MPEDA

Newsletter

VOL. XII 🕮 NO.01 🕮 APRIL 2024

Indian seafood steals the show **SENA 2024** in Boston

Navigating New Horizons: **MPEDA Trade Delegation to Hong Kong**

Microplastics in Seafood: **Implication for post-harvest loss, seafood quality and human health**

Dive into our new series: **Better Management Practices in scientific shrimp farming**

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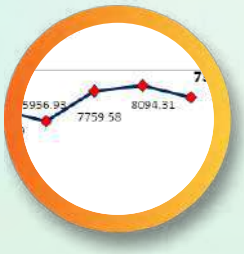

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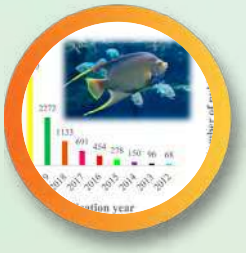

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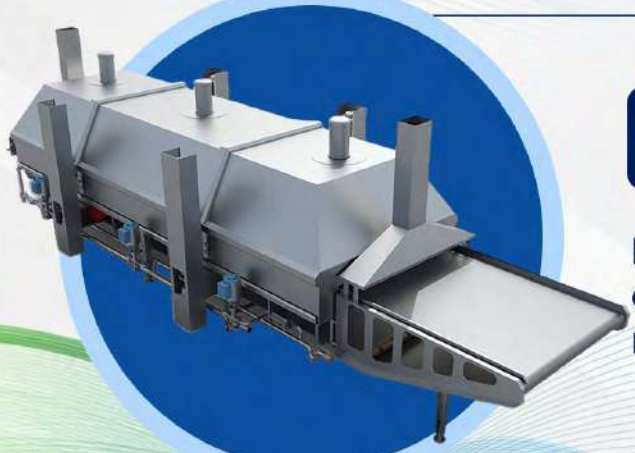

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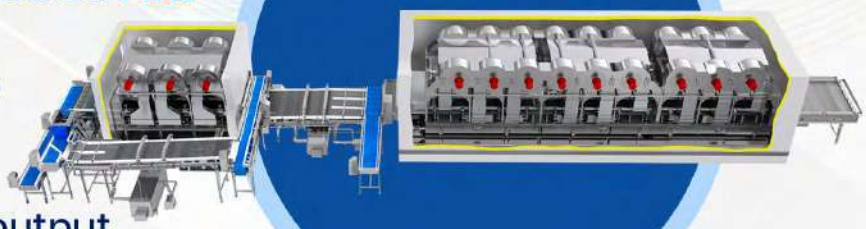

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On the Platter

D.V. Swamy IAS
Chairman

Dear friends,

The importance of food safety is increasingly emphasized in international trade negotiations and business discussions. As a result, many importing countries have recognized its significance and are regularly updating their regulations. In India, we, as a collective of stakeholders, including the competent authority, the Food Safety and Standards Authority of India (FSSAI), consistently align with international developments and endeavour to enhance our regulations to meet global standards.

The regulations established by the Codex Alimentarius Commission serve as the standard rules for most countries' standards development. Codex's draft notifications are subjected to rounds of deliberation before they are finalized.

I was honoured to participate in the 54th session of the Codex Committee on Food Hygiene held in Nairobi, Kenya, from 10th to 15th March 2024. The session had detailed discussions on various topics, including microbiological parameters in fish & fishery products and the use and reuse of water. CCFH 54 has agreed to remove the name of *Vibrio harveyi* from the list of food-borne pathogens in the footnote of document 9 based on the suggestion by India, as it is a fish pathogen. This is a significant achievement for us. Moreover, CCFH 54 has approved the proposal of including India as one of the co-chairs in the physical working group of fish & fishery products of CODEX. This role comes with responsibilities and opportunities to shape the global standards in our industry, and we are committed to fulfilling them.

Seafood processors play a crucial role in our industry's growth. Your access to the notifications from the Codex Alimentarius Commission and other regulatory bodies, and your ability to provide comments to MPEDA, EIC, or FSSAI, is invaluable. Your input will significantly contribute to the deliberation and finalization of standards, ensuring the protection of our trade interests. Your voice matters.

Unauthorized use of antibiotics in aqua farms continues to be a matter of grave concern. This practice has led to Indian aquaculture shrimp consignments being rejected in markets like the USA and EU due to residues of such compounds. This not only affects our trade but also raises serious health and safety concerns. Despite the formation of Antibiotics Task Force Committees in all coastal states to inspect the value chain including the veterinary medical shops, inspections are not happening in most states. During a meeting organized by MPEDA on 19th March, 2024, with the Coastal Aquaculture Authority and the Department of Fisheries in coastal states, I emphasized the urgent need to enhance monitoring through task force committees and enforce penalties on violators. Regular inspections by task force committees of hatcheries, aqua farms, and veterinary medical shops are crucial to restrict the illegal supply and use of substances suspected to contain banned antibiotic residues.

MPEDA had a remarkably successful participation in the Seafood Expo North America held at Boston during 10th to 12th March 2024. 16 exporters, along with MPEDA, showcased their products in the Indian pavilion, marking a significant stride in our industry's global presence. Measures are in full swing to showcase India in Seafood Expo Global at Barcelona during April 2024, promising even more opportunities for our exporters. MPEDA, in collaboration with the Consulate General of India office in Hong Kong, organized a Buyer Seller Meet and seafood tasting session in Hong Kong from 27th to 28th March 2024. 9 exporters from India participated in the event and had fruitful interactions with the buyers, further strengthening our trade relations.

Thank you,

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Bworld Corporate Solutions Pvt Ltd
166, Jawahar Nagar, Kadavanthra
Kochi, Kerala, India 682 020
Phone: 0484 2206666
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LAYOUT
Mr. Amil M. S.

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Indian seafood steals the show in SENA 2024 Boston

The 42nd edition of Seafood Expo North America (SENA) 2024 was held from 10th to 12th March, 2024 at Boston Convention and Exhibition Centre (BCEC). SENA is America's largest seafood trade exposition features seafood companies displaying a variety of fresh and frozen, canned, value-added, processed, and packaged seafood products in the show. SENA also provides opportunities to discover suppliers, products, and trends while creating key business connections. This year's exhibit space spans 2,49,665 net sq. ft. which is 5 percent larger than last year's event, and hosts 1,210 exhibiting companies from 49 countries, including new participating exhibiting countries such as Azerbaijan, Germany, Kenya, Malaysia, Mauritania, Tanzania, and Uganda. The expo was organized by Diversified Communications, the international leader in seafood Industry Expositions and media.

The expo also offered unique special events, awards and features to enhance attendees' onsite experience and product knowledge with the new and featured product showcases, the Seafood Excellence Awards announcement and reception, Oyster Shucking Competition, demonstrations, seafood tasting, live podcast recordings with Seafood Source Presents.

Indian Pavilion

The Indian pavilion was organized at stall no. 2833 by MPEDA with an area of 2,000 sq. ft. 16 exporters participated as co-exhibitors. The expo participation was organized by Mr. K.S. Pradeep IFS, Secretary, Mr. A. Jeyabal, Joint Director, Regional Division, Vijayawada and Mr. Mahesh G., Deputy Director, MPEDA . The following co-exhibitors participated and exhibited their products in SENA 2024.

Sl. No	Company Name	Sl. No	Company name
1	M/s. Sashimi Foods	9	M/s. Ulka Seafoods Pvt. Ltd.
2	M/s. Seafood Innovations	10	M/s. Deva Seafoods
3	M/s. Green Asia Impex Pvt. Ltd.	11	M/s. ITC Ltd.
4	M/s. Highland Agro Pvt. Ltd.	12	M/s. NDM Seafood Processors & Exporters Pvt. Ltd.
5	M/s. Jeelani Marine Products	13	M/s. DN Sea Shells
6	M/s. Arya Seafoods Pvt. Ltd.	14	M/s. Continental Marines
7	M/s. The Waterbase Ltd.	15	M/s. BMR Industries Pvt. Ltd.
8	M/s. Calcutta Seafoods Pvt. Ltd.	16	M/s. Pasupathi Aquatics Pvt. Ltd.

The India pavilion was inaugurated by Mr. Binaya Srikanta Pradhan, Consul General of India in the presence of Dr. Varun Jeph, Deputy Consul General of India, New York, Mr. K. S. Pradeep, Secretary, MPEDA, other officials of MPEDA and Indian co-exhibitors. The Consulate General visited all the stalls of Indian co-exhibitors and interacted with exporters.

Inauguration of the India pavilion by Mr. Binaya Srikanta Pradhan, Consul General of India, New York

View of India pavilion

View of exhibition

Mr. K. S. Pradeep, Secretary MPEDA interacts with Mr. Binaya Srikanta Pradhan, Consul General of India, Dr. Varun Jeph, Deputy Consul General of India, New York and Ms. Pauline Chee, Diversified Communications

MPEDA officials interacting with buyers

Co-exhibitor stalls

Seafood samples of frozen and value-added IQF-PD, PUD shrimp, skewers, AFD shrimp, cephalopods etc. were displayed in the MPEDA stall. Value added products of special interest for the visitors are listed below.

Breaded Butterfly prawn IQF	Breaded prawn nuggets IQF
Breaded prawn Popcorn IQF	Breaded squid rings IQF
Prawn Samosa IQF	Breaded Prawn Fingers IQF
Frozen Seer Fish Steaks	Squid Rings IQF
AFD Shrimps	IQF PDTO Monodon

MARKETING NEWS

Seafood tasting session

There was a tasting session arranged in MPEDA pavilion and Chef Mr. Hemanth prepared and served a variety of seafood dishes to the visitors, which attracted many visitors to India Pavilion.

Cooking demo at MPEDA stall

Mr. Troy R. Petrillo, Supervisory Consumer Safety Officer, USFDA visited MPEDA stall and had a detailed discussion with Mr. K.S.Pradeep, Secretary, MPEDA on various matters in the presence of Mr. A. Jeyabal and Mr. Mahesh.

Mr. Troy R. Petrillo, Supervisory Consumer Safety Officer, USFDA interacting with Mr. K. S. Pradeep, Secretary, MPEDA

Besides, Ms. Briana Hurley, Chief, Northwest Region, Mr. Lawrance, Chief Northeast region and other officials of US Dept. of Commerce and National Oceanic & Atmospheric Administration (NOAA) visited MPEDA stall and Mr. K. S. Pradeep briefed them on the initiatives taken by MPEDA with regard to TED implementation in India.

NOAA and MPEDA officials at MPEDA stall

Views of Indian exporters

There were considerable meetings and negotiations held in the co-exhibitor exporters stall. The exporters have confirmed new orders with buyers from the USA and other countries. Most of the co-exhibitors confirmed their participation for next year SENA-2025.

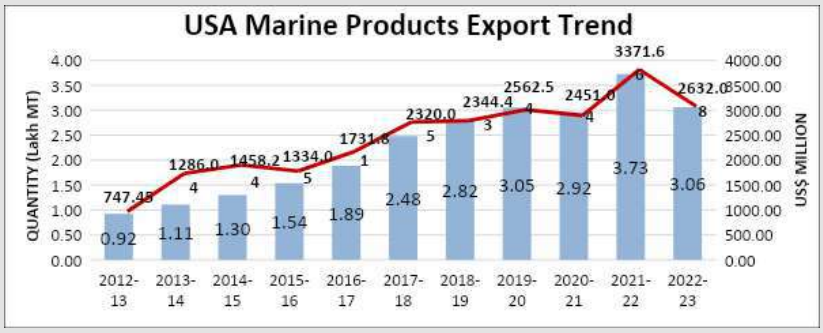
Visit to Indian Embassy at New York

Mr. K.S. Pradeep, Secretary, MPEDA along with Mr. A. Jeyabal, Joint Director and Mr. Mahesh, Deputy Director visited Consulate General of India in New York and discussed with Consul General and Deputy Consul General on the issues faced by Indian exporters for exporting seafood products to USA.

