22 US$ million.

The top 5 countries contributed 70% of exports and top 10 countries contributed 82% of total marine exports in US$ value terms. Table 2 represents the top 10 destinations of marine products.

Table 2: Top 10 destinations for Indian marine products

S. No	TD	Countries	MARINE PRODUCTS EXPORTS						
			2018-19	2019-20	2020-21	2021-22			
						Target achieved	Target set	% of Target achieved	% growth 2021-22
1	NAFTA	U S A	2328	2535	2415	3315	3021	110%	37
2	NEA	CHINA	724	1345	870	1121	1021	110%	29
3	NEA	JAPAN	419	418	409	448	428	105%	9
4	ASEAN	VIETNAM	1025	312	306	311	406	77%	2
5	ASEAN	THAILAND	322	211	181	262	328	80%	44
6	EU	SPAIN	170	149	151	207	208	99%	37
7	NAFTA	CANADA	138	131	149	191	187	102%	29
8	EU	ITALY	144	128	121	177	176	100%	46
9	WANA	UAE	182	200	166	164	245	67%	-1
10	EU	BELGIUM	122	126	119	157	154	102%	32
	Total top 10		**5573**	**5556**	**4888**	**6352**	**6174**	**103%**	**30**

Contribution of top 5 countries to exports

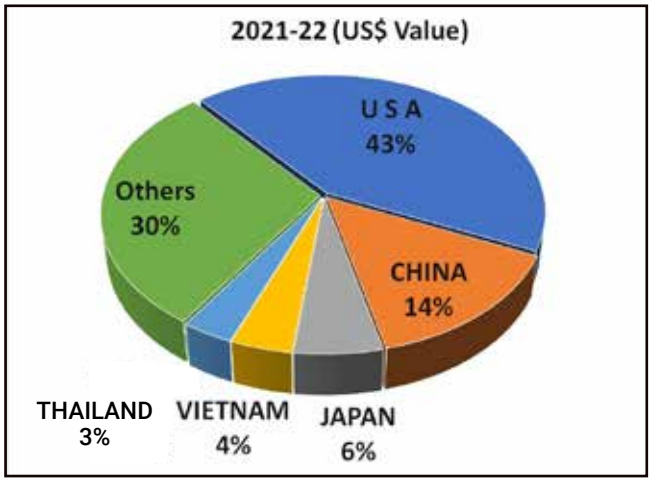

Fig. 3: Contribution of top 5 importing countries to Indian seafood exports 2021-22 (US$ million) (DoC Data)

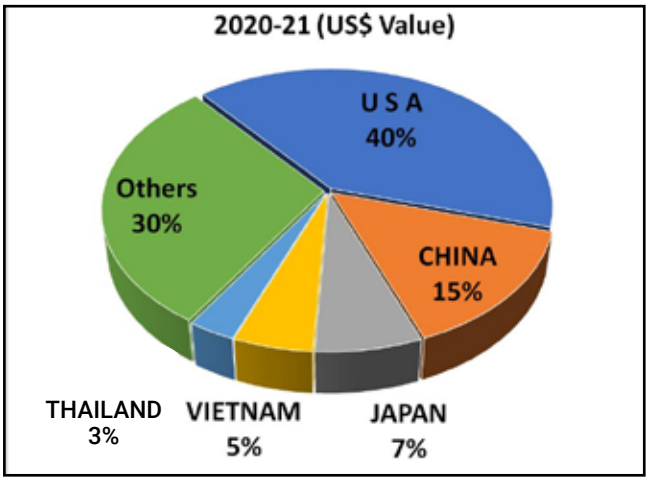

Fig. 4: Contribution of top 5 importing countries to Indian seafood exports 2020-21 (US$ million) (DoC Data)

According to the DoC data, USA contributed the maximum to Indian seafood exports in 2021-22, about 43% as against 40 percent in 2020-21, followed by China of 14%, Japan 6%, Vietnam 4% and Thailand 3%. Other countries together hold only 30% of the total exports.

However during 2020-21, the contribution of China, Japan, Vietnam and Thailand were 15%, 7%, 5% and 3 % respectively.

The top 5 countries in the fiscal year, 2021-22 and 2020-21 are shown in fig. 3 & 4.

March records an overall increase in quantity of marine landings

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

Marine fish landings at selected major harbours/ landing centres in India is monitored and recorded on a real-time basis by NETFISH, as part of the Catch Certification system of MPEDA. The Harbour Data Collectors engaged at around 100 landing sites across the country record the details of the fishing vessels arriving at the harbour/landing centre and the species-wise quantity landed by these vessels, on a daily basis. This report summarizes the species-wise, harbour-wise and state-wise fish catch and boat arrival trends observed in March 2022.

I.OBSERVATIONS ON FISH CATCH LANDINGS

The total marine fish landing in March 2022 was 71,330.72 tons as recorded from the 96 selected landing sites across the country. The total catch was composed of 34,273.84 tons (48 %) of Pelagic finfish resources, 21,146.13 tons (30 %) of Demersal finfishes, 10,367.34 tons (14 %) of Crustaceans and 5,543.47 tons (8 %) of Molluscs (Fig.1).

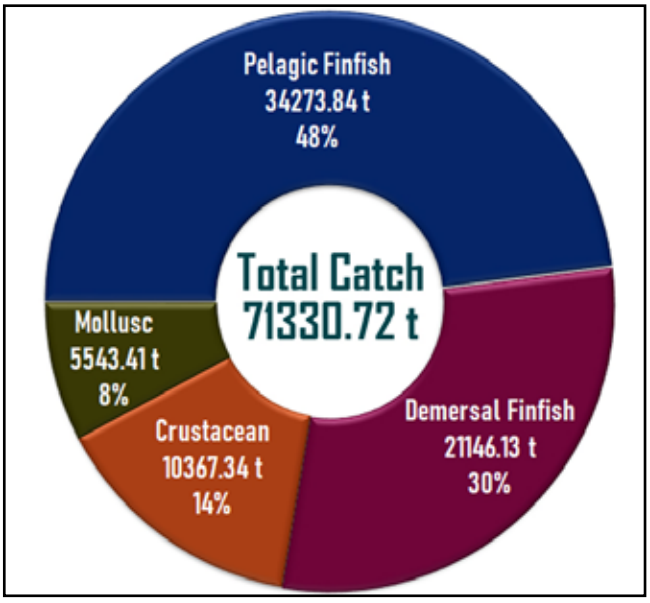

Fig.1: Catch composition of recorded marine landings in March 2022

In all, about 253 species of marine fishery items were recorded during the month, among which *Rastrelliger kanagurta* (Indian mackerel), *Lepturacanthus* Spp (Ribbon fish), *Nemipterus* (Japanese thread fin bream),*Otolithes* Spp (Dhoma Croaker) and *Katsuwonus pelamis* (Skip jack tuna) were the top five contributors in terms of total quantity landed (Table 1). On analysing the landing by categorizing various species under their common groups, it was observed that the most landed fishery items during the month were Mackerels, Coastal shrimps, Ribbon fishes, Threadfin breams and Tunas. They together had formed 46 % of the total catch (Fig 2). The other major items reported were Croakers, Squids and Anchovies each contributing about 4,650.35t, 3,627.92t & 3,599.17 t respectively to the total catch.

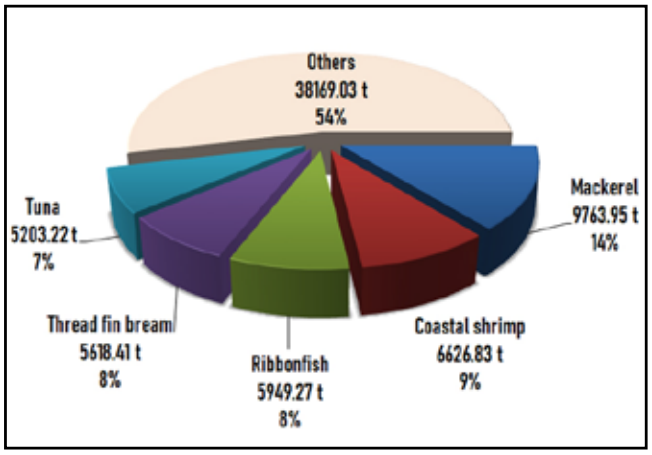

Fig. 2: Major fishery items landed during March 2022

Table1: Major fish species landed during March 2022

Sl. No:	Common name	Scientific name	Qty. in tons
1	Indian mackerel	*Rastrelliger kanagurta*	9,480.59
2	Ribbon fish	*Lepturacanthus Spp*	5,096.55
3	Japanese threadfin bream	*Nemipterus japonicus*	4,202.50
4	Dhoma Croaker	*Otolithes Spp*	2,258.83
5	Skip jack tuna	*Katsuwonus pelamis*	2,176.19

The quantity-wise landing of Pelagic finfish, Demersal finfish, Crustacean and Molluscan resources are presented in Table 2. Of the various groups of Pelagic finfishes, the Mackerels and Ribbon fishes dominated the catch, and in the case of Demersal finfishes, Threadfin breams and Croakers were the most landed items. About 64% of the Crustacean catch was comprised of different species of Coastal shrimps, within which the *Karikkadi* shrimp was the dominant species. In the case of the Molluscan resources, squids and cuttle fish were the major items landed.

State-wise landings: In March 2022, Gujarat with 17,817.81 tons (25%) had recorded the highest landings amongst the 9 coastal states (Fig.3). Kerala, Maharashtra and Karnataka stood next in the line-up, with a contribution of 13,515.12 tons (19 %), 11,505.77 tons (16 %) and 9,649.39 tons (14 %) respectively to the total catch.

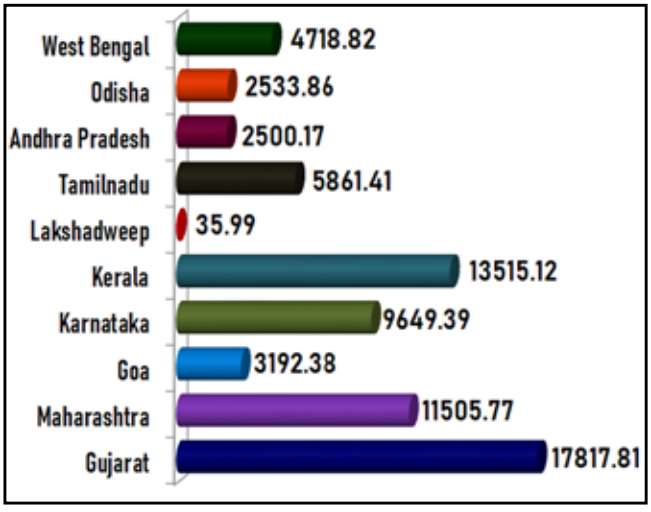

Fig.3: State - wise fish landings (in tons) during March 2022

Harbour-wise landings: The monthly landing is reported from the 95 landing sites along the 9 coastal states and the Kavaratti landing centre in Lakshadweep Island.

The New Ferry Wharf harbour in Maharashtra had recorded the maximum fish landings, which was to the tune of 4,607.19 tons (6%). It was followed by Veraval and Okha harbours in Gujarat, with a share of 3,997.34 tons and 3,760.42 tons respectively.

II.OBSERVATIONS ON BOAT ARRIVALS

A total of 42953 nos. of fishing vessel arrivals was recorded from the 96 fish landing sites in March 2022. State-wise figures (Fig. 4) show that the highest number of boat arrivals had occurred in Kerala (28%) during the month and Gujarat (20 %), Tamil Nadu (13 %) and Maharashtra (13 %) succeeding the list. Porbandar (1,814 nos.), Mangrol (1,735 nos.) and Veraval (1,669nos.) harbours in Gujarat had topped the list in terms of highest number of boat arrivals.

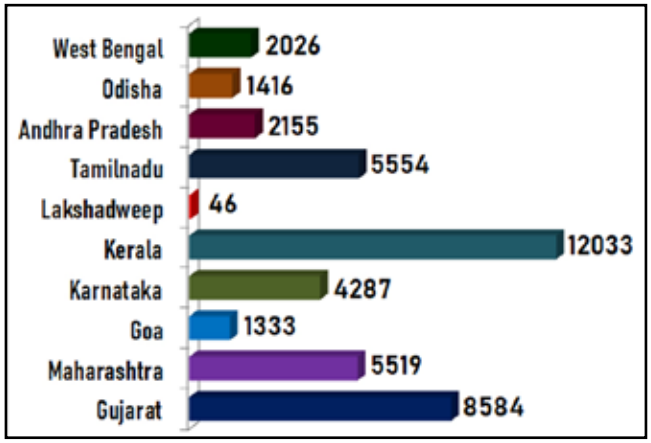

Fig.4: State - wise boat arrivals (nos.) during March 2022

Summary: In March 2022, a total of 71,330.72 tons of marine landings and 42,953 nos. of boat arrivals were reported from 96 major fishing harbour/landing centres along the 9 maritime states and the Lakshadweep Island.

After a declining trend continuously for the last few months, this month had shown an increase in the total catch. When compared to that of February 2022, there was an increase by about 5,082 tons in the marine landings and 3,400 numbers of boat arrivals during March 2022.

The Pelagic finfish resources continued as the major contributor to the total landings and the Indian mackerel (*Rastrelliger kanagurta*) had remained as the most landed species in this month as well.

Gujarat had remained in the first place among the states in terms of total catch landed whereas, Kerala continued in the first place with regard to the most number of boat arrivals recorded for the month. Among the landing sites, the New Ferry Wharf harbour remained in the first position in terms of total catch landed and the Porbandar harbour continued in the first place with number of boat arrivals.

To raise or not to raise interest rates? Asian Central Banks are staying put

Product Manager at Myforexeye , Myforexye Research

Currencies across the globe in the last financial year have had a volatile path and Asian currencies were during the same period. Comparing the performance of the Asian currencies, the Chinese Yuan (red line) and Indonesian Rupiah (green line) were the only two currencies which appreciated against the US Dollar since April 1, 2021. Rest all other pairs have been in the red since mid-June 2021.

Singapore Dollar (orange line), Malaysian Ringgit (purple line) and Indian Rupee (blue line) have managed to reduce the fall to less than 5%. Philippine Peso (pink line), Thai Baht (yellow line), Korean Won (turquoise line) fell between to 5-7%. The worst performing currency was the Japanese Yen which paved way to Dollar bulls from March 2022 beginning. The once a safe-haven currency was pulled down after talks of US policy normalization became the talk of the markets.Comparing their performance to the MSCI's International Emerging Markets currency index (brown line) indicates a positive path all through the year, closing 2.5% higher, after hitting a fresh record high in

June 2021. The index has a large weighting of China's Yuan, followed by Brazilian Real and Indian Rupee.

The Asian currencies have been marked down due to high inflation, slow pace of factory activity due to supply chain disruptions and the uncertainty around Ukraine crisis which have reduced the risk appetite of investors. Most Western economies have begun raising interest rates but China has cut interest rates, while Japan and India are staying put on the interest rates. Indian central bank will meet this week to share their stance on the economic policies.

Fall out of the Ukraine war

One of the major fallout of the Ukraine war is striking fear in the hearts of Chinese and Indian governments and central banks. The ease and speed with which US and its western allies plus Japan and neutral Switzerland acted to kick Russia out of SWIFT and freeze a major portion of its forex reserves must have unnerved officials in countries with large forex reserves, all of whom keep nearly all their reserves in these countries. The sanctity and safety of forex reserves, which have been taken as guarantee of repayment abilities of all countries, can no longer be depended on.

This issue has not been openly discussed by either the government or RBI in public forum, though when questioned by a reporter, the RBI Governor stated that they had already started shifting reserves out of dollar slowly over the last six months.

But the fact that the most dependable neutral country has joined the other western nations means that even if RBI had started to shift reserves to Euro or Swiss franc or Yen, these are also at equal risk now. RBI has currently kept half of our gold reserves with Bank of England and Swiss National Bank and even these can be a part of any sanction if India wants to aggressively support Russia. Not only our foreign policy but our forex reserves policy too has to be reviewed immediately.

The options for RBI look very limited. They cannot really switch to Yuan for example as that country remains a big risk for us nor can they shift to any other developing country as the policies and stability of the government of these countries is rather shaky. So the best option for RBI is to try and prepay all sovereign loans taken in dollars except those from World Bank or IMF and reduce the net liabilities. It can also prepare corporate with dollar loans to tie up with their overseas lenders to incorporate a “force majeure” clause in their agreements.

RBI can also see that their net reserves at any time are just above the FPI/FDI investments so that in case of freezing of reserves by western countries, these too can by frozen as a retaliatory measure. Also RBI could increase the gold reserves but keep all future gold purchased in the country.The impact on rupee could be in terms of RBI not intervening to buy dollars further and allowing the currency to appreciate. As we are a net importing country on trade basis, the impact of appreciation could be beneficial. We are not suggesting that major steps be taken immediately as the global situation is very fluid at the moment, but the government and RBI should set up an internal policy mechanism and start taking small steps in this regard.

Current market volatility is high but could pale in comparison if the above scenario hits us in the coming months and years. This is just a basic analysis and we will delve deeper into it as we go along. This is not an attempt to create panic but to open our readers to uncertain events that could take place in coming months.

CIFNET and MPEDA-NETFISH join hands to upskill the fishers

The Central Institute of Fisheries, Nautical and Engineering Training (CIFNET) and MPEDA-NETFISH signed a Memorandum of Understanding (MOU) to conduct training programmes jointly for the fishers in all coastal states and Union Territories in India. This initiative has been taken in the best interest of fisher community and aims at welfare and socio-economic upliftment of the fisher community. It also thrusts on resource conservation and post-harvest quality management by imparting adequate skill development training programmes under Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme.

The MoU was signed by Mr. A. K. Choudhury, Director, CIFNET and Dr. Joice V. Thomas, Chief Executive, MPEDA-NETFISH in a function organised in MPEDA headquarters Kochi on 13th April 2022 in the presence of Dr. K. N. Raghavan IRS, Chairman MPEDA & President, NETFISH, Dr. M. Karthikeyan, Director, MPEDA, Mr. K. S. Pradeep IFS, Secretary, MPEDA, and other officials of MPEDA, CIFNET and NETFISH.

Signing of MoU by CEO, NETFISH in the presence of Chairman, MPEDA and Director, CIFNET

Director, CIFNET and CEO, NETFISH exchange the signed MoU in presence of Chairman and Director, MPEDA

Dr. K. N. Raghavan IRS, Chairman, MPEDA delivers the Key Note address

Tools used for dissemination of fishery information for awareness and conservation of resources

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Introduction

The fisheries segment makes a critical commitment to food security and socio-economic advancement universally. One among the foremost highly traded global food commodities, fish fuel a $362 billion industry that employs tens of millions of people and feeds billions more (SOFIA, 2020). Current fishing levels and methods put critical pressure on world fisheries and marine ecosystems. Sustainable Development Goal 14 (life below the ocean) has set a target of finishing overfishing and re-establishing exhausting fish stocks.