MPEDA officials with Mr. Manish Kulhary, Consul (Trade), Consulate General of India, New York

Seafood trade of India with USA

In 2022-23, India exported 3,06,334 MT of marine products worth ₹ 20,600.35 Crore and US$ 2,632.08 million to the USA. USA retained the title as the major importer of Indian seafood with a share of 32.52% in terms of US$ during 2022-23. The decadal export trend of the USA shows an increasing trend with a CAGR 13.42% in US$ terms and 12.73% by volume.



Frozen shrimp is the major item exported to USA with quantity 2,75,662 MT (89.99% share), value ₹19,105.37 crore (92.74% share) and US$ 2,439.87 million (92.70% share) registering a decline of 19.53%, 16.87% and 22.46% respectively.

Canned chilled pasteurized crab meat, *surimi* and *surimi* analogue products, products of octopus, fish oil, prepared and persevered VAP etc. grouped as "Other items" ranked second among the items of export to USA recording 18,179 MT (5.93% share) worth ₹ 730.88 Crore (3.55% share) and US$ 92.81 million (3.53% share). This group showed a growth of 13.48% in terms of quantity.

Frozen squid and frozen fish are the third and fourth top products exported with US$ 57.36 million (2.18% share) and US$ 33.22 million (1.26% share).

The top 4 product types contributed 99.66% share in US$ value in the export of marine products from India to USA.

Value added products having highest percentage growth YoY in US$ terms were frozen Crab stick (29%), IQF cooked peeled vannamei shrimp (16%), frozen Imitation sea spray shredded crab flakes (5.6%) and frozen vannamei shrimp burger (5.7%). Overall the exhibition and active participation of MPEDA alongwith exporters has helped in showcasing not only our conventional products before the US customers, but also the variety of value added products manufactured and exported by our units. The enthusiasm of buyers and customers are expected to turn into future business in US and neighbouring markets.

Seafood Excellence Awards at SENA 2024

Seafood Expo North America/Seafood Processing North America brings out Seafood Excellence Awards in every edition. The Seafood Excellence Awards competition at Seafood Expo North America/Seafood Processing North America aims to honour the most innovative new seafood products showcased at the event each year. Winning products are announced on the first day of the event at the Demo Theatre, receiving special recognition, prominent display in the exhibit hall, and extensive promotion through press releases, social media, and the event's website. The competition features two award categories: Best New Retail Product and Best New Foodservice Product.

The 2024 edition, held from 10th to 12th March 2024, in Boston, also brought out certain excellent products that were recognised in the event after a rigorous selection process.

Judging criteria

Sl. No.	Criteria	% of total
1	**Taste profile** (flavour, texture, aroma, cooked appearance)	30%
2	**Packaging** (label information, environmental factors, food safety)	15%
3	**Market potential** (potential for commercial success, correct pricing and profile for target market, value [quality/price ratio])	15%
4	**Convenience** (for the end user and consumer)	15%
5	**Nutritional value** (appropriate for product and meal occasion)	10%
6	**Originality**	15%
	Total	100%

To participate, companies must be exhibitors of Seafood Expo North America/Seafood Processing North America and complete an online entry application for each product they wish to enter. All questions on the application must be answered, as incomplete forms will not be considered.

Entries are reviewed by a screening committee to ensure eligibility, with the best 10-12 products chosen as finalists.

Finalists are required to display their products in both raw and prepared states, along with showcasing their packaging. On the first day of the Expo, finalists present their products for tasting and judging in the exhibit hall. A panel of distinguished judges, comprising foodservice and retail buyers, executive chefs, marketing experts, nutritionists, and consumer advocates, evaluates the finalists based on provided samples and packaging.

Seafood Excellence Awards -Finalists

1. Acme Smoked Fish Lox in a Box by Acme

Acme Smoked Fish is debuting two new unique smoked fish products to kick off an exciting year ahead full of product innovation. Sesame Crusted Smoked Yellowfin Tuna and two Lox in a Box Snack Kits combine Acme's creativity together with four generations of expertise from the family-owned fish smoker.

2. Marinated Wild Alaska Black Cod by Alaskan Leader Seafoods

Wild Caught Alaska Black Cod Portions with an authentic Japanese Miso Marinade. Combine the rich and natural miso pair with the savoury and velvety texture of Black Cod harvested from the deep waters of Alaska.

3. Smoked Eel Fillet by American Unagi

The smoked eel fillets are sold in four 4oz flash-frozen fillets for easy portioning. American Unagi sources exclusively from Maine's well-managed fishery and raises their eels in land-based aquaculture systems here in Maine. This eel is hot smoked using a traditional European recipe of oak and alder wood. The high natural fat content of the eels, paired with a salt brine and rich smoke flavor, creates a savory, delicate and versatile product.

4. Sweet Heat Cornmeal Crunch North Atlantic Pollock by Channel Fish Processing

The Sweet Heat Cornmeal Crunch North Atlantic Pollock is sweet and spicy with a little smoke and a hearty corn crunch. In addition to delighting your senses, you can feel good about making a sustainable choice when you enjoy North Atlantic Pollock.

5. Sole with Shrimp & Snow Crab Stuffing by East Coast Seafood

Indulge in the exquisite flavors of East Coast Seafood's Sole with Shrimp & Snow Crab Stuffing, a culinary masterpiece that epitomizes the finest in seafood dining. Handcrafted with meticulous attention to detail and premium ingredients, this dish offers a harmonious blend of delicate sole fillets and succulent seafood stuffing, creating a truly unforgettable dining experience.

6. Culinary Aids: Seaweed, Ginger & Yuzu by Finesaler, LLC

Finesaler, LLC. proudly presents its exceptional culinary aids, featuring the harmonious blend of seaweed, ginger, and yuzu. With a commitment to quality and innovation, our products elevate culinary experiences to new heights, offering a symphony of flavors and textures that captivate the senses.

7. Spicy Breaded Jalapeño Shrimp by Handy Seafood

Crafted with passion and expertise, our innovative creation combines succulent shrimp with a fiery kick of jalapeño spice, creating a tantalizing culinary experience that's sure to delight seafood enthusiasts.

8. Butterflied Yellowtail Snapper by Netuno USA

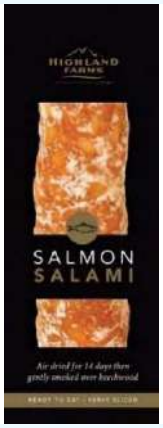
Netuno USA proudly presented its Butterflied Yellowtail Snapper, a culinary masterpiece that embodies the essence of quality seafood. Sourced from pristine waters and expertly prepared, our yellowtail snapper offers a delectable dining experience that is sure to delight the most discerning palates.

9. Echo Falls Smoked Wild Alaskan Sockeye Salmon Nuggets by Ocean Beauty Seafoods

Ocean Beauty Seafoods proudly introduced its Echo Falls Smoked Wild Alaskan Sockeye Salmon Nuggets, a gourmet delicacy that embodies the essence of premium seafood. Crafted with expertise and passion, our salmon nuggets offer a tantalizing fusion of rich flavor and superior quality, setting a new standard for culinary excellence.

10. Salmon Salami by Highland Farms Ltd - **Best New Retail Product award**

The Salmon salami made by UK-headquartered smoker and processor Highland Farms Ltd. has won the Best New Retail Product award at Seafood Expo North America in Boston. The product was selected from a group of 11 finalists during a live judging yesterday by a panel of seafood buyers and industry experts from the retail and foodservice industries. The salami comprises Atlantic salmon air-dried for 14 days and cured over fragrant beechwood, according to the company, and "embodies the perfect fusion of traditional craftsmanship and exceptional taste."



11. Premium Shrimp Sliders by social Kitchens Professionals/SK Food Brands: **Best New Foodservice Product award**

Premium Shrimp Sliders made by social Kitchens Professionals/SK Food Brands won the Best New Foodservice Product. This is made Solid chunks of shrimp seasoned with onion, red bell pepper and spices all packed into the perfect appetizing bite.

Winners of 2024

SEAFOOD Excellence

Winners of the Best New Retail Product and Best New Foodservice Product awards were announced at the demonstration theater in the exhibit hall on 10th March 2024, concluding the competition with recognition of exceptional seafood innovation.

This year, Highland Farms Ltd. was the winner in the Best New Retail Product category with their Salmon Salami, while Social Kitchens Professional/SK Foods Brands secured the top spot in the Best New Foodservice Product category with their Premium Shrimp Sliders.

Prepared by: Mr. Akshay P., Young Professional and Mr. S. Asok Kumar, Deputy Director (P&MP), MPEDA

India's seafood exports set a record quantity in 2023-24

During the financial year 2023-24, India exported an all-time high volume 17,81,602 MT of seafood worth US$ 7.38 billion and ₹ 60,523.89 Crore. The USA and China are the major importers of Indian seafood. Frozen shrimp continued to be the major export item. Export summary is given in Table 1.

Table 1: Export Performance During 2023-24 compared to 2022-23

Export Details	2023-24	2022-23	Change %
Quantity in Tons	17,81,602	17,35,286	2.67
Value ₹ in Crores	60,523.89	63,969.14	-5.39
US$ in Million	7,381.89	8,094.31	-8.80
Unit Value (US$/Kg)	4.14	4.66	-11.17

Despite facing various challenges, including sluggish consumer demand in major export destinations due to inflation in the USA, EU, and UK markets and the issues with the Red Sea route, the seafood sector performed considerably well during 2023-24. The exports increased by 2.67% in quantity during the year. However, there is a decline in value by 5.39% in ₹ terms and by 8.80% in US$ terms. The export performance of marine products since 2012-13 is given in Fig. 1.

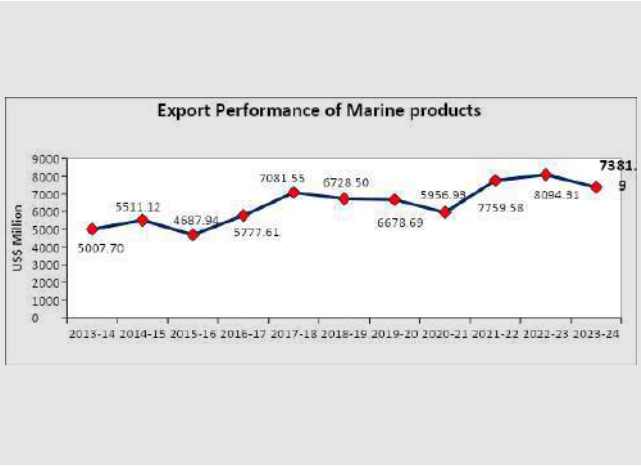


Fig. 1: Export performance of marine products

Aquaculture sector has a high percentage share in value terms as evident from the figures in Table 2. The aquaculture sector has contributed 62% of exported items in terms of US$ and 38% in terms of quantity in 2023-24. Capture fisheries contributed 62% in terms of quantity and 38% in terms of US$ value.

The unit value of aquaculture products exported declined by 11.66% during the year, which is one of the major reasons for the decline in export earnings in value terms in comparison with the last year.