The long-term outlook for the seafood sector tracks closely with the health of the marine environment, and our ocean is at its healthiest when its biodiversity is protected. Illegal catches and trade, which generate tens of billions of dollars per annum, drive overfishing in many regions. If left unchecked, harmful fishing practices can deplete populations of non-targeted species, like sharks, whales and turtles, also damage important marine habitats like coral reefs and mangroves. Information of adequate quality is a necessary condition for the improvement of all areas of fisheries and aquaculture. With the quick advancement of Information and Communication Technology (ICTs), information and data can be viably created, put away, analyzed, spread and utilized for awareness and conservation of resources.

Generating awareness of environmental conservation issues among the public is essential if there is an expectation of them to alter their behaviour, facilitate informed decisions and engage governments or regulatory authorities to take action.

Fisheries resource current trend

The overall number of fish species is believed to be around 32,500 (Nelson *et al*, 2016). Given that freshwater accounts for less than 0.3 percentage of all available water on the planet, the fact that there are over 15,000 freshwater fish species is astounding (IUCN,2020). Rivers, lakes, and wetlands are among the planet's most biodiverse areas.

They account for less than 1% of the planet's total surface area, but they are home to about a quarter of all vertebrate species, including more than half of all fish species. Freshwater fish had a bad year in 2020. It began with the extinction of the famous Chinese paddlefish, an endemic behemoth of the Yangtze River, and ended with the loss of 15 additional species in the Philippines, according to the IUCN Red List for Threatened Species. IUCN has declared 80 freshwater fish species Extinct, with 10 more proclaimed Extinct in the Wild and 115 classified as 'Critically Endangered Possibly Extinct'.

Major threats to fisheries resources

Species, or biodiversity, often diminishes in response to more than one type of threat, and the true "threat" is the combined or synergistic impact of human-caused changes. Environmental crimes (EC) comprise the fourth most lucrative category of crime within the world after drug trafficking, counterfeiting, and human trafficking (Aceves Bueno, 2021).

A large number of freshwater fish species are also being threatened by degradation, reduction or even loss of floodplains by damming, agriculture practices, urban

development, rivers dredging and geomorphological modifications. After habitat destruction, the introduction of exotic or "alien" invasive species is believed to be one of the greatest global threats to native fish communities and their freshwater ecosystems. Pollution of freshwaters, whether caused by industrial, home, or agricultural activity, can have disastrous consequences, including the extinction of fish species and the death of rivers and lakes. Overexploitation (unsustainable fishing) poses a serious threat to fish and aquatic biodiversity and also to the livelihoods of people in riverine and lake communities. Climate change is causing global water temperatures to rise, as well as changes in rainfall patterns, water levels, river flow, and water chemistry.

“The knowledge of the status of fisheries resources and threats to fisheries has to reach to the general public or that, a medium is required to disseminate them”.

Tools used for fishery information dissemination

a.Individual methods: In this way, the extension agent talks with each person separately, keeping each person's own identity. When the number of anglers is small, they are close together, and there is enough time to communicate, this strategy is used. Farm and house visits, fishermen's calls, personal letters, adaptation trials, and fish farm clinics are among the strategies used.

b.Group methods: When it's required to communicate with a group of people at the same time, who aren't too far apart, and there's a reasonable amount of time available for communication, group methods are used. The size of the group depends on the number of people involved: small (15-25), medium (25-50), and large (above 50). Demonstration (method and outcome), group meetings, small group training, field day, farmers' day, study tour, and so on are examples of group methods.

c.Mass methods: This method involves covering a large and heterogeneous group of people without taking into account their individual and group identities. When communicating with a large and dispersed audience in a short amount of time, this strategy is used. The audience size can range from a few hundred at a mass meeting to tens of thousands at a campaign or exhibition, and millions at a newspaper, radio, or television broadcast. Farm publication, mass meetings, campaigns, exhibitions, newspapers, radio, and television are examples of these approaches.

Common tools		
Media	Characteristics	Example
Newspaper/Magazines / Journals / Popular articles	Newspapers carry the news of the world. Newspapers provide information and general knowledge. A lot of people rely on newspapers for learning about current affairs and World happenings.	Conservation News The Guardian MPEDA newsletter
Radio	Low cost: Radio advertisements are typically cheaper than television ads. Advertisers can target listeners based on time, geographic location, channel and program. Radio programming has millions of listeners nationwide.	“Kisan Bani – Voice of Farmers” is one of the attractive programmes on All India Radio KadalOsai FM 90.4 -For fishermen of Tamil Nadu
TV	TV shows are single-handedly responsible for inspiring a new generation of conservationists to take up arms and protect the natural world.	Channels: National geography, Animal Planet, Discovery etc

Podcast	A podcast is a multi-media digital file that can be seen and listened to on a computer, iPod, or another device that is delivered over the Internet.	Big Fish Podcast The Blue Fish Radio Show Tom Rowland Podcast Ike Live Fishing Talk Show with Mike Iaconelli Addicted Fishing Podcast
Short films / Documentaries	Documentaries have the ability to teach. Documentary films are an in-depth and instructive resource that can be used to start a conversation. They are effective instruments for bringing critical problems to the forefront in an engaging manner that generates discussion and, in some cases, social movements.	Meet the Ice Men of Mumbai's Largest Fish Market Before the Flood
Movies	Mass method of information dissemination. Many documentaries nowadays are addressing climate change issues, Biodiversity loss etc to the public	Fishpiracy Finding Nemo Finding Dory etc

Social Media

Social media is a computer-based innovation that encourages sharing of ideas, considerations, and data through the building of virtual systems and communities. People log in with social media by means of a computer, tablet, or smartphone through web-based computer programs or applications. Social media tools have transformed the way that people communicate with one another.

As of 2019 and 2020, per capita, social media utilization of web clients around the world summed to 145 minutes per day, up from 142 minutes within the past year (Statistica, 2021).

As open doubt of science develops, more researchers are getting to be disappointed with the conventional show of how science is dispersed and are taking communication into their claim hands using social media. Self-publishing on social media can help reduce animal disturbances by allowing users to share and learn what is socially desirable and acceptable. The ubiquitous and cost-effective nature of technology presents significant possibilities for conservation scientific participation through social media, whether it is to gather or transmit information.

The near-ubiquitous use of smartphones and therefore the rapid emergence of free, widely used, social media platforms have combined to turbocharge the dissemination of data at a scale and speed that might had been unimaginable just a few years ago. Social media platforms, like Twitter, Facebook, and YouTube, are getting used by people to disseminate conservation and awareness news.

Social media tool	World users as of 2021	Characteristics
Facebook 	2.853 billion	Facebook groups form an exclusive space for its users to interact, discuss and share information of common interest, once they start following a particular group (Pi et al., 2013 and Shiffman, D.S., 2018). The scientific publications are posted on social media to get a wider reach is getting popular nowadays. Example: Fisheries social scientist, Fisheries chanikyaneeti, Step to fisheries, ICAR aspirants fisheries etc (Iburahim *et al.*,2018).
Instagram 	1.386 billion	Instagram has reels to share stories. The # on conservation has wider reach as it contains 5.4 million post so far.
Twitter 	397 million	Twitter is simple to use; users may follow people or pages to receive news and updates, and Twitter is not limited to Web browsers. Public organisation such as ICAR, DRDO, NOAA, UGC etc are having their own Twitter account to widespread the important activities and announcement throughout the world.
Telegram 	550 million	Telegram allows you to exchange a large number of photographs and movies (up to 1 GB). It is a messaging app that focuses on security and speed, allowing you to create group chats with up to 5000 participants, remain in touch with everyone, and share a large number of photos and videos (up to 1 GB).
Whatsapp 	1.6 billion	Helps to create groups to share info and the status option helps to spread out the news to the friends rapidly. One can also check whether the receiver has seen the message. Example: Dr Joykrushna Jena, Deputy Director General (Fisheries Science), ICAR launched a WhatsApp & E-Mail Helpline for the fish farmers of the country. (WhatsApp No. - 7790007797 & ask.cifa@icar.gov.in) on the occasion of the 20th National Fish Farmers' Day celebrated by the ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar, Odisha.
Youtube 	2.291 billion	YouTube provide incredible opportunities for people related to fisheries. By investing a little time and having a good internet connection, the users can get to the whole world and learn many things. Youtube videos are seen as an important platform for knowledge sharing as well as a passive income source of 21st century. They speak about fisheries issues, conservation, fishing practices and share the information that can make an impact. Some of the notable fisheries channels are Krishi Darshan, Fish world,VungalMeenavan, MPEDA etc. Notably the channel MPEDA has 118 uploaded videos with 2000 + regular subscribers with around 1 lakh views till date.
Koo 	5 million followers	it is a India's own Twitter like microblogging site. It is used to express views and opinion on various topics example @mpeda, @PIB_MoFAHD
Blogs 		Enables one to write down their thoughts on anything that interests them. Whatever one publish is available for everyone to see. Blogs can provide professional advice or can serve as an informal press release for a new paper. Example: Thefisherieschanikyaneeti.
Websites 		It is a collection of web pages and related material recognised by a common domain name and hosted on at least one web server. fao.org, https://www.cife.edu.in/, https://www.iucnredlist.org/, www.mpeda.comand fishbase.com are all good examples.

Fig. 1: Infographic and memes message related to fisheries

Issues related to social media

There is always a question, social media-boon or ban?. There are several issues related to social media. The major issues related to social media are:

- Fake profiles and news
- Political mix in information
- Content, data quality and security
- New digital technologies require processes and procedures that can accommodate them
- Digital literacy is important everywhere
- Understanding how diverse audiences utilise social media
- Using social media to source and manage interactive relationships

Infographics and Memes

Infographics are graphic visual representations of information, data, or knowledge, intended to present complex information quickly and clearly. They are used for many reasons: They're entertaining, eye-catching, concise, and all the information they contain is easily digested by the reader so they're useful, too. If the quantity of data to be disseminate is more then it's better to use infographics which are increasingly being utilised to help people comprehend the information contained in that data. As a technique of transmitting information, infographics precede writing; cave paintings are likely the first known example. Prior to the invention of written language, people created and used maps. Social media has changed the way we interact with data and other people. A meme is a virally transmitted image embellished with text, usually sharing pointed commentary on cultural symbols, social ideas, or current events.

Mobile APPs

In recent years, Information Communication Technologies (ICTs) especially Mobile Apps have emerged as accessible tools to strengthen the extension system by providing information on Fish, Fisheries, market and advisory services etc.

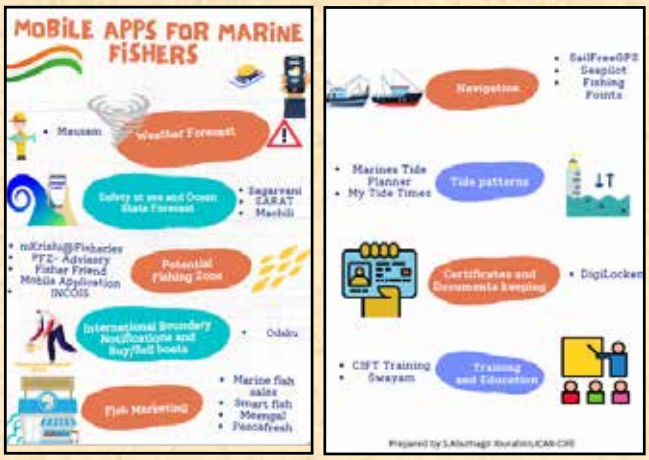

Fig. 2: Mobile applications related to fisheries available for marine fishers

Tools with a significant effect but not fully recognized by managers

Tiktok App	Application for making videos The #SaveOurOceans challenge was created by TikTok and Conservation International to combat marine plastic waste and conserve oceans, marine ecosystems, and the people whose lives and livelihoods are dependent on them. TikTok users are invited to utilise their short movies to demonstrate their support for ocean conservation, raise awareness about the need to safeguard our seas for a better future and motivate others to do the same through a creative call to action. This challenge has received 1.5 billion views thus far. However, now it is banned in India.
Printed / Painted messages	The Rally for Rivers is a public awareness campaign started by Isha Foundation's Jaggi Vasudev in 2017. The event aims to raise public awareness and gather public support for a government policy to safeguard India's rivers, which are drying up and become seasonal. Missed call to 80009 80009 was recorded for support for this cause. These type of printed conservation messages has psychological changes towards conservation and awareness, especially it creates a positive note to the young minds.

Conclusion

The way of information dissemination has changed over the years from traditional to latest tools. The recent evolution of social media along with attractive tools reaches wide audiences irrespective of age, gender and geographical restrictions etc. In present days many organisations have official pages in social media, blogs, and groups which provides a quick response to the question and dissemination of info to the public which saves time and money. Fishers are receiving the appropriate information at the right time like a weather forecast at their fingertips through the advancement of technologies. Policymaking and management of fisheries are dependent on effective information systems. If these tools are properly utilized, this communications revolution has the potential to benefit fishers, the public, scientists, educators, environmental advocates, and natural resources managers in a variety of ways.

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Playful eels for your aquarium

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.

Spiny eels or swamp eels are members of the family Mastacembelidae. They are distributed in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Myanmar, Thailand, Malaysia, Vietnam and Indonesia. Spiny eels are not true eels, but are called so due to their similar appearance to eels. The body is long and eel-like with a long fleshy snout and rounded caudal fin that is separated from the dorsal and anal fins. The body colour is brownish to yellowish and marked with dark bands or blotches. Due to its beautiful and slender body structure, colouration and playful behaviour they have great demand in the ornamental fish trade. Spiny eels are very susceptible to fungal and bacterial infections. Hence, special care should be given if it gets injured to prevent infection. They can live in fresh and brackish water. Though there are more than a dozen species known, two species, *Macrognathus aculeatus* and *Mastacembalus armatus*, are of much importance as far as the ornamental fish market is concerned.

M. aculeatus is commonly referred to as the peacock eel or spotted spiny eel. It has a bare light brown body with round four ringed spots on the top of the long dorsal fin. Both the caudal and dorsal fins have several fine streaks. They would attain a maximum size of about 25 - 30 cm when fully grown. They have nocturnal feeding habits, preferring to hide by burying themselves in the substrate or hiding under rocks during the day and coming out at night or early morning to feed. The water parameters should be neutral to slightly alkaline, having pH of 7.2 with temperature between 24 and 26°C. They are carnivorous and the young ones feed on live foods such as brine shrimp and a variety of worms especially black worms. When they become larger, they will eat small fish. They can be bred in captivity. It is difficult to determine the sex when they are young. In general, females are slightly larger than males of the same age. During the breeding stage, the female develops a swollen abdomen with a greenish tinge and clear anal papillae. Females lay 800 – 1000 transparent and large eggs. The eggs will hatch within three days. The young ones are fed on Cyclops nauplii.

M. armatus, is better known commercially as the tire track eel or zigzag eel or fire spotted eel. It is usually found in streams and rivers with sand, pebbles or boulder substrate of Asia: Pakistan to Vietnam and Indonesia. As a member of the family Mastacembilidae, they have a row of spines along the back. It is an interesting fish and would be a good addition to a large aquarium. The body is elongate with golden brown colour and has two rows of darker brown longitudinal zigzag lines; more or less connected to form a reticulated pattern. Dorsal, anal and caudal fins form one complete unit encircling the rear. The maximum attainable size is 90 cm. They generally hide in the substrate or under rocks during the day and come out only at night and early morning to feed. Hence, it would be ideal to keep enough hiding places in the aquarium. The ideal water conditions are; pH 6.5 - 7.5 with temperature ranging from 22 - 28°C. They have a small mouth and feed on worms and mosquito larvae and may also accept some dried foods such as pellets and freeze-dried blood worm. They are not known to breed in the aquarium or in captivity. The female will have a larger stomach when ready to spawn.

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M/s Astro Aquaculture Pvt. Ltd establishes India's first vertical soft shell crab production facility with RAS in Tamil Nadu

Vertical crab farming is a new concept to maximise crab production from unit rearing space and is a popular form of production in South East Asian countries. Crabs are reared in bio-secure environment in small boxes placed vertically one above the other and connected to Re-circulating Aquaculture System (RAS) for maximum utilisation of space, inputs and energy. Primary advantage of placing individual crabs in boxes is that it reduces mortality due to cannibalism. RAS helps to maintain optimum water quality required for the rearing system. The system can maintain higher biosecurity to ensure disease free crop for the farmer. Unlike conventional farming of mud crab in ponds, vertical crab farming requires close monitoring of water quality parameters and require balanced feed ration to ensure successful production.

Vertical Crab farming is at a nascent stage in India. Earlier, there were many initiatives taken by enterprising farmers across maritime states to make this concept into a viable and commercial production activity. However, it is for the first time that an indoor facility exclusively for vertical crab farming has been established with modern Re-circulating Aquaculture system by M/s. Astro Aquaculture Pvt. Ltd. at Ponneri in Thiruvallur district of Tamil Nadu.

All the components in the production system are either manufactured by Astro or sourced locally, supporting *Make in India* project. Astro has been successfully fattening and producing soft shell crabs in their facility and supplying to the local seafood restaurants. Astro has also conducted nursery rearing of crab instars to produce crablets and supplied to pond based farmers. Astro is supplying the mud crab boxes and RAS for crab farmers. MPEDA-RGCA has been supporting the initiative of Astro by supplying good quality crab instars and crablets.

Vertical soft shell crab production facility with RAS at M/s.Astro Aquaculture Pvt Ltd

Dr. A. Ansar Ali, Deputy Director, MPEDA- RD, Chennai inaugurating the unit

Inside view of the vertical soft shell crab production facility

Dr. A. Ansar Ali, Deputy Director, MPEDA- RD, Chennai inaugurating the training programme

In this context, Sub Regional Division of MPEDA in Nagapattinam initiated a demonstration programme in Astro for production of soft shell crabs by growing hatchery reared crab instars in vertical crab housing connected to RAS.

MPEDA in association with Astro organised a training programme by utilising the resource persons from MPEDA and RGCA, for which Astro offered the facility for live demonstration besides the services of its technicians and engineers for practical demonstrations.

Training programme on Vertical Crab Farming by MPEDA

MPEDA Sub Regional Division, Nagapattinam, has organized a 3-Day Training Programme during 9th -11th March 2022 on" Vertical Crab Farming in Re-circulating Aquaculture System", in a facility established by M/s Astro Aquaculture Pvt. Ltd., at Kollumedu Village, Thiruvallur district, Tamil Nadu. This is the first ever training on vertical Crab farming with RAS conducted by MPEDA. A total of 20 participants belonging to various states viz., Andhra Pradesh, Goa, Karnataka, Maharashtra, Tamil Nadu and Telangana attended the training programme. Some of the participants are in the process of setting up their own units for vertical crab farming in their respective regions. The programme was inaugurated by Dr. A. Ansar Ali, Deputy Director, MPEDA Regional Division, Chennai.