Table 2: Export contribution of aquaculture and capture fisheries

	Aquaculture (%)		Capture fisheries (%)	
Year	2022-23	2023-24	2022-23	2023-24
Qty	38	38	62	62
Value in ₹	63	62	37	38
Value US$	63	62	37	38
Unit Value (US$/Kg)	7.72	6.82	2.79	2.52

Major Item - wise exports details

Frozen shrimp continued to be the major item of export in terms of quantity and value, accounting for a share of 40.19% in quantity and 66.12% of the total US$ earnings. Frozen shrimp exports during the period increased by 0.69% in quantity terms from 7,11,099 MT to 7,16,004 MT. However, frozen shrimp exports declined in terms of ₹, US$ and unit value by 7.24%, 10.95% and 11.56%, respectively. In value US$ terms, exports declined from US$ 5481.63 million to US$ 4881.27 million. The unit value of frozen shrimp declined by 11.56% from US$ 7.71 to US$ 6.82. The sluggish consumer demand, inflation at USA, EU and UK markets and competitive rates due to oversupply of shrimp from competitor countries like Ecuador, were the key reasons for the decline.

The export of frozen shrimp during 2023-24 was 7,16,004 MT worth US$ 4,881.27 million. USA is the single largest importer (2,97,571 MT) of frozen shrimp from India followed by China (1,48,483 MT), European Union (89,697 MT), Southeast Asia (52,254 MT), Japan (35,906 MT) Middle East (28,571 MT), and Other Countries (63,521 MT).

The export of vannamei shrimp in 2023-24 increased by 0.33% by quantity from 6,23,432 MT to 6,25,475 MT. However, it declined in ₹ terms by 7.74% and 11.56% in US$ terms (from US$ 4,809.99 million to US$ 4253.86 million). Out of the total vannamei shrimp exports, about 53.52% was exported to USA followed by 15.78% to China, 9.01% to European Union, 5.81 % to Southeast Asia, 3.41 % to Japan and 2.90% to Middle East, and 9.57% to other countries, in US$ value terms.

Black tiger shrimp exports increased by 24.91%, 11.33%, 8.28% in terms of quantity, ₹ value, and US$ terms (from US$ 321.23 million to US$ 347.84 million) respectively.

Out of the total Black Tiger (BT) shrimp exports, in US$ value terms, about 28.43% was exported to China followed by 18.21% to the USA, 18.06% to the EU, 13.12% to Japan, 8.27% to the Middle East, 6.45 % to Southeast Asia, and 7.46 % to other countries. BT shrimp exports to China (including Hong Kong) have shown a maximum growth, which is 342.48%, 254.78% and 247.49% in quantity, ₹ and US$ terms (from US$ 28.46 million to US$ 98.90 million) respectively.

Scampi exports have shown a positive export trend by 6.42%, 23.22%, 18.96%, in terms of quantity, ₹, and US$ terms (from US$ 21.16 million to US$ 25.17 million) respectively. The Unit value of scampi increased by 11.79% from US$ 9.63 to US$ 10.77.

Frozen Fish exports are at the 2nd largest position by quantity and value, accounting for a share of 21.42% by quantity and 9.09% by US$ earnings. This year the export of frozen fish has increased by 3.54% and 0.12% in quantity and ₹ terms respectively but declined in US$ value terms by 2.31% from US$ 687.05 million to US$ 671.17 million.

Fish and Shrimp - Meal and Feed- non-edible dried items group exports are at the 3rd largest position by quantity (15.89 %share) and value US$ (6.08 %share), has shown a positive export growth of 15.99%, 34.07%, and 31.52% in terms of quantity, value ₹ and US$ earnings (from US$ 341.53 million to US$ 449.17 million) respectively. Unit value realization of these item went up by 13.38% from US$ 1.40 to US$ 1.59.

Frozen squid exports are at the 4th largest position by value US$ (5.06 %share) and 5th largest position by quantity (5.25 %share), has shown a positive export trend of 11.52% in terms of quantity however in Value ₹ and US$ terms it declined by 14.81% and 17.86% (from US$ 454.61 million to US$ 373.40 million) respectively. The unit value of frozen squid declined by 26.35% from US$ 5.42 to US$ 3.99.

Surimi and surimi analogue products exports are at the 5th largest position by value US$ (3.99 %share) and 4th largest position by quantity (7.60 %share), has shown a positive export trend of 4.12% in quantity terms though value ₹ and US$ shown a decline by 6.13% and 9.19% (from US$ 324.24 million to US$ 294.43 million) respectively. Unit value of these products has declined by 12.79% from US$ 2.49 to US$ 2.18.

Frozen cuttlefish exports are at the 6th largest position by value US$ (3.72 %share) and quantity (3.05 %share). The exports of frozen cuttlefish have shown a decline of 1.10% and 7.06% in quantity and US$ terms (from US$ 295.49 million to US$ 274.62 million) respectively. Unit value realization has also declined by 6.03% from US$ 5.38 to US$ 5.06.

Frozen shrimp, frozen fish, fish meal & fish feed, frozen squid, surimi & analogue products and frozen cuttlefish (six groups) contribute 94.07% of exports in US$ terms.

Chilled items, exports are at the 7th position by value US$ (1.14 %share) and quantity (2.02 %share), have shown an increase of 47.06%, 11.50% and 8.66% in terms of quantity, value ₹ and US$ terms (from US$ 77.17 million to US$ 83.85 million), respectively.

Frozen Octopus, exports are at the 8th position by value US$ (0.84 %share) and 9th position by quantity (0.90 %share), has shown a decline of 29.51% and 32.23% by quantity and value US$ (from US$ 91.74 million to US$ 62.17 million) respectively.

Fish oil exports are at the 9th position by value US$ (0.79% share) and 10th position by quantity (0.80% share), has shown a decline of 65.03% and 49.58% by quantity and value US$ (from US$ 116.04 million to US$ 58.51 million) respectively. However, unit value realization has increased by 44.19% from US$ 2.84 to US$ 4.10.

Live items exports are at the 10th position by value US$ (0.66% share) and at the 11th position by quantity (0.43% share), and have shown a negative export trend in terms of quantity and value.

Navigating new horizons: MPEDA trade delegation to Hong Kong

Seafood market report on Hong Kong

Hong Kong is among the top 20 markets of Indian seafood and ranked 18th with a 0.82 % share of total seafood exports from India. During 2023-24, India exported 5,852 MT of seafood worth USD 60.52 million (₹ 496.25 Cr.) to Hong Kong.

During 2019-20 to 2023-24, the exports to Hong Kong grew 26% in terms of quantity. But the export realisation in terms The decline can be attributed to the reduction in the exports of all items except frozen shrimp, which has increased 173% in terms of quantity and 132% in terms of US$. The major reason for decline in export value is the decline in the export of dried fish maws, which has high unit value and a major component of dried items exported to Hong Kong. Item-wise exports of marine products from 2019-20 to 2023-24 are given in Table 1.

Table 1: India's exports of marine products to Hong Kong (Source: MPEDA)

ITEM		2019-20	2020-21	2021-22	2022-23	2023-24
FROZEN SHRIMP	Q:	1487	1416	2434	3754	4055
	V:	85.41	79.87	145.90	225.98	232.36
	$:	12.20	10.86	19.82	28.31	28.35
FROZEN FISH	Q:	562	984	219	49	350
	V:	52.41	74.40	11.54	1.59	37.54
	$:	7.46	10.13	1.57	0.20	4.56
FR CUTTLE FISH	Q:	688	501	285	299	306
	V:	25.29	18.00	11.11	14.65	18.61
	$:	3.58	2.45	1.52	1.85	2.27
FR SQUID	Q:	29	34	0	0	0
	V:	0.76	1.21	0.00	0.00	0.00
	$:	0.11	0.16	0.00	0.00	0.00
DRIED ITEM	Q:	145	262	864	170	150
	V:	208.83	300.15	258.24	185.35	132.20
	$:	29.88	40.87	35.04	23.44	16.11
LIVE ITEMS	Q:	352	643	562	307	253
	V:	20.82	33.77	23.84	19.09	14.98
	$:	2.98	4.63	3.24	2.39	1.83
CHILLED ITEMS	Q:	368	460	305	419	319
	V:	23.49	32.40	21.79	28.82	25.16
	$:	3.36	4.43	2.96	3.61	3.07
OTHERS	Q:	494	367	400	398	418
	V:	24.67	18.14	29.26	23.68	35.40
	$:	3.54	2.48	3.97	2.96	4.32

TOTAL	Q:	4126	4668	5068	5396	5852
	V:	441.68	557.95	501.68	499.17	496.25
	$:	63.12	76.01	68.11	62.75	60.52

Q: Quantity in M T, V: Value in ₹ Crore, $: US Dollar Million

Frozen shrimp is the major item exported to Hong Kong with a share of 69% in quantity and 47% in total USD earnings. Fish maws, which was once the major export item to Hong Kong, is now ranked second with 1.9% share in quantity, but having about 25% value share. Chilled pomfret is another major item exported to Hong Kong. Exports of major items to Hong Kong in terms of US$ earnings and quantity are illustrated in Fig. 1 & 2, respectively.

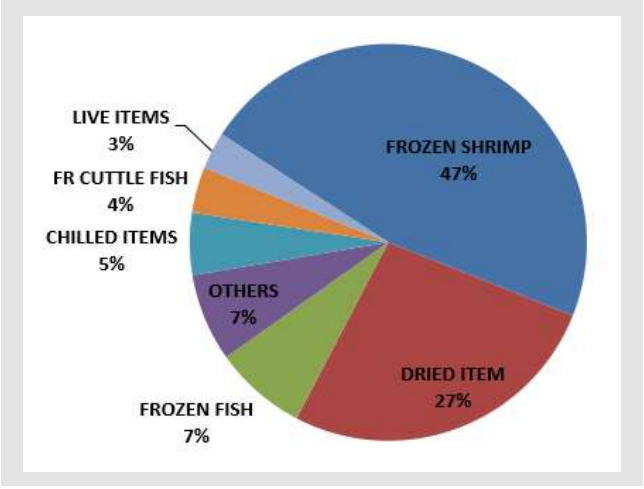


Fig.1: Item - wise export to Hong Kong in US$

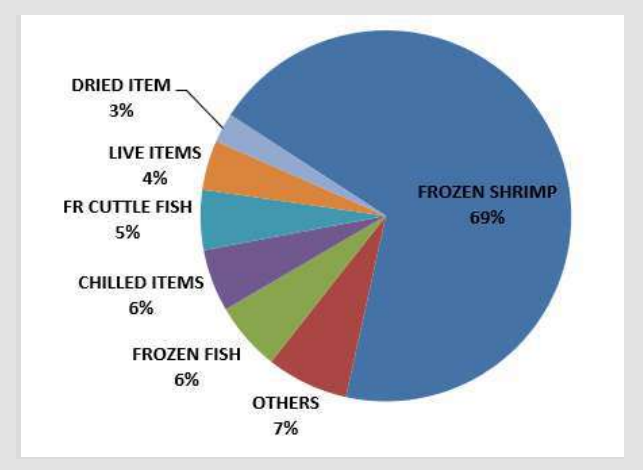


Fig. 2: Item - wise export to Hong Kong in quantity

Seafood import in Hong Kong

As per World Population Review, the per capita fish consumption of Hong Kong is 65.82 kg. Hong Kong imported seafood worth US$ 3,561.7 million during 2023. India contributed seafood worth US$ 61 million, which is only 1.7% of total imports (Fig. 3).

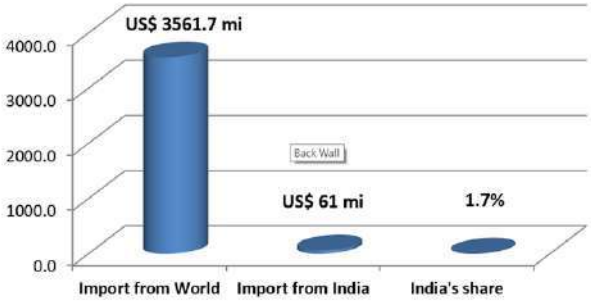


Fig. 3: Hong Kong's import and India's share (Trademap)

China is the major supplier of seafood under Chapter 03 to Hong Kong followed by Japan, Australia, Norway and Vietnam. Under Chapter 16, HS line 1604 & 1605, the major suppliers are China, Japan, Thailand, Taipei Chinese and Vietnam. Details are given in Table 2.

Countries	**CH-03 in 2023** (US$ mln)	**% share**
World	3,152.1	
China	988.1	31.3
Japan	424.3	13.5
Australia	165.5	5.3
Norway	161.7	5.1
Viet Nam	142.2	4.5
Others	1,270.3	40.3
India (14th Rank)	54.3	1.7
Countries	**1604 & 1605 in 2023 (US$ mln)**	**% share**
World	409.5	
China	195.7	47.8
Japan	41.9	10.2
Thailand	26.5	6.5
Taipei, Chinese	32.6	8.0
Viet Nam	23.5	5.7
Others	84.6	20.7

Table 2: Major suppliers of seafood to Hong Kong in 2023 (Trademap)

MARKETING NEWS

Trade delegation to Hong Kong

MPEDA in association with the Consulate General of India in Hong Kong organised a trade delegation to Hong Kong from 26th to 30th March 2024. The delegation consisted of registered exporters of marine products from India and was led by Dr. T. R. Gibinkumar, Deputy Director, MPEDA Regional Division, Mumbai. The main objectives of the delegation were to lead a team of registered exporters to conduct a Buyer Seller Meet (BSM) with importers in Hong Kong and to visit the various markets in Hong Kong, especially the markets for dry fish.

Participants of BSM along with CGI & MPEDA officials

Seafood exporters who joined the delegation

1. Mr. Biju G. Nair, General Manager, Goan Fresh Marine Exports Pvt. Ltd., Goa
2. Mr. Partha Ghose, Manager, Sanrhy Exim Private Limited, Kolkata, West Bengal
3. Mr. Mohsin, Director, KMC Trading Co. Ltd.,Mumbai, Maharashtra
4. Mr. Sangram Kumar Das, Director, Hari Marine Pvt. Ltd., Bhubaneswar, Odisha
5. Mr. P. G. Sasi, Managing Director, Sabri Food Products, Bhubaneswar, Odisha
6. Mr. MD Imamuddin, Managing Director, Sea Zone Overseas, Chennai, Tamil Nadu

Meetings at CGI, Hong Kong

Ms. Renjina Mary Varghese, Consul (Commerce) under the guidance of Ms. Satwant Khanalia, Consul General of CGI Hong Kong coordinated and gave all assistance to the delegation. On 26th March 2024, a meeting with Ms. Renjina Mary Varghese, Consul (Commerce) was conducted at the CGI office in United Centre, Hong Kong and chalked out the final action plan for BSM, visits to the Fish Marketing Office (FMO) and other market visits.

Visit to FMO, Aberdeen

On 27th March 2024, the delegation visited the Aberdeen fish market which is one of the fresh and live fish market cum landing centres in Hong Kong. The market complex also holds the office of the Fish Marketing Organisation (FMO). FMO is a statutory body of Hong Kong, administered by the Agriculture, Fisheries and Conservation Department facilitating fish wholesale and marketing services.

A meeting was conducted with the officials of FMO & Hong Kong Chamber of Seafood Merchants. After the meeting, the delegation visited the live and fresh fish market in the same premises. Delegates got the opportunity to see the various stalls in the market and how the fish are kept in live and chilled conditions for wholesale and retail. The landing operations of fishing boats in the nearby jetty were also observed by the delegates. Aberdeen is the only fishing port in the Southern District of Hong Kong and over one-third of the fish caught in Hong Kong are landed in Aberdeen port. Fishing vessels were 15 to 20 m in length and were made of steel & wood. The vessels have specific fish holds to keep the fish alive by keeping them in netted cages.

The Fish Marketing Organization (FMO) is a self-financing, non-profit organization established under the Marine Fish (Marketing) Ordinance (Chapter 291). It was originally established in 1945 to assist fishermen in resuming production and to provide marine fish wholesale and marketing services. FMO works to develop fisheries and improve the social and economic conditions of fishers. The office is headed by the Director of Agriculture, Fisheries and Conservation. The FMO operates 7 fish wholesale markets in Hong Kong viz., Aberdeen, Shau Kei Wan, Kwun Tong, Cheung Sha Wan, Castle Peak, Tai Po and Sai Kung.

FMO serves the local fishing industry and fisheries trading sector with professionalism to secure the marketing of marine fish. FMO also maintains a reliable and steady supply of marine fish to the public and supports the development of local fisheries.

Buyer Seller Meet

A buyer seller meet was arranged in Hotel Conrad in Hong Kong. Ms. Renjina Mary Varghese, Consul (Commerce) and Mr. Himanshu Gupta, Consul (Press, Information & Culture) & Head of Chancery were present. The Consul (Commerce) gave introductory remarks followed by the screening of recorded video messages of Ms. Satwant Khanalia, Consul General and Mr. D. V. Swamy, Chairman MPEDA. Dr. T. R. Gibinkumar briefed the activities of MPEDA and about the fishery resources. Eleven buyers participated in the meeting. The introductory meeting was followed by lunch consisting of seafood dishes prepared with Indian seafood. Mackerel fish Goan Se and Prawns masala were served to the participants.

Post-lunch BSM was conducted separately for frozen products and dried products. The list of importers who participated in BSM and trade enquiries received are listed in the trade enquiry section of this newsletter.

Visit to Sheung Wan dry fish market

The visit to Sheung Wan was arranged to see the dry fish market in that area. The delegation visited various dry fish retail / wholesale outlets and observed the display of various dried fishery products. Many items which are banned for export from India such as dried syngnathids, sea cucumbers, and shark fin were found in the display. The dry fish exporters in the delegation had discussions with shop owners and examined the samples. The shop owners informed us that the majority of fish maws are coming from Brazil and Uganda (Nile perch). Indian fish maws are also having very good demand in Hong Kong.

Des Voeux Road West, Wing Lok and Ko Shing Streets in the Sheung Wan area are known as Dried Seafood Street and Tonic Food Street of Hong Kong. A section of Des Voeux Road West is packed with shops selling dried seafood. The origins of the trade in this area go back many decades. All dried items such as Fish maws, shark fins, sea cucumbers, seahorses, salted fish, sausage, scallops, mushrooms and herbs are kept on display, catering to the demands of local households, especially around Chinese New Year. Nearby on Wing Lok and Ko Shing streets, we can find stores that stock Ginseng and Bird's Nest, both of which are believed to be beneficial to health.

Visit to Le Yue Mun fishing village

From Sheung Wan, the delegation proceeded to Le Yue Mun to visit the fish market and restaurants there. Le Yue Mun and the restaurants there are favourite destinations for people preferring unique seafood in traditional style. Restaurants are arranged on one-side and seafood stalls are established on the other side of the covered pathway. Delegates observed the seafood varieties available in the stalls and most of them are also available in Indian waters.

The villages of Lei Yue Mun are some of Hong Kong's oldest settlements and a favourite stop for seafood lovers especially during the Mid-Autumn Festival also known as the Moon Festival or Mooncake Festival. The place is near the Sam Ka Tsuen typhoon shelter where fishing boats are moored. From there, a pedestrian promenade takes the visitor into a covered arcade lined by tanks of live sea creatures including fishes, crabs, lobsters, shrimps, bivalves, molluscs etc. Visitors can choose the live seafood from the tanks in the array of restaurants and they will prepare it in classic Cantonese fashion. Among the restaurants, Gateway Cuisine, Happy Seafood Restaurant and Lung Tang Restaurant are the favourites.

Visit to supermarkets

The team also visited several supermarkets in Hong Kong. Visited the supermarket for fish products at Festival Walk Shopping Centre, Kowloon Tong and at Elements Shopping Centre at Union Square, West Kowloon. Elements is the largest organic food supermarket in Hong Kong.

Most supermarkets have dedicated areas/floors for seafood where separate sections are provided for live, chilled, dried, frozen, ready-to-eat and ready-to-cook seafood products. Live kitchens are also found in these areas for cooking breaded products and for preparing sushi products. In addition, factory-made sushi products are also available. Shop attendants and supervisors informed that the majority of live and chilled fish are coming from China mainland and Southeast Asian countries. Frozen shrimp products mainly from Indonesia, Viet Nam, and India were found. Certified products such as MSC and ASC were found in supermarkets, but there was no segregation of such products.

Concluding meeting with CGI

The concluding meeting with Ms. Renjina Mary Varghese, Consul (Commerce) was held on 29th March 2024 at the office of CGI. Consul (Commerce), while expressing satisfaction in coordinating the delegation on short notice, suggested doing a similar programme during the HKTDC Food Expo scheduled every year during August. The consul also requested to provide the digital brochures of all exporters interested in doing business with Hong Kong for circulation and for creating the network for future programmes.

Other visits

Additional visits were made to the seafood section in the Fusion & Taste Supermarkets inside the United Centre where the CGI office is also located. Also visited the Hong Kong Convention and Exhibition Centre at Wan Chai North, Hong Kong Island which is also within walking distance from the CGI office. Apart from supermarkets, well-organised markets are available across Hong Kong for vegetables, fruits, fish & meat. One such market at Wan Chai was also visited and observed the arrangements for fish stalls. Live and chilled fish were available on the display. The markets maintain excellent hygiene conditions with the well-set drainage and waste management system, making them very neat and tidy.

Thai buyers meet Indian exporters

The Thailand Week event held at Chennai's Express Avenue Mall from 8th to 10th March 2024 saw the active participation of M/s. Pegasus Food Company Limited, prominent producers and exporters of canned fish based in Thailand specializing in canned Tuna, Mackerel, and sardines, they cater to markets across North America, Europe, Asia, and Oceania.

Represented by Ms. Panadda Kanjana and Ms. Nung Artwichai, M/s. Pegasus Food Company Limited was on the lookout for sourcing tuna from India to enhance their canned fish processing operations in Thailand. The event provided a platform for fruitful interactions, between the Thailand importer and Indian exporters facilitated by MPEDA.

The company officials had business discussions with Indian seafood exporters, M/s. Peter and Paul Seafood Exports Pvt. Ltd., Chennai, and M/s. Britto Seafood Exports Pvt. Ltd. Deliberations primarily revolved around the availability and pricing of tuna loins and skipjack tuna, and both buyers and exporters expressed satisfaction with the outcomes, and acknowledged the business facilitation extended by MPEDA, signaling promising prospects for future collaborations.

Meeting with M/s. Peter and Paul Seafood Exports Pvt. Ltd.

Meeting with M/s. Britto Seafood Exports Pvt. Ltd.

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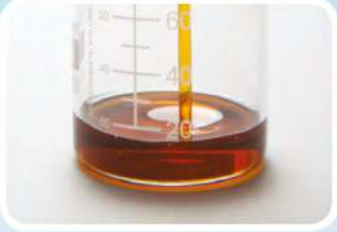
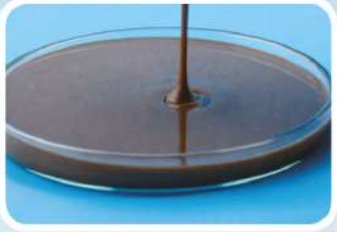

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Marine landings report January 2024

Dr. Afsal V.V. & Dr. Joice V. Thomas, MPEDA – NETFISH

MPEDA-NETFISH collects real-time data on marine landings from around 100 major fishing harbors and landing centers in India for supporting traceability and MPEDA's catch certification system. Regular tracking of marine landings is done through the Harbour Data Collectors stationed at selected locations. They collect information on incoming fishing vessels and approximate catch landed by these vessels, specific to each species. The collected data is uploaded in the MPEDA catch portal daily. This report presents an overview of the trends observed in marine landings during January 2024.