The technical sessions were handled by Dr. P. Jayagopal, Deputy Director, and Mr. S. Pandiarajan,

Dr. A. Ansar Ali, Deputy Director, MPEDA Chennai, distributing certificates to the trainees

Participants of the training programme with MPEDA Officials

Assistant Director, from MPEDA Nagapattinam, Dr. V. Shanmugha Arasu and Dr. G. Dinakaran, Senior Scientific Officers from MPEDA-RGCA. Subjects covered during the training programme include ecology & biology of Mud crab, nursery systems, grow out and disease management in Mud crab farming, soft shell Mud crab production, vertical Mud crab farming in boxes, recent advances in Mud crab aquaculture, basic Re-circulation Aquaculture Systems and status of Mud crab exports from India and its potential.

Practical sessions were also conducted on morphology and identification of species, water quality management, feed preparations and its management, assembling and installation of crab house for vertical Crab farming, quarantine of the wild stock, transportation of Mud crab seeds, juveniles and marketable size crabs etc. Trainees were also demonstrated the operation of various units of RAS and their respective maintenance requirements. Certificates to the trainees were issued by Dr. A. Ansar Ali, Deputy Director, MPEDA Chennai.

Saline water high value finfish aquaculture – A step forward towards 'Blue Economy'

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Introduction

The 'Blue Economy' is a marine based economy concept which is aimed at the sustainable use of ocean resources for economic growth, improved livelihoods and jobs, while preserving the health of the ocean ecosystem. India has a vital role in promoting Blue Economy, since the livelihood of a large number of coastal population in the country depends on the fishery resources from the oceans. It is generally accepted that capture fisheries alone is insufficient to meet the growing demand for seafood in the future years. In this context, mariculture, which is a specialised branch of aquaculture involving the cultivation of economically important marine plants and animals has immense potential to meet the additional demand for seafood in the country and thus can play a vital role towards blue economy.

Global scenario

At global level, mariculture produces many high value finfish, crustaceans, and molluscs like oysters, mussels, clams, cockles and scallops.

In 2018, mariculture has contributed around 30.8 million tonnes of food fish globally which formed about 37.5 % of the foodfish aquaculture production (World foodfish aquaculture production was 82.1 million tonnes in 2018). In recent years at a global level a rapid growth in high value saline water finfish culture is noted which has shown an average annual growth rate of 9.3% from 1990 onwards.

Harvesting of cage farmed cobia by CMFRI, Mandapam

The total saline water finfish aquaculture production has contributed 7.3 million tonnes in the year 2018 (FAO,2020). The major finfish groups which are maricultured include salmonids, amberjacks, sea breams, sea basses, croakers, groupers, drums, mullets, turbot, other flatfishes, snappers, cobia, pompano, cods, puffers and tunas.

The species for which captive breeding and hatchery production methods have been established include the Atlantic salmon *Salmo salar*, the yellowtail *Seriola quinqueradiata*, the breams *Sparus aurata*, *Pagrus major*, A*canthopagrus schlegeli*, European sea bass *Dicentrarchus labrax*, the Asian sea bass *Lates calcarifer*, the red snapper *Lutjanus argentimaculatus*, the cobia *Rachycentron canadum*, the turbot *Scophthalmus maximus*, the halibut *Hippoglossus hippoglossus*, the cod G*adus morhua*, the Japanese flounder Paralichthys olivaceus, the yellow croaker *Pseudosciaena crocea*, many species of groupers (*Epinephelus spp*.) and pompanos (*Trachinotus spp*.).

Currently on a global basis commercial cage culture has been restricted to the culture of high value, compound feed fed finfish species, including salmon, Japanese amberjack, red sea bream, yellow croaker, European sea bass, gilthead sea bream, cobia and groupers.

The expansion of sea cage farming on a global basis can be attributed as a shot in the arm for the increased farming of marine finfish.

Cage culture has made possible the large-scale production of commercial finfish in many parts of the world and can be considered as the most efficient and economical way of rising fish. (Halwart *et.al.*, 2007).

Indian scenario

India is still in its infancy in the development of sea cage farming. Sea cage farming in India was initiated by the Central Marine Fisheries Research Institute (CMFRI) and several successful front line demonstrations were conducted at different parts of Indian coasts.

Subsequently, MPEDA, NIOT and many fisheries developmental agencies of different states have also conducted many participatory cage farming programmes and as a result small-scale saline water cage farming has emerged in many brackishwater lakes as a source of additional income generation. But it has yet to emerge as a substantial production sector for high value saline water finfish.

Major Species and their current status of seed production and farming

a.Asian sea bass

Sea bass is a fast growing species with ability to tolerate wide fluctuations in environmental conditions especially salinity. It fetches fairly good price in the domestic market and there is a scope for export to Middle East and some of the European countries. Comprehensive technology for controlled breeding of seabass was developed in 1997 by Central Institute for Brackishwater Aquaculture (CIBA) and since then the technology has been further refined and validated.

The technology includes captive broodstock development, acceleration of maturation, providing optimum conditions like water quality management, health management and feed management, induction of spawning through hormonal administration and facilitating natural spawning in the Recirculation Aquaculture System (RAS).

Larvae are reared feeding with live feeds like rotifers up to 9th day followed by Artemia nauplii up to 20 days and afterwards weaned to formulated diet or shrimp/fish meat. The fry are further reared in nurseries. Several pond farming and cage farming demonstrations were successfully carried out (Arasu *et.al.*,2008). Subsequently RGCA has played a vital role in the seed production and farming of sea bass in the country.

b.Cobia

Fast growth rate, adaptability for captive breeding, low cost of production, good meat quality and high market demand are some of the attributes that make cobia an excellent species for aquaculture. In recent years the seed production and farming of cobia is rapidly gaining momentum in many Asian countries.

Envisaging the prospects of cobia farming in India, CMFRI has developed the broodstock development, breeding and seed production of cobia and several successful seed production trials were conducted and the technology is now standardised at its Mandapam Regional Centre(Gopakumar *et.al.*, 2011., Gopakumar *et.al.*, 2012 b).

Closer view of harvesting cage farmed cobia by CMFRI at Mandapam

Heap of harvested cobia

Nursery reared cobia fingerlings

The farming protocols for the hatchery produced cobia fingerlings in sea cages with different feeding strategies were developed, tested and validated. Based on the trials, an economically viable farming model has been evolved. Several front line demonstrations and participatory farming were successfully carried out. MPEDA- RGCA has scaled up the seed production and also conducted many successful cage farming demonstrations.

c.Silver pompano

Among the many high value marine tropical finfish that could be farmed in India, the silver pompano, *Trachinotus blochii* is one of the topmost, mainly due to its fast growth rate, good meat quality and high market demand. The silver pompano is caught only sporadically in the commercial fishery and hence its availability is rather scarce. It is a much sought after species and hence the demand can only be met through aquaculture. The farming can be successfully carried out in ponds, tanks and floating sea cages.

The species is pelagic, very active and is able to acclimatize and grow well even at a lower salinity of about 10 ppt and hence is suitable for farming in the vast

low saline waters of our country besides its potential for sea cage farming. CMFRI has successfully developed and standardised the broodstock development, induction of spawning, larviculture and fingerling production of silver pompano for the first time in India (Gopakumar *et.al*., 2012a, Nazar *et. al*., 2012). The growth performance, survival and production capacity of silver pompano, *Trachinotus blochii*, were evaluated and based on the experience gained from several trials, farming protocols were evolved. Seed production is also being carried out by RGCA, CMFRI Centres at Mandapam and Vizhinjam, for supplying to the farmers.

d.Indian pompano

The Indian pompano, *Trachinotus mookalee* enjoys good demand in the domestic market. The species has been prioritized for mariculture in India. Indian pompano hatchery technology has been pioneered by the Regional Centre of CMFRI at Visakhapatnam, Andhra Pradesh. The work on broodstock development and seed production started in 2012 and by 2013, initial success in breeding of Indian pompano was achieved. Subsequently, the centre has achieved large scale seed production of Indian pompano with an average survival rate of 21% since 2016 (Ranjan *et.al*., 2018).

e.Groupers

Groupers are commercially important fish, particularly for live seafood markets in several Asian countries such as Hong Kong, China, Taiwan, Singapore and Malaysia. They are highly prized for the quality of their flesh and most species fetch high market prices. Experimental culture of groupers was initiated in India during 1992. After several trials, broodstock development, sex inversion and captive spawning of *Epinephelus coioides* and *E. malabaricus* were achieved in 2002 and of honeycomb grouper, *E. merra* in 2006 on an experimental basis by CMFRI. However, larval rearing was not successful. The broodstock development and seed production of *E. fuscoguttatus* was also achieved by Rajiv Gandhi Centre for Aquaculture at Andaman and Nicobar Island during 2011 on an experimental basis. Broodstock development, sex reversal and mass scale seed production of *E. coioides* control condition was achieved by CMFRI Centre at Visakapatanam during 2014-16. (Ranjan *et.al*., 2017., Ranjan *et.al*., 2019) As of now more than 0.2 million seeds of orange spotted