1. Observations on catch landings

In January 2024, data on marine catch landings was gathered from 85 fish landing sites scattered along the coastal states of India. The cumulative catch for the month amounted to 66,327.37 tons. The pelagic finfishes dominated the catch with a substantial 57% share, accounting for 38,086.97 tons. Demersal finfishes followed at 25%, contributing 16,552.71 tons to the overall catch. Crustaceans claimed a 9% share, representing 5,997.82 tons, while molluscs contributed 9% share, with 5,689.87 tons (refer Fig. 1).

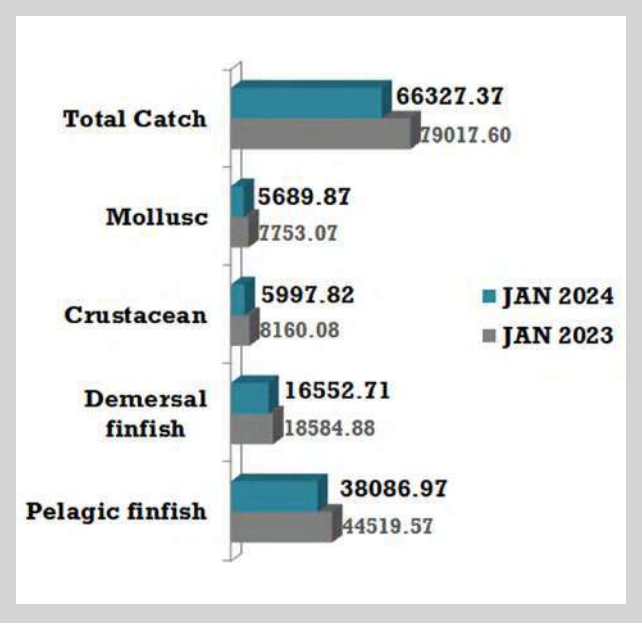

Fig.1: Catch composition of marine landings (in tons) in January 2024

The landings during the period comprised 242 species, encompassing both marine finfishes and shellfishes. The five dominant species of the month were *Rastrelliger kanagurta, Sardinella longiceps, Lepturacanthus savala, Nemipterus japonicus & Uroteuthis duvaucelii* (refer Table 1).

Sl. No.	Common name	Scientific name	Quantity (tons)
1	Indian mackerel	*Rastrelliger kanagurta*	11,317.00
2	Indian oil sardine	*Sardinella longiceps*	5,071.36
3	Ribbon fish	*Lepturacanthus savala*	5,059.53
4	Japanese threadfin bream	*Nemipterus japonicus*	3,889.37
5	Indian squid	*Uroteuthis duvaucelii*	2,273.70

Table 1: Top five species landed during January 2024

Analysis of the group-wise landing data showed that Mackerels, Ribbon fish, Sardines, Coastal Shrimps and Croakers were the dominant species landed in the month (refer Fig. 2). These top five fishery items accounted for 48% of the total catch. Other notable landed items included Threadfin breams, Squids and Tunas.

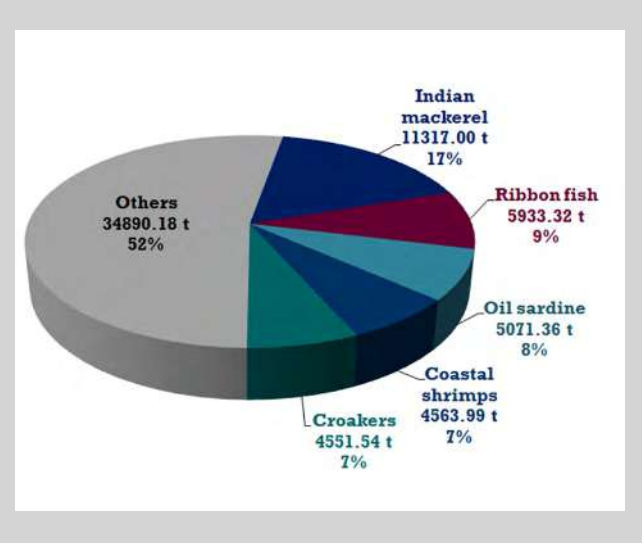

Fig. 2: Major five fishery items landed in January 2024

Mackerels, Ribbon fish and Sardines dominated the pelagic finfish landings, while Croakers, Threadfin breams and Catfishes were the major demersal catches. Coastal shrimps constituted over 76% of the total crustacean harvest, with *Karikkadi* shrimp (*Parapenaeopsis stylifera*) being the most abundant species, with a catch of 1,463.91 tons. Squid and Cuttlefish were the major molluscs landed during the month.

State-wise landings

The north-western states of Maharashtra and Gujarat recorded the highest marine fish landings in January 2024 (refer Fig. 3). Maharashtra led with 21,070.07 tons, accounting for 32% of the total catch, followed by Gujarat with 11,456.32 tons (17%). The south-western states of Karnataka and Kerala also made significant contributions to the total catch, with 12% and 11% share, respectively. Together, the western coastal states accounted for 76% of the total marine fish landings. Among the eastern coastal states, Tamil Nadu and West Bengal were in the lead, each contributing around 9% and 8% respectively to the total catch and Odisha and Andhra Pradesh had contributed 4% and 3% to the total catch.

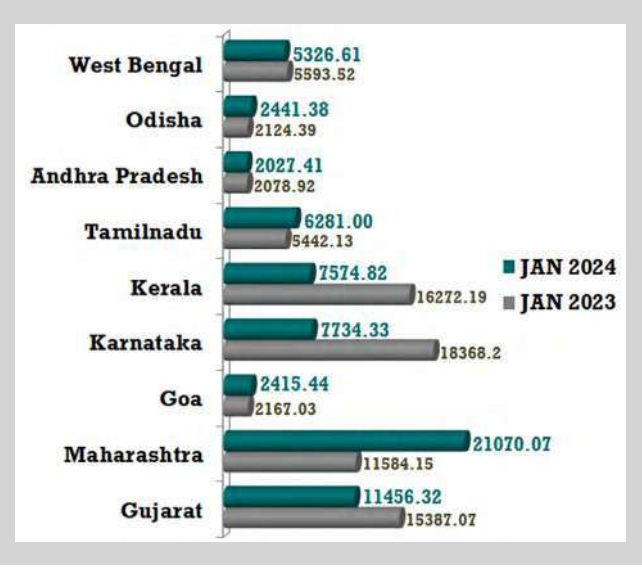

Fig.3: State-wise marine landings (in tons) in January 2024

Harbour-wise landings

Ratnagiri-Mirkarwada harbour in Maharashtra recorded the highest fish landings in January 2024 among the 85 selected fish landing sites. Mirkarwada harbour witnessed high landing of Mackerels and Sardines during the month with a share of 5,897.30 tons and 2,970.00 tons respectively, to the total landing of 10,586.20 tons. Table 2 lists the top ten harbours in terms of total catch quantity landed.

Sl. No.	Harbour	Quantity (tons)
1	Mirkarwada	10,586.20
2	New Ferry Wharf	3,568.80
3	Porbandar	3,198.54
4	Mangrol	3,197.30
5	Malpe	2,977.85
6	Munambam	2,697.30
7	Sakharinate	2,671.17
8	Veraval	2,627.41
9	Vanakbara	2,166.21
10	Sassoon Dock	2,102.15

Table 2: Top ten harbours based on catch landings

2. Observations on boat arrivals

The number of fishing vessel arrivals recorded from the 85 designated fish landing sites totalled 32,139. Kerala recorded the highest number of boat arrivals, with 6,638, accounting for 21% of the total. Gujarat, Tamil Nadu and Maharashtra were the next in line (refer Fig. 4). Considering the harbour-wise boat arrivals, the Mangrol and Porbandar harbours in Gujarat were in the top, with 1,808 and 1,544 boat arrivals, respectively.

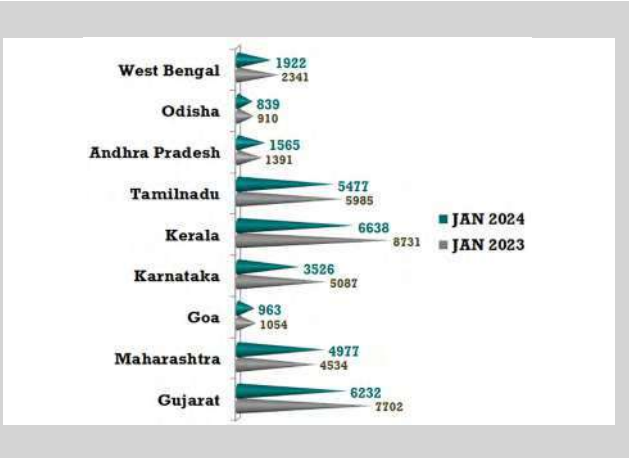

Fig.4: State-wise boat arrivals (nos.) in January 2024

Summary

During January 2024, marine landings and boat arrivals from the 85 major fish landing sites in India totalled to 66,327.37 tons and 32,139 vessels, respectively. A decrease of about 16,300 tons in catch landings and 1,193 vessels in boat arrivals was noted when compared to the previous month.

Pelagic finfish resources continued as the major contributor to the overall catch, with Indian mackerel (*Rastrelliger kanagurta*) turned out to be the most landed species of the month. Maharashtra remained in the top position in terms of catch landing and whereas Kerala attained the highest position in terms of number of boat arrivals.

Among the various landing sites, Mirkarwada harbor continued in the top position in terms of catch landings, while Mangrol harbor continued having the highest number of boat arrivals.

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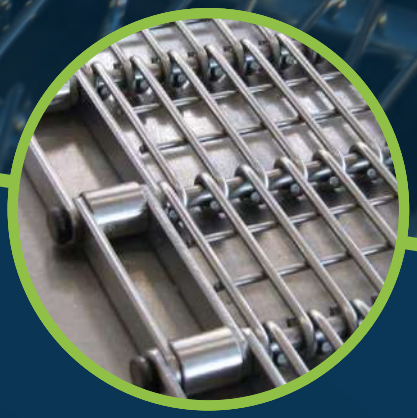

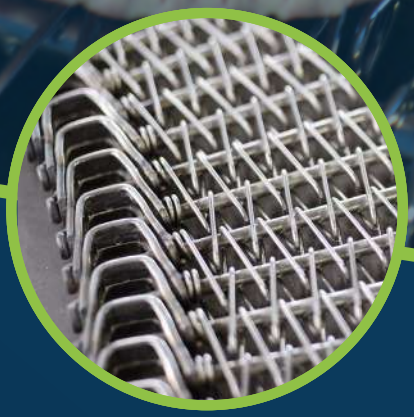

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Monthly outlook forecast report

Ritiesh Victor, Co-founder & Country Head – Myforexeye Fintech Pvt. Ltd.
Email-id: sales@myforexeye.com

USD INR

In January, the USDINR pair exhibited notable volatility, starting the month at a high of 83.32, experiencing a dip to a more than four- month low at 82.7775, but rebounded and concluded at 83.04. The local currency recorded a 0.2% increase, marking its best monthly rise since June 2023. This upward trajectory was influenced by Bloomberg Index Services' proposal to incorporate Indian bonds under the fully accessible route (FAR) in its emerging market local currency index. The potential inclusion hints at the prospect of increased foreign capital inflows. During its first FOMC monetary policy meeting of the year, Fed Governor Powell maintained the interest rate and adopted a hawkish stance. Powell expressed that rates had peaked and anticipated a downward movement in the coming months, also emphasizing that rate cuts would only happen once there's more confidence in decisively addressing inflation concerns.

The Fed Rate Monitor has adjusted the probability of a rate cut in March from 85% a month ago to 38%, reflecting the resilience in the US market showcased by strong data. Consequently, the Dollar strengthened, concluding the month at 103.51 showcasing its best performance since September. India's forex reserves increased $591 million to $616.733 billion for the week ended January 26. Looking ahead, the rupee may experience further appreciation in the coming months, influenced by decreasing oil prices and declining US Treasury yields.