Grouper harvested from cage by CMFRI, Visakhapatanam

grouper have been produced in the CMFRI hatchery at Visakhapatnam and distributed to many farmers in Andhra Pradesh, Tamil Nadu, Karnataka and Kerala for culture trials.

f.Pink Ear Emperor

Pink ear emperor, *Lethrinus lentjan* (Lacepede, 1802), belonging to the family Lethrinidae (Order: Perciformes) is an important food fish in India, Arabian Gulf and other South East Asian countries. Recently its captive broodstock maturation in RAS, natural spawning, larval rearing and seed production was achieved at the Vizhinjam Research Centre of CMFRI for the first time (Anil *et.al*., 2019).

g. Pearl spot

Etroplus suratensis, known as "Karimeen'', "Pearl spot", is one of the most important brackishwater finfish in Kerala. It is highly nutritive as food. They are mainly found in backwaters and estuaries. Karnataka and Orissa are the other major states in India, where this fish is found. With its increasing demand, the price of the fish variety is also soaring. Apart from the growing demand from local market and domestic tourism sector, the fish is also exported in large quantity to foreign markets as well. Though, Kerala produces 2000 tonnes of Karimeen annually, it is not sufficient to meet the rising demand for *'Kerala Karimeen'* inside and outside the state. Breeding technology was initially developed by Kerala Agricultural University station at Kumarakom (Padmakumar *et.al*., 2009). Now many small-scale backyard hatchery entrepreneurs are producing the seeds for supplying to saline water cage farmers. It is felt that through proper technological interventions, the

Indian pompano harvested from cage at CMFRI, Visakahapatnam

backyard hatchery operations and seed production can be improved to meet the seed requirement.

The way Forward

The business opportunities that can be developed based on the available technologies include (i) broodstock centres , hatcheries and nursery centres for cobia, silver pompano, Indian pompano, orange spotted grouper , seabass , pearl spot and Pink ear emperor (ii) development of cage/pond farms for cobia, silver pompano, Indian pompano, orange spotted grouper, seabass, pearl spot and pink ear emperor (v) production of grow out feeds for the concerned species (vi) fabrication of site specific and cost effective cages and mooring systems (xii) development of commercial level IMTA systems with finfish, shellfish and sea weed (xiii) Seed and grow out Production through Recirculation Aquaculture Systems.

Challenges

However, there are a few challenges/constraints which need to be addressed before commercialisation of marine fin fish farming. Seed availability is the major constraint for the expansion of commercial level farming of saline water finfishes. The huge demand for marine finfish seeds from fish farmers and entrepreneurs is indicative of the need of the sector. Hence there is an urgent need to establish marine finfish hatcheries by fisheries development agencies /private sector to ensure the seed availability.

In addition, it is required to intensify research programmes for the development of seed production techniques for at least one dozen additional species of high value marine fishes so that farmers can get the seeds of the species of their choice. Ensuring the availability of stockable size fingerlings of species on demand, identification of appropriate cage farming sites, development of economically viable farming protocols, formulation of suitable grow-out feeds, health management protocols, development of cage farming policies and appropriate marketing strategies can go a long way to promote sea cage farming of marine finfish in India.

Conclusion

It is felt that for developing a sustainable farmed saline water finfish production sector, a comprehensive mariculture policy comprising all the vital factors for sustainable development should be formulated and implemented .The policy document should state the strategies to be adopted for mariculture site selection, leasing policy, mariculture systems and species, precautionary approach to environmental sustainability, seed and feed , food safety and health management, capacity building and extension, ecolabelling and

certification, insurance and financial support, market support , institutional mechanisms and legal framework. Recently as per the suggestion from the National Fisheries Development Board (NFDB) India, a draft Mariculture Policy was developed by Indian Council of Agricultural Research (ICAR) - CMFRI and based on the same, the vital aspects needed for a mariculture policy are outlined in www. nfdb.gov.in.

The maritime states have the jurisdiction upto 12 nautical miles off the coastline towards the sea as per the Marine Fisheries Regulation Acts since 1980. Hence the role of the state is very vital in developing marine finfish mariculture. The immediate way forward is an integrated approach by linking up the entrepreneurs, fisheries development agencies, state fisheries departments and marine/brackishwater aquaculture research institutions. In this regard, a mission mode approach headed and co-ordinated by the State Fisheries Departments with the active support of fisheries research institutions and other fisheries development agencies is the need of the hour to develop the farmed marine finfish production sector into a commercial enterprise which can contribute substantially to the Blue Economy.

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Training programme on Best Management Practices (BMPs) in aquaculture

Regional Division Mangalore

Mr. Srishali Gangnalli, Assistant Director Fisheries, Bijapur inaugurating the training programme conducted at Bhutnal, Bijapur district, Karnataka

View of the participants

Presidential address by Dr. Ganesh K., Assistant Director, MPEDA RD, Mangalore

Distribution of certificates to the participants by Mr. K. V. Premdev, Deputy Director, MPEDA RD, Mangalore

Sub Regional Division Bhimavaram

Inauguration of the training program by the farmers and officials at Mahadevapatnam Village of Undi Mandal, West Godavari district

Dr. Pau Biak Lun, Assistant Director, SRD, Bhimavaram delivers a lecture

Mr. Venkata Ramana, Field Manager, NaCSA speaks on cluster farming

Dr. K. Gopal Anand, Assistant Director,MPEDA-SRD Bhimavaram distributes certificate & Stipend to a trainee

MPEDA – NaCSA conducts awareness programmes on "The harmful impacts of single use of plastic & plastic waste management"

Participants at M/s Uttar Panichari Narayan AFWS (Aqua Farmers Welfare Society), Panichari, Marishda, Purba Medinipur, West Bengal

Participants at M/s Paravai AFWS, Paravai farming village, Keelvelur Taluk, Nagapattinam district,Tamil Nadu

Participants with Mr. D. Ekka, Deputy CEO, NaCSA during the valedictory programme of the awareness campaign conducted at MPEDA - NaCSA, Kakinada

Training programme on 'Sustainable aquaculture through species diversification' & BMPs in aquaculture for SC/ST beneficiaries

Sub Regional Division Vizag

Inauguration of the training program at Korlam Village, Gara Mandal, Srikakulam District

Mr. R. Prasad Naik, Assistant Director, MPEDA SRD, Visakhapatnam delivering a lecture to the trainees

Mr. N. Khageswara Rao, FTO MPEDA, delivers a lecture

Mr. Ch. Balakrishna, Scientist, KVK, Amadalavalasa delivering lecture

The participants of the training programme with MPEDA Officials

Field visit for trainees at SC/ST Farm Vatsavalsa village

Training programme on " Eco – friendly sustainable aquaculture"

MPEDA Sub Regional Division, Nagapattinam, conducted a 5 - day training programme on "Eco Friendly sustainable aquaculture" exclusively for the benefit of 20 woman beneficiaries belonging to Scheduled Tribe category during 1-5 March 2022 at Kulathumedu village, Pazhaverkadu, Ponneri taluk, Thiruvallur district, Tamil Nadu. The beneficiaries were already involved in Mangrove (Mud) Crab fattening and rearing of Asian Seabass. Cyclonic storms in 2016 had damaged their farms completely that affected their livelihood opportunities. In order to rejuvenate their hope in continuing their activity and instil confidence, SRD identified 20 Scheduled Tribe candidates and trained them in Mangrove (Mud) Crab and Asian Seabass aquaculture covering nursery rearing, pre-grow out and grow out farming technologies.

Dr. Ezhilarasi, Asst. Professor, Fisheries College & Research Institute, Ponneri takes class

Participants with the certificates

Farmers meet on antibiotic issues, BMP's and diversification in aquaculture

Sub Regional Division Bhimavaram

Inauguration of the farmers meet at Allavaram, East Godavari district

Mr. N. Srinivas Rao, Joint Director, Dept. of Fisheries, East Godavari district addressing the farmers

Dr. Pindi Sai Baba, Shrimp Pathologist, Amalapuram, delivering a lecture on disease management

Dr. Gopal Anand, Assistant Director, MPEDA SRD, Bhimavaram, delivering a lecture

Farmers' Meet on "Recent trends in aquaculture and species diversification"

Regional Division Kochi

Mrs. Girija Krishnan, President, Panamaram Block Panchayat, Wayanad inaugurates the farmer's meet at Mullankolli village in Wayanad

Mr. Johnson D' Cruz, Deputy Director, MPEDA RD Kochi, delivering the welcome address

Mr. Bijimon, JTO, MPEDA RD Kochi, speaks during the technical session

Mrs. Manjusha K., Field Supervisor, MPEDA RD Kochi, during the technical session

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

Regional Division Kochi

Mr. Sankara Pillay R., Deputy Director, MPEDA RD, Kochi, lectures during the training programme at Thiruvarppu, Kottayam district

Mrs. Preetha Pradeep, Technical Officer, MPEDA RD Kochi, during the technical session

Mr. Wilson C., Joint Director(Aquaculture), MPEDA distributes Certificate to the trainees

MPEDA QC lab Kochi organized 'Training on method validation and regulatory requirements of importing countries'

MPEDA Quality Control Laboratory, Kochi has organized a training programme on 17th February 2022 for the laboratory officials on "Method validation of importing countries and regulatory requirements of importing countries". The training focused the changes in the method validation as per the Commission implementing regulation (EU) 2021/808 of 22 March 2021, FDA Compliance Program Guidance Manual, Chemotherapeutics in Aquaculture seafood Compliance Program, 7304.018 and the regulatory requirements of importing countries.