Entering the new year, the Rupee exhibited signs of recovery as the USDINR descended to a 4-month low of 82.7775 on January 15, 2023. The volatility in the pair continues to remain low as out of 21 trading sessions, 18 sessions had less than 15 paisa range. After testing the 4-month low, the rupee again weakened to become range bound from 83.10-83.15 but ended the month slightly stronger at 83.04.

Analysis of the daily candlestick chart reveals a descending channel formation, indicating lower lows and lower highs, suggesting potential for further Rupee recovery. Momentum indicators have stabilized as flat horizontal lines around neutral territory. The 100- day EMA coincides with the January month onshore close at 83.04, while the 200-day EMA aligns closely with the recent low of 82.77, serving as the next key support level.

With expectations of a stronger Rupee in the coming months, importers are advised to hedge as the pair trades below the 83 level. Unhedged exporters should consider initiating hedges at levels of 83.05 and above. The recommended hedging approach involves a combination of options and forwards.

EUR USD

In January, the EURUSD experienced a downtrend, initiating trading on January 2, 2024, reaching a monthly high of 1.1038 and consistently declining thereafter. Influential economic indicators such as CPI and PMI of Germany and Eurozone, German GDP, and the ECB's decision to maintain a 4.5% interest rate played a significant role. Eurozone's CPI for January, at 2.9%, slightly missed the expected 3% but remained above the 2% target, reducing expectation of imminent rate cuts. The strength of the US dollar during the month, fueled by expectations that the Federal Reserve would not cut rates in March, exerted continuous downward pressure on the EURUSD.

Looking ahead, the future outlook depends on the upcoming US labor data release this month. A positive outcome coupled with further signs of economic weakening in Europe could strengthen the dollar, potentially placing additional pressure on the EURUSD pair. Notably, the US economy appears more robust than its European counterpart, with signs of resilience and a limited risk of recession, while the EU economy continues to grapple with contraction.

In the early days of the month, EURUSD initiated trading at a monthly high of 1.1038. Initially, the bulls exhibited confidence, likely influenced by a return from an extended holiday in the new year. However, the daily candlestick chart paints a comprehensive picture favoring bearish sentiment

over bullish strength. On the weekly chart, the pair breached the 50 Week-EMA (1.1008) in the initial days of the month, leading to a corrective move with support found at the 200 Week-EMA (1.0800). The sustainability of the pair above this level could maintain a range- bound movement between 1.10 and 1.08. Presently, the pair is trading above 1.08, but a breach below the 200 Week-EMA may expose a continuation of the downtrend towards 1.0750 (S1) and further towards 1.0635 (S2).

The Relative Strength Index (RSI) signals a robust buy indication at 59, indicating potential upward momentum. The MACD indicator, closely hovering around 0, reinforces the RSI, with the MACD line (blue) showing signs of intersecting the signal line from below—an additional buy signal. Consequently, expectations align with the pair consolidating above 1.0750.

GBP USD

It was a negative month for sterling, as the pair started the year on a negative note by opening at 1.2729 level. The currency remained in pressure because of the gain in the dollar index. The dollar was buoyed by the decrease in the probability of March rate cut, which fell below 35% from 88%, in the beginning of the year 2024. Sterling has remained strong against the US dollar within the G10 group this year, buoyed by Britain's resilient economic performance and signs of persistent inflation compared to other regions. The preliminary S&P Global/CIPS UK Composite PMI for January revealed the UK economy started the year on a robust note, marking a seven-month high. These factors prevented the downfall of the pound against the stronger DXY. The BoE is expected to maintain its current interest rates in its upcoming policy announcement, with markets anticipating the first rate cut by June. The expectations for BoE rate cuts in 2024 have decreased to approximately 100 basis points, contrasting sharply with predictions before December's inflation data, which is positive for sterling, preventing further decline against the dollar.

The GBPUSD pair traded sideways throughout the month. The pair traded in a monthly range of 1.2785-1.2596. The pair consistently traded above the 50-week EMA throughout the month. The 1.2600 level can be seen as a strong support region for the pair. The consistent attempt of the pair above the 200- week average can be seen, but the pair could not sustain the gains for longer and ended the month below the 200-week average. This level of 1.2730(200-week EMA) acts as a short- term resistance for the pair. As per the MACD Indicator, the pair is still bullish and the upward trend is predicted as the MACD line is well above the signal line and above the zero level. The next resistance can be seen at the psychological level of 1.2850, protecting the upside of the pair.

JPY USD

The dollar-yen originally pulled back little throughout the trading session, but it now appears that we are simply grinding away sideways to work off some froth. The USDJPY fell by 0.44% on the last Monday of the month. The USDJPY concluded the month at 146.86, reversing its 0.33% advance from last Friday. The data from the United States (US) was respectable, but it is not expected to shift the needle among US Federal Reserve officials in tomorrow's decision. However, with the FOMC meeting and statement, as well as the press conference, scheduled for Thursday, it is important to pay attention to whether the Federal Reserve will cut rates in 2024.The unemployment rate declined to 2.4% in December from 2.5%, indicating that the labor market is cooling, which may hinder the Bank of Japan (BoJ) from finishing its negative interest rate cycle. Following last week's report, Japan's inflation fell below the BoJ's 2% target, rising by 1.6% year on year, down from 1.9%. It is totally up to you whether or not to short the yen against the US dollar or other currencies; however, the overall directionality of yen-denominated pairs will be higher, and this will be no exception. Expect a lot of volatility over the next month, but even if we do fall down from here, it will only be a good buying opportunity based on value.

The trading month for USDJPY commenced at 140.98. The pair easily broke the 50 Week-EMA to maintain levels above 141 and encountered support in the vicinity of the 50-Week EMA (142.25). Notably, the weekly candlestick chart signals a breakthrough above the 50 EMA (yellow line), suggesting a potential upward movement towards the 150 level. Key support and resistance levels are identified at the wicks of weekly candlesticks formed during the yen's ascent to 140 in November. Throughout the month, the yen experienced pressure due to the surge in US bond yields, resulting in USDJPY reaching monthly high of 148.69. If we exceed not only the month's last trading week high but also the high, our target shifts to the 149.94-yen level, with a subsequent potential rise to the 151.52-yen level. Any retracement at this

point consistently attracts buyers seeking to capitalize on perceived value. The 145-yen level is considered a significant support level in this market. Furthermore, momentum indicators indicate a sustained trend, with the pair displaying a constricted range between 146-149, a sentiment further supported by the candlestick formation.

World global market outlook

Global equity markets started the year on a high note (+0.2), driven entirely by good performance in developed markets. The US dollar recovered its previous sell-off, deducting roughly 70 basis points from local returns. The month began with expectations that the Federal Reserve would signal an upcoming interest rate drop in the first quarter as inflation data improved. At the January 31 meeting, Chairman Jerome Powell pushed back against expectations of a March rate cut, but acknowledged that employment and inflation were "moving into a better balance." Markets fell sharply after his comments, with the US recording its worst single- day return since September 2023, wiping out January's gains.

The earnings season is in full gear, with many corporations anticipated to post strong earnings after several quarters of decline. Global equities funds saw significant inflows in the final week of January, fueled by positive U.S. economic growth figures and inflation readings indicating a prolonged easing of price pressures. Global equities funds saw a net $7.43 billion in inflows this week, contrasting with losses in the preceding five weeks. Global high yield funds got $4.25 billion, marking the seventh consecutive week of net purchases.

The markets are expected to have a volatile month ahead, as influenced by the stance of major global central banks. U.S. markets might face some turbulence in the short term, especially as investors gauge the Federal Reserve's approach to interest rates after the unexpected decision against a March cut. The U.S. dollar positioning is expected to remain strong, potentially exerting pressure on emerging markets.

Skilling Lakshadweep fishers

MPEDA-NETFISH, in collaboration with CIFNET Kochi and the Directorate of Fisheries, Lakshadweep Administration, successfully conducted skill development training programs for fishers across Lakshadweep islands. This initiative aimed to empower fishers with valuable knowledge and techniques to improve their fishing practices and livelihoods. A total of 360 fishers from Lakshadweep benefitted from the program, which was held between 19th and 28th February 2024 across six islands: Kavaratti, Agatti, Amini, Kadmat, Kiltan and Chetlat. The CIFNET team, comprising faculty members, supporting staff, and crew members onboard M.V. Prashikshani, travelled from Kochi to Lakshadweep to deliver the training sessions. Mr. Santhosh N. K., State Coordinator NETFISH coordinated with CIFNET and Lakshadweep officials in executing the programs effectively. The training programs had effectively combined theory sessions with practical demonstrations.

Focus areas

The training programs covered three crucial areas:

1. Longline and Tuna Handling Onboard Fishing Vessels: This program equipped participants with expertise in tuna longline fishing techniques, onboard handling practices for sashimi grade tuna, and preservation methods. Tuna longline fishing training was done onboard M.V. Prashikshani, the vessel of CIFNET.

2. Navigation & Marine Communication Equipment Onboard Fishing Vessels: This course focused on navigational aspects, communication equipment usage, lights, shapes, and signals for fishing vessels.

3. Defect Rectification and Maintenance of Boat Engine: This training provided fishers with the knowledge and skills to troubleshoot and maintain inboard and outboard engines, addressing a critical need on the islands.

Inaugural Session

The inaugural ceremony for the program was held on 19th February 2024, at the Fisheries Conference Hall in Kavaratti. Mr. Santosh Kumar Reddy V., IFS, Secretary (Fisheries, Agriculture Science and Technology) of Lakshadweep, graced the occasion as the chief guest. During the ceremony, study materials in Malayalam for the three training courses were also released. A total of 45 fishers from Kavaratti attended the function.

Each island program commenced with an inauguration ceremony graced by dignitaries from Lakshadweep Islands and CIFNET. These ceremonies served to highlight the importance of skill development for fishers and the collaborative efforts behind the initiative. Certificates were issued to the participants on successful completion of the training program.

Inauguration of skill development programme

Kavaratti and Kadmat Islands

Training on "Longline and Tuna Handling Onboard Fishing Vessels" was conducted from 19th to 21st February 2024 at Kavaratti and 24th to 26th February 2024 at Kadmat by a team of experts from CIFNET composed of Dr. K. B. Bijumon, Senior Instructor (FT), Dr. Vipin P. M., Instructor (FT), Mr. Rakesh, Bousan and Mr. Irshad Khan, Net maker. The sessions covered theoretical aspects like tuna resources, longline fishing operations and onboard handling practices. Additionally, practical demonstrations onboard M.V. Prashikshani was conducted. A total of 45 and 75 numbers of fishers attended the training programs at Kavaratti and Kadmat, respectively. Theory classes covered various subjects such as Tuna resources, Structure and fabrication of monofilament tuna long line, longline fishing operation, deck layout of longliner, onboard handling for Sashimi Grade Tuna, onboard preservation method, use of electronic equipment in fishing and Navigation, lights, shapes and signals for fishing vessel.

Participants of the training at Kavaratti

Tuna training at Kavaratti

Practical training on tuna processing at Kavaratti

Certificate distribution at Kavaratti

Training at Kadmat

Class on navigation equipment

Participants with certificates at Kadmat

Demo on tuna longlining onboard M. V. Prashikshani

Agatti and Kiltan Islands

The 3 days' Skill development training programme on Navigation and Marine Communication Equipment Onboard Fishing Vessels were conducted in Agatti & Kiltan Islands from 20th to 22nd February 2024 and from 25th to 27th February 2024, respectively. Mr. M. N. Girish, Senior Instructor (Electronics), Mr. S. Shaji, Instructor (S & N) and Mr. Mohammed Aneesurahman, Net maker handled the training classes. A total of 60 Fishers from Agatti Island and 60 Fishers from Kiltan Island had attended the respective training sessions. The training equipped participants with the knowledge to operate navigational and communication equipment effectively, ensuring safe and efficient fishing operations.

Certificate distribution at Agatti

Amini and Chetlat Islands

The training program in these islands addressed "Defect Rectification and Maintenance of Boat Engine." The trainings were conducted from 21st to 23rd February 2024 and 26th to 28th February 2024, respectively. Mr. K. S. Vinod, Senior Instructor (ME), Mr. Sreekanth S. K., Instructor (ME) and Mr. Emmanuel Jackson, Fitter from CIFNET Kochi led the classes. In all, 60 fishers from Amini Island and 60 fishers from Chetlat Island attended the training. During the 3 days theory and practical sessions on the various types of defects, its causes and the trouble shooting methods of inboard and outboard Engines were covered. As per the request of fishers, the team inspected the defect of their OBMs and gave suggestions for troubleshooting. Additionally, the CIFNET team offered assistance to the fishers for future maintenance needs and spare parts acquisition. Also, an onboard training program on tuna long line fishing method was arranged in the CIFNET vessel.

Training at Amini

Training on boat engine at Amini

Distribution of certificate to the participants at Amini

Training at Chetlat

Participants of training program at Chetlat

Conclusion and Impact

The skill development training programs concluded on 28th February 2024. The training programs received positive feedback from participating fishers, who expressed their appreciation for the valuable knowledge and skills gained. The training successfully equipped 360 Lakshadweep fishers with valuable knowledge and techniques. This initiative is expected to enhance their fishing efficiency, improve catch quality, and ultimately contribute to their economic well-being. The success of the programs underscores the importance of collaborative efforts between government agencies and training institutions in empowering fish communities across India.

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Empowering Fisheries: MPEDA Mumbai and NETFISH host training programs on value addition and hygienic handling

MPEDA Regional Division, Mumbai and NETFISH Maharashtra North in association with Mangrove and Marine Biodiversity Conservation Foundation of Maharashtra (Mangrove Foundation) organized a series of hands-on capacity building training programmes on value added fish products preparation and hygienic handling. The programmes were conducted for the capacity building in rural fisher folk for livelihood generation. Lectures, demonstrations and hands-on training on the preparation of various value added products from fish and shellfish, its packaging and hygienic handling techniques were included in the training programme.

The mangroves and associated habitats of creeks and estuaries have great potential for providing alternative livelihood sources to the local communities and hence the Mangrove Foundation has initiated various sustainable livelihood activities such as mud-crab farming, oyster farming, fish cage culture, ornamental fish culture and mangrove ecotourism in various coastal villages of the State. 115 villages from Palghar, Thane, Raigad, Ratnagiri, Sindhudurg and Mumbai Suburban districts have been covered under the scheme.

During 2023-24, MPEDA-NETFISH has conducted 11 programmes at various locations in coastal Maharashtra with the funding from Mangrove Foundation.

Details of Training programmes:

Sl. No.	Date	Venue	District	Participants
1	27.04.2023	Surai Sarang Village	Thane	15
2	28.04.2023	Surai Sarang Village	Thane	19
3	03.11.2023	Mogharpada Village	Thane	10
4	13.12.2023	Karawale Village	Palghar	21
5	14.12.2023	Karawale Village	Palghar	12
6	21.12.2023	Rangaon Village	Palghar	33
7	22.12.2023	Naringi Village	Palghar	12
8	29.12.2023	Agwan Village	Palghar	25
9	03.01.2024	Chandigaon Village	Palghar	29
10	05.01.2024	Dandi-Pokharan Village	Palghar	29
11	17.01.2024	Shrivardhan	Palghar	44
Total				**240**

The programmes started with the inaugural function attended by officers from Mangrove Foundation and local panchayath. Presentations on MPEDA activities and value addition and hygienic handling were given. Training booklet, kitchen apron, kitchen caps, hand gloves, kitchen napkins, cutting boards, knives were distributed to each beneficiary. Dr. Girija Saurabh Behere, State Coordinator, NETFISH, Maharashtra (North) coordinated the programmes. Mr. Dhiraj Dhatkar, HDC, Uttan, Mr. Jitendra Kadam, HDC, Vasai and Mr. Nikhil Deo, HDC, Satpati gave necessary assistance to conduct the programmes.

Dr. Girija demonstrated and gave hands on training on the preparation of fish bread patties, *Acetes* (Jawla) chutney, prawn pickle, tuna fish pickle, fish soup powder, skewered shrimps, battered and breaded fish products namely, coated shrimp in butterfly style, fish balls, and squid rings. The objectives were to impart skill-based training to members

of various SHGs on fish processing, hygienic handling, presentation ability, shelf life improvement, and marketing opportunities. Feedback was collected through a structured questionnaire, and certificates were distributed to the trainees. During 2023-24, 240 individuals were trained in the preparation of value-added seafood products through 11 programs.











View of MPEDA officials and participants during the training programmes

Value added products prepared during the training programme

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Hands on training on preparation of value added cephalopod products

Gujarat is a major contributor to India's seafood exports, with squid, cuttlefish, and octopus being key players. Mostly the exporters from the region have primarily been focusing on shipping block frozen whole Cuttlefish and Squid to China. However, recent challenges in the Chinese market have highlighted the need to diversify export destinations for these cephalopods.

To ensure the long-term sustainability of Gujarat's seafood industry and the livelihoods of those involved, a shift towards value added products is crucial. This involves processing raw materials like whole Cuttlefish and Squid into consumer-ready formats like: Cuttlefish Whole Cleaned (CFWC), Cuttlefish Fillet (CFF), Cuttlefish Tentacle (CFTN), Squid Whole Cleaned (SQWC), Squid Tentacle (SQTN), Squid Ring (SQRG), Squid Tube (SQT), Butterfly Squid, Stuffed Squid, tray packs, skewer packs, Seafood mix etc. These value added products offer a higher unit value for the exporters and the convenience of ready-to-cook option to the consumers.

Recognizing this potential, the MPEDA-NETFISH conducted a hands-on training program in Porbandar, Gujarat with an aim to equip workers, managers, supervisors, and technologists with the skills needed to prepare value-added cephalopod products, showcase a variety of value added products and encourage wider adoption of value added processing among seafood exporters in Gujarat.

The two-days' hands-on training program was conducted from 6th to 7th March, 2024 at M/s. Navarang Sea Foods in Porbandar. The program, led by Mr. Jignesh Visavadia, State Coordinator of NETFISH, and had 30 participants. The training was supported by Mr. Shrimali Vinodkumar M., Deputy Director, MPEDA Sub Regional Division, Porbandar and Mr. Kishorkumar Vaniya, Assistant Director, MPEDA Regional Division, Veraval.

The success of this training program demonstrates a positive step towards diversifying Gujarat's seafood exports. By embracing value addition and exploring new markets, the industry can ensure its long-term sustainability and contribute to the economic well-being of those involved in the sector.

Workers being trained in pre-processing of cephalopods

Various products prepared from Cephalopods

Certificate distribution

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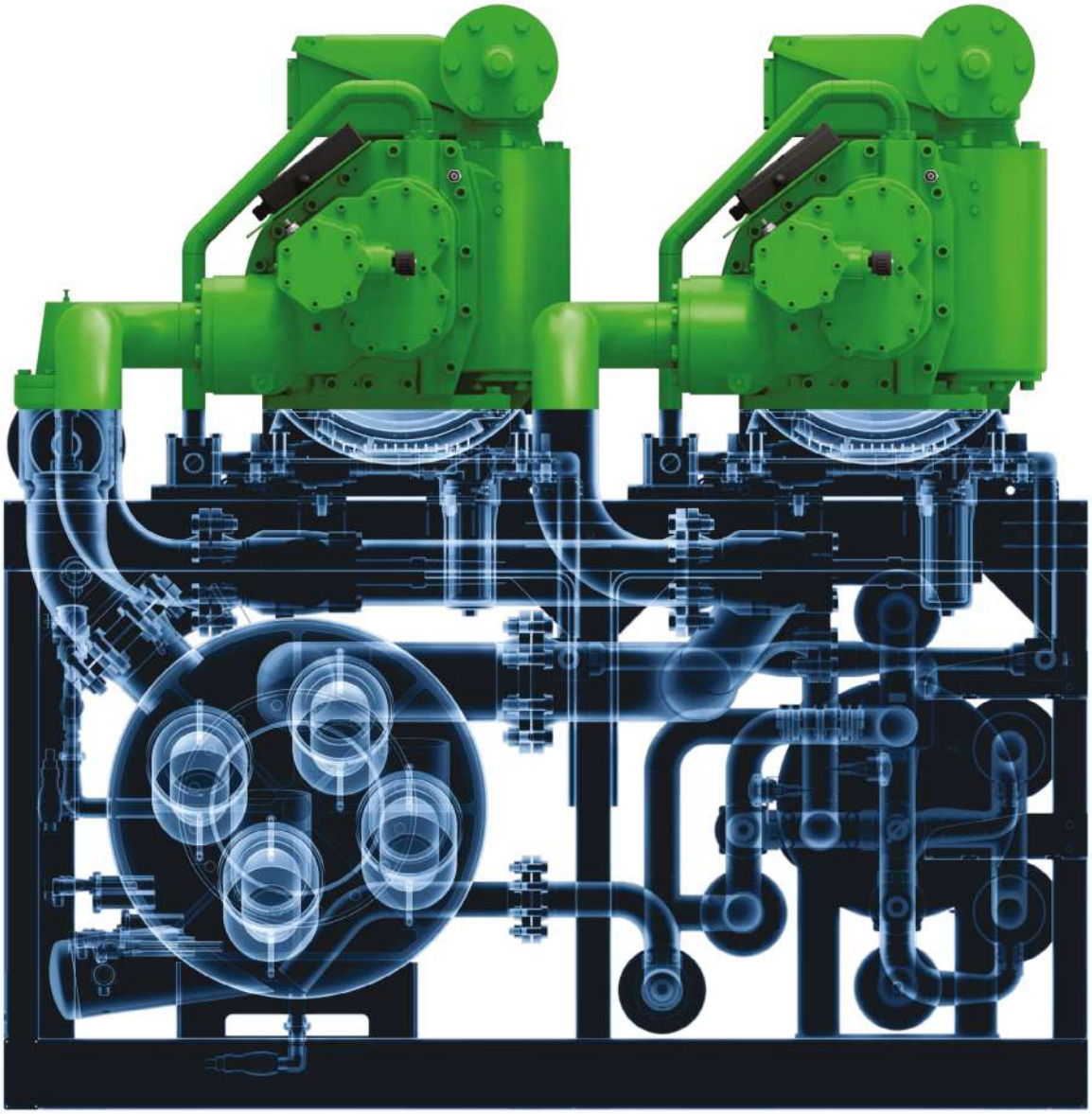

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Capacity building programme for SC and ST Fishers

Nashik district

MPEDA Regional Division, Mumbai conducted two capacity building programs for ST category farmers, workers, and fishers in Surgana, Nashik district, on 14th and 16th March 2024 at Surgana in Nashik district. The programs were inaugurated by Mr. Sanjay Chavan, President of Saptshrungimata Bahuuddeshiy Sevabhavi Sanstha (SBSS), Surgana, an NGO that aims to improve rural socioeconomic status through skill development and government schemes. Mr. Mangesh Gawde, Field Supervisor, and Mr. Sashikant Padwal, Technical Assistant of MPEDA Regional Division, Mumbai and Mr. Sanjay Chavan, SBSS handled the sessions. Water testing kits and life jackets were distributed to ensure safety and best management practices. 66 trainees attended the programme.