Mr. Mahesh G., Dy. Director (Lab), MPEDA HO has introduced the training sessions. Mr. Venugopal D., Assistant Director, MPEDA QC Laboratory, Nellore took a session on method validation based on Commission implementing regulation (EU) 2021/808 & FDA Compliance Program Guidance Manual, Chemotherapeutics in Aquaculture seafood Compliance Program, 7304.018.

He has explained the strategy of method validation at testing laboratories to establish the reference point for action (RPA). He has also elucidated the method validation techniques followed by USA. The session also included brief note on measurement of uncertainty and reporting of test results based on CC alpha & LOQ depends on the requirement of various importing countries. Second session of training was on regulatory requirements of importing countries which has been taken by Dr. Abhilash E.C., Assistant Director (Lab), QC Laboratory Kochi. He has explained the various import regulations for fish and fishery products, and presented the analytical requirements required by EU and other major markets.

Mr. Venugopal D, Assistant Director takes the session on Method Validation

Mr. Mahesh G. Dy. Director (Lab) introducing the training sessions to the participants

Training programme on sea safety & navigation by MPEDA-NETFISH

MPEDA-NETFISH, Kolkata organized 3 days NFDB sponsored physical training programme on “Sea Safety & Navigation" at Akshaynagar, Kakdwip, South 24 Parganas. 50 SC skippers and drivers of mechanized fishing vessels participated in the training programme.

Officials of Indian Coast Guard inaugurated the programme. State Coordinator, NETFISH and retired officers of State Fisheries department took classes and demonstrated uses of various life saving & navigational equipments for sea safety & navigation.

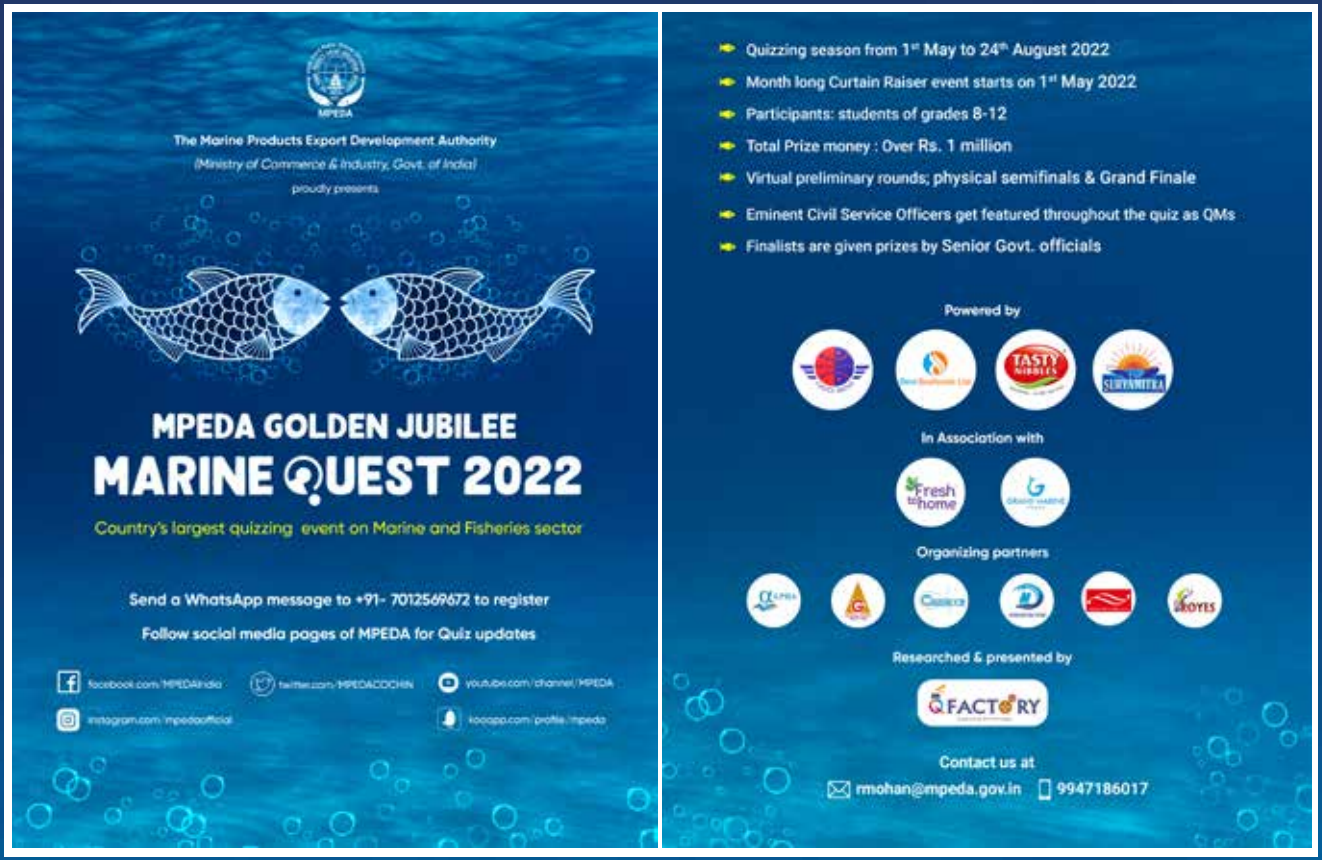
MPEDA Golden Jubilee Marine Quest - 2022

MPEDA was established in 1972 under the Ministry of Commerce & Industry with an objective to promote the export of marine products. MPEDA through its field offices and subsidiary organizations such as NETFISH, NaCSA and RGCA, and has contributed immensely to the fisheries and aquaculture production of the country, and towards the foreign exchange earnings through export of marine products.

The seafood sector, which was worth a few million dollars in the '70s has touched a record figure of US$ 7.74 billion in 2021-22, despite the crises due to Covid pandemic and other trade issues. The Authority has kick-started its Golden Jubilee year celebrations on 24th August 2021. MPEDA celebrates its Golden Jubilee with a myriad of activities and programmes along with "*Azadi Ka Amrit Mahotsav*" being celebrated by the nation.

On this occasion, as done in previous years, it is planned to conduct a **"MPEDA Golden Jubilee Marine Quest - 2022"** for the school students across the country with total prize money worth Rs. 12.00 lakh. This is the fourth edition of MPEDA Marine Quiz competition, and the previous ones, which were confined to coastal states, were commendable successes in terms of reach and participation.

The Marine Quiz will enthuse sufficient interest about the fisheries, aquaculture production, processing and export sectors as well as on the importance to protect its biodiversity and resource sustainability. This year the quiz competition will cover not only the matters



related to Aquaculture / Fishery and GK but will also stress on environment and its protection.

"MPEDA Golden Jubilee Marine Quest - 2022" will be conducted in 4 different stages during 1st May to 24thAugust 2022. The month long curtain raiser event starts on 1st May 2022. Students of grades 8th to 12th are eligible to participate in the quiz. Preliminary rounds will be held virtually, while the semi-finals and grand finale will be conducted physically at a designated venue. Eminent Civil Service Officers get featured throughout the quiz as Quiz Masters. The total prize money worth over Rs. 1 million and the prize distribution will be organized as a separate function on 24th August 2022, the day of Golden Jubilee celebration of MPEDA and the finalists are given prizes by Senior Government Officials.

Online stages and the daily curtain raiser poster quiz events will be a part of the programme, which will be circulated and promoted through social media handles of MPEDA such as Facebook, Twitter, Instagram, Koo etc. The winners of each day will be provided with prizes. The finalists and semi-finalists will be awarded with certificates and cash prizes. The final round of the "MPEDA Golden Jubilee Marine Quest - 2022" will be held offline and will be popularized through broadcasted through MPEDA You Tube channel. This Quiz event is also endorsed by International Quizzing Association Asia Chapter. MPEDA cordially invite the students of classes 8th to 12th from schools across India to participate in the "MPEDA Golden Jubilee Marine Quest - 2022" and make it a grand success.

The registration for stage I, the curtain raiser stage is open. The google form link for registration shall be obtained by sending a WhatsApp message to the mobile number **+91- 7012569672**. The updates and details may be obtained through the Facebook / Instagram pages and twitter handles of MPEDA, and Q Factory, the knowledge partners of the event. An e-brochure on the event is also enclosed for your information.

For further queries in this regard, please contact Dr. Ram Mohan M.K., Joint Director either by email (rmohan@mpeda.gov.in) or by phone @ 9947186017.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Seaweed farming initiative launched in India

A new seaweed farming project has been launched in a bid to provide Tamil Nadu's struggling fishing communities with alternative, sustainable livelihoods. Launched by non-profit Grow-Trees, it aims to improve the lives of fishers, at a time when global seaweed production is set to double in value, to reach $26 billion by 2025.

"We are providing equipment and expertise to fishing communities via a seaweed cultivation project in Munaikkadu, Mandapam Camp, Ramnad District, Tamil Nadu. This is being done to increase the income and self-sufficiency of the coastal community and subsequently, these women can train more marginalised communities to augment their earnings. We will fund the training and equipment and will leverage this experience to expand this module to other marginalised communities along the coast of India," said Bikrant Tiwary, CEO of Grow-Trees, in a press release.

Over 750 people are set to benefit from the project, according to Grow-Trees.

“Only 15 families right now own seaweed cultivation equipment while the others earn a meagre livelihood. Empowering this community is the long-term goal of Grow-Trees.com,” the organisation notes.

Hanifa Begum from Munaikkadu is one such beneficiary, who said: "My husband is a fisherman but his income is not sufficient to sustain the family. Grow-Trees.com gave us two rafts and also taught us how to cultivate seaweed in an efficient way. We are hopeful that a good harvest will help us lead a better life and also educate our children. I thank Grow-Trees.com and the Annai Theresa Trust."

Muthulakshmi is another resident of Munaikkadu who has now started seaweed cultivation.

"My husband is an auto-driver and we were struggling to make two ends meet. Now two rafts from Grow-Trees.com have really helped us augment our income and educate our children comfortably," she said.

"These livelihood issues can be solved very simply. A single bamboo raft priced at Rs 2000 can be used to plant over 70 kg of seaweed seedlings and after 45 days, almost 230 kg of seaweed can be harvested and sold for Rs.65 to 70 per kg. Hence if a family has 40 to 45 such bamboo rafts, it can earn over Rs.800 per day and become self-sufficient. We call this scheme, the 'Blue Revolution' as it can help fishing communities to earn even when the fishing output becomes sporadic and unreliable. It can also help communities in need to supply much-in-demand raw material to industries manufacturing agar, agarose, carrageenan and alginates,” said Tiwary.

www.thefishsite.com

CIFT finds way to reduce fuel intake of trawlers

Taking up the challenge of addressing the issues related to high fuel consumption in the fishing sector, the Kochi-headquartered Central Institute of Fisheries Technology (CIFT) has come up with an innovative model for reducing carbon emission.
The model, a V-form double-slotted otter board, will aid in considerably reducing the burden of ever-increasing fuel prices, reducing carbon emission and thus improve the economic performance of the trawl sector. Otter boards are gear accessories used for keeping the mouth of the trawl net open horizontally and its invention has revolutionized the stern trawling from a single boat.

A study by CIFT revealed that about 165 million litres of diesel are consumed annually by the 3,678 trawlers in Kerala. The hydrodynamic drag of the trawl net and accessories is the major factor responsible for high fuel consumption in trawling. A pair of otter boards account for 20% of the trawl drag.

The new V-form double-slotted otter boards were found to be effective in less drag and limited fuel consumption; in addition, the slots provided permit water to flow through the otter board, thereby reducing the resistance significantly compared to the conventional otter boards.

Field trials on board CIFT research vessel RV Matsyakumari–II, revealed that on an average three litres of diesel can be saved per hour for trawling in comparison with non-slotted V-form otter boards of the same size and weight.

https://timesofindia.indiatimes.com

Walmart supplier The Fishin' Company invests in massive Indian tilapia farm

US importer The Fishin' Company is reportedly investing INR 10 billion (€119.7 million/$131.7 million) in the southern Indian state of Telangana to build a 85,000-metric-ton tilapia farm.

The company will be establishing the project near Mid Manair reservoir in the Rajanna Sircilla district, according to Indian media sources and a Twitter post from the Telangana IT, Industries and Municipal Administration.

The announcement was reportedly made by company Chairman and CEO Manish Kumar after his meeting with Telangana Industries Minister KT Rama Rao at San Jose on Thursday.

The company's investment will fund a fully integrated freshwater tilapia farm, including hatcheries, feed manufacturing, processing and exports.It will produce 85,000 metric tons of tilapia per year and employ over 5,000 people, according to the ministry.

The Fishin' Company is one of the largest suppliers of frozen fish to Walmart and other major US retailers.

The company, whose headquarters are listed at what appears to be a single-family home in Pennsylvania, has a significant number of its staff based in Arkansas, which is no coincidence: the state is home to retail giant Walmart, which makes up a significant portion of the group's business.

The firm has supplied a huge range of wild and farmed products to Walmart over the years, including pangasius, wild salmon, shrimp and Pacific cod, most of which are processed in China. Its main species, however, is tilapia.

According to its website, the company is the largest importer of the product in the United States.

www.intrafish.com

Novel diagnostic tool for white spot wins patent

A novel diagnostic tool for detecting White Spot Syndrome Virus (WSSV) – one of the pathogens that cause most damage to the shrimp farming sector - has recently been granted a patent.The peptide-based diagnostic tool has been developed by scientists of Agharkar Research Institute (ARI), an autonomous institute of India's Department of Science and Technology (DST). According to a press release from India's Press Information Bureau, it was granted a patent on 31 March 2022 as an alternative biorecognition element.

WSSV infections in *vannamei* shrimp results in huge losses of shrimp around the world each year. Technologies for early and rapid detection of pathogens in the field should help to prevent losses.

ARI scientists Dr Prabir Kulabhusan, Dr Jyutika Rajwade and Dr Kishore Paknikar developed the lateral flow assay using gold nanoparticles for easy visualization of the results. Instead of using poly-/mono-clonal antibodies in assay development, the ARI scientists selected twelve amino acid containing peptides from a phage display library by biopanning. According to ARI this is "a time- and cost-saving approach, eliminating the need for immunization of laboratory animals to obtain the antisera. With the use of peptides, cold-chain requirements for storage are reduced and the assay becomes production friendly".
"Our data indicates high specificity (100 percent) and sensitivity (96.77 percent) of the assay, early detection from haemolymph, highly reproducible results with a time-to-result of only 20 minutes," said Dr Jyutika Rajwade.

ARI PhD student Ms Snehal Jamalpure-Lakka now aims to take this work further for commercialisation.

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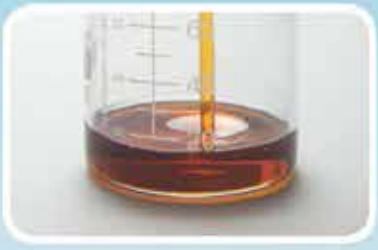
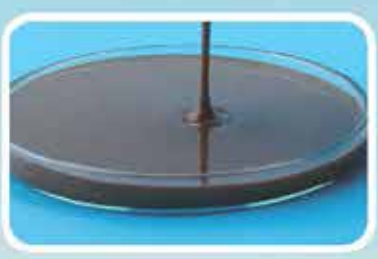

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MPEDA Officials successfully complete NABL Assessor training course

Dr. Md. Khamar Jahan

Mrs. J. Hymavathi

Dr. Md. Khamar Jahan & Mrs. J. Hymavathi,
Jr. Technical Officers from QC, Lab, Nellore have successfully completed NABL Assessor Training Course on ISO / IEC 17025:2017 conducted at Gurugram during 14-16 March 2022.

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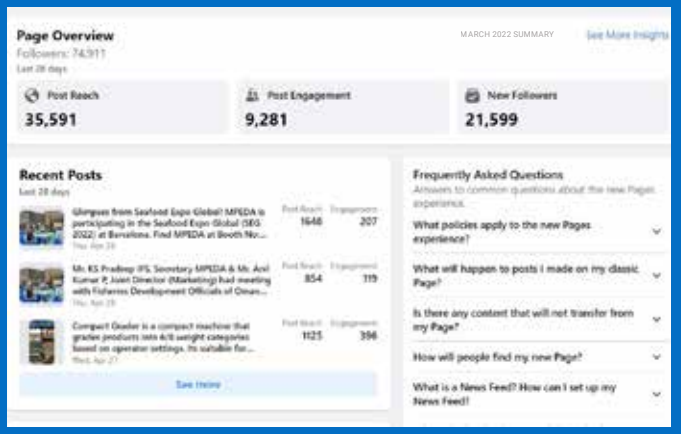

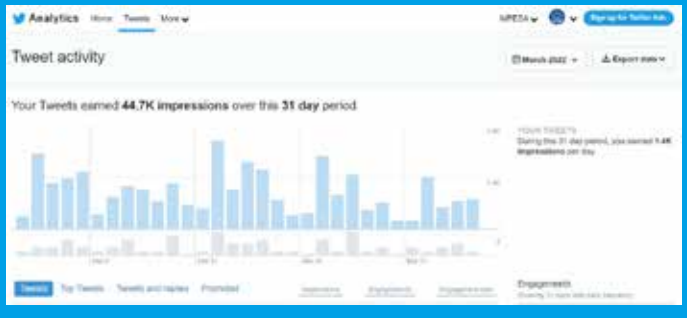

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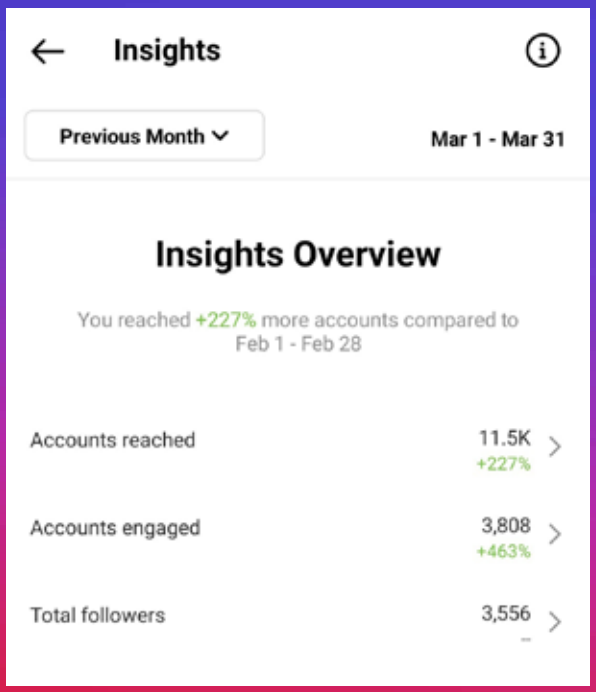

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