Participants with MPEDA officials during the training session on 14th March 2024

Participants with MPEDA officials during the training session on 16th March 2024

Raigad district

MPEDA Regional Division, Mumbai conducted a capacity building program for SC fishermen/farmers in Vavoshi village, Raigad district, on 22nd March 2024. The program focused on bio-security and personal hygiene in aquaculture and capture fisheries. Dr. Girija Saurabh Behere, MPEDA-NETFISH State Coordinator, and Mr. Atul Sathe, Field Supervisor of RD Mumbai coordinated the program. 30 participants participated the programme, at the end of which ice/fish storage boxes were distributed.

Distribution of ice/fish storage boxes

Trainees with MPEDA officials

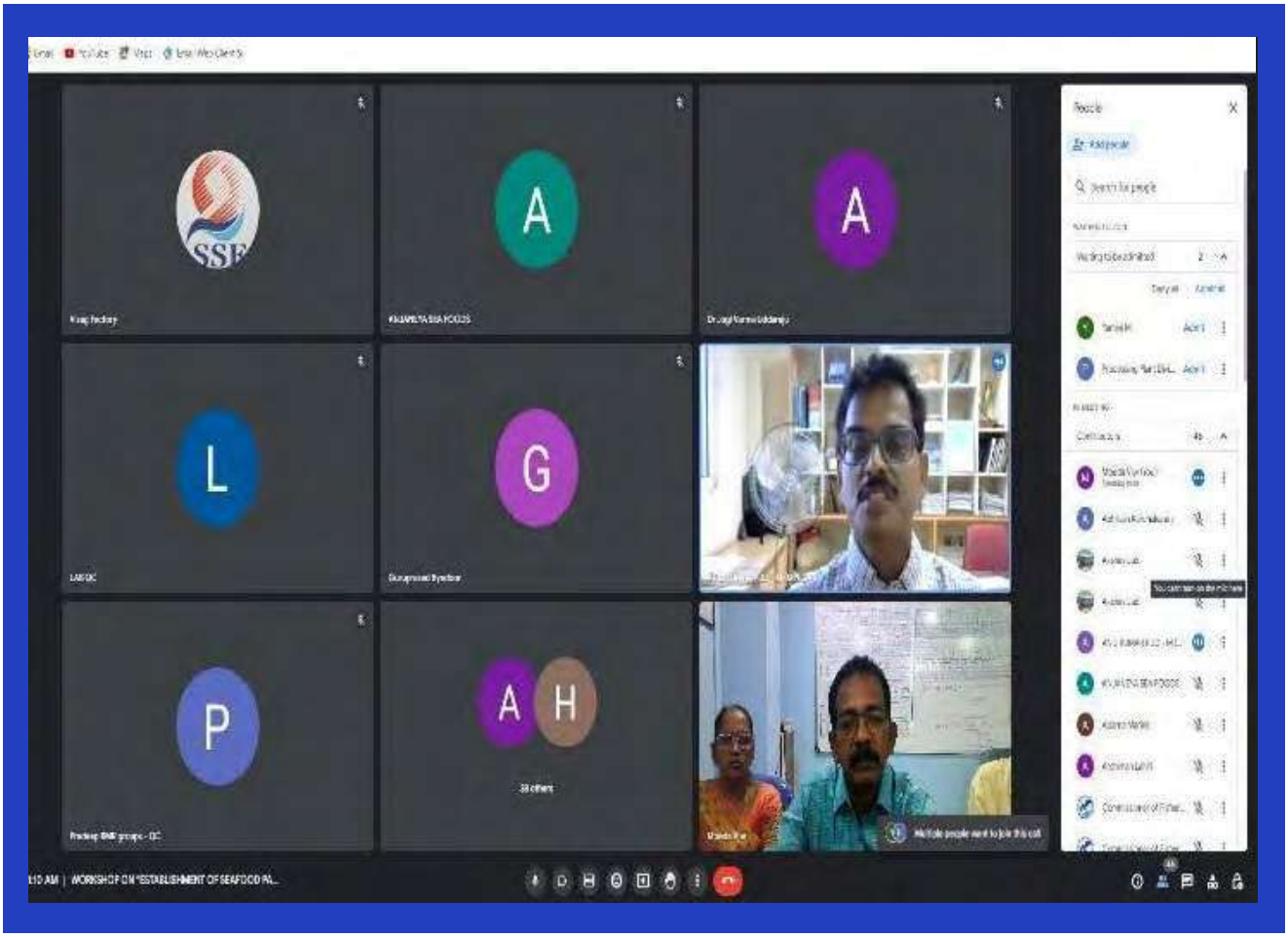
Workshop on establishment of seafood parks in Andhra Pradesh : A vision for growth and development

MPEDA Regional Division, Vijayawada organized a workshop on "Establishment of Seafood Parks in Andhra Pradesh-A vision for growth and Development" in hybrid mode on 21st March 2024.

Mrs. A. Suryakumari IAS, Commissioner of Fisheries, Government of Andhra Pradesh inaugurated the workshop. She briefed the participants about the Integrated Aqua Park Project in Bapatla district, which is expected to cost Rs. 88.08 crores with a state share of Rs. 35.23 crores and a central share of Rs. 52.85 crores. She highlighted that the suggestions and recommendations of the workshop can be incorporated in the proposal as per requirement. The project is expected to be developed phase-wise based on approvals and fund availability.

Mr. Anilkumar P., Joint Director (Marketing), provided introductory remarks outlining the purpose of organizing the workshop. Mr. Archiman Lahiri, Deputy Director, Regional Division, Bhubaneswar, presented on the Odisha Model Seafood Park. Ms. Madhavi Latha, Joint Director of Fisheries at the Office of the Commissioner of Fisheries, Andhra Pradesh, delivered a PowerPoint presentation on the "Status of Integrated Aqua Park Project Proposal in AP." Mr. Satishkumar P., an Expert Consultant from Visakhapatnam, discussed the cost-effective establishment of processing plants and cold storages.

The workshop was attended by 86 participants, including exporters, processors and officials from MPEDA and the Fisheries Department. The discussion covered topics such as park administration authority, common facilities, ETS, water, electricity tariffs, use of parks by interested parties, approvals and licenses, setting up hatcheries of various species etc.



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Engineering for a better world.

Microplastics in Seafood: Implication for post-harvest loss, seafood quality and human health

B. Sureandiran, Department of Fisheries Resource Management, College of Fisheries Science, Kamdhenu University, Veraval, Gujarat, India - 362 265 (sureandiranbfsc@gmail.com)

Introduction

Globally role of plastics in the life of humans became very essential from transportation of perishable products such as milk, vegetable, etc. then air/vacuum packaging of food products to wrapping of various kind of mechanical and technological instruments as these plastics were disposed after their utilization into the natural environment such as land or river which is finally transported to the sea. As the plastics thrown in the sea go through weathering via photo-dissociation, physical rupture, biological disintegration, etc. after this the plastic substance degraded into smaller particles or fragments with size of < 5 mm is considered as the "microplastics" (MPs) (FAO, 2019). These MPs can be classified as the primary and secondary microplastics based on the source, primary microplastics originated from the industries, etc. and secondary microplastics originated from the things such as dress materials, discarded waste, plastic bottles, fishing gears, etc. (Allen *et al.*, 2019). As per the statement of Kane *et al.* (2020) ocean floor is acting as the hotspots of microplastics because all the plastic substance entering from land to river and transported to the ocean further after some periodic time these plastics were degraded and settled down in the bottom, due to the water circulation pattern in the seafloor the transportation of microplastics from the bottom sediment to water column occurs. The presence of these microplastics in the sea-food is due to the ingestion of the MPs by the finfish or shellfish that are present in the water column (Carpenter *et al.*, 1972). Subsequently, these ingested plastics pass-through the food chain/food-web from the prey to the top predator (Hantoro, 2019). In this way, microplastics were detected in various marine organisms including fishes, crustaceans, bivalves, gastropods, cephalopods, etc. (Lundebye *et al.*, 2022). Even though many books, research articles, review papers, are present regarding the microplastics in the sea food, ecosystem damage, human-health issues, etc. (Fig. 1) there is a lack of awareness on the usage and proper disposal of plastic. The present article describes the impact of microplastics on the marine organisms and human health.

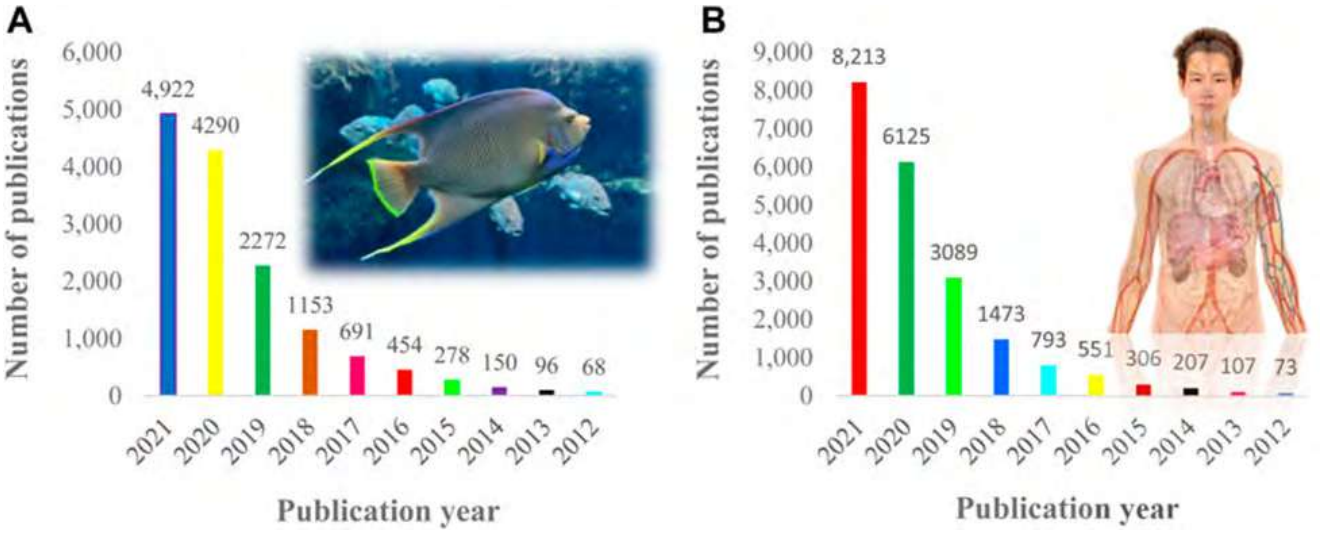

Fig. 1: List of research publications done to assess the impact of microplastics over fish and humans (Source: Bhuyan, 2022)

Transportation of the microplastics in the food web

In the marine environment, the ingestion of the microplastics by the primary consumers is the entry point of the MPs in the food web (Schuyler *et al.*, 2021). As the marine food web consists of majorly filter feeders which can filter the phytoplankton, zooplankton, algae, etc. in the surface or column of the water. While the particular organism is engaging themselves in the filter mechanism along with the food particles these MPs are also ingested and enters into the body of the finfish or shellfish (Riisgård and Larsen, 2010). As per the statement of Setälä *et al.* (2009) filter

feeding invertebrates engulfs more microplastics than the primary consumer, which is zooplankton. Bivalves are the one among the filter feeding invertebrate organisms which act as the vector for the carrying of MPs in the marine ecosystem through the way of prey-predator interaction. As the bivalves are preyed upon by fishes, crustaceans, cephalopods, etc. the MP ingested bivalves enters those animals and as they go on predating, the quantity of the MPs in the fish body will automatically increase. Further, the MPs present in the fish are carried to the top-level predator "Human beings". Likewise, the transportation of the microplastics occurs in the marine environment from Primary consumer > Secondary consumer > Tertiary consumer > Top-level predator.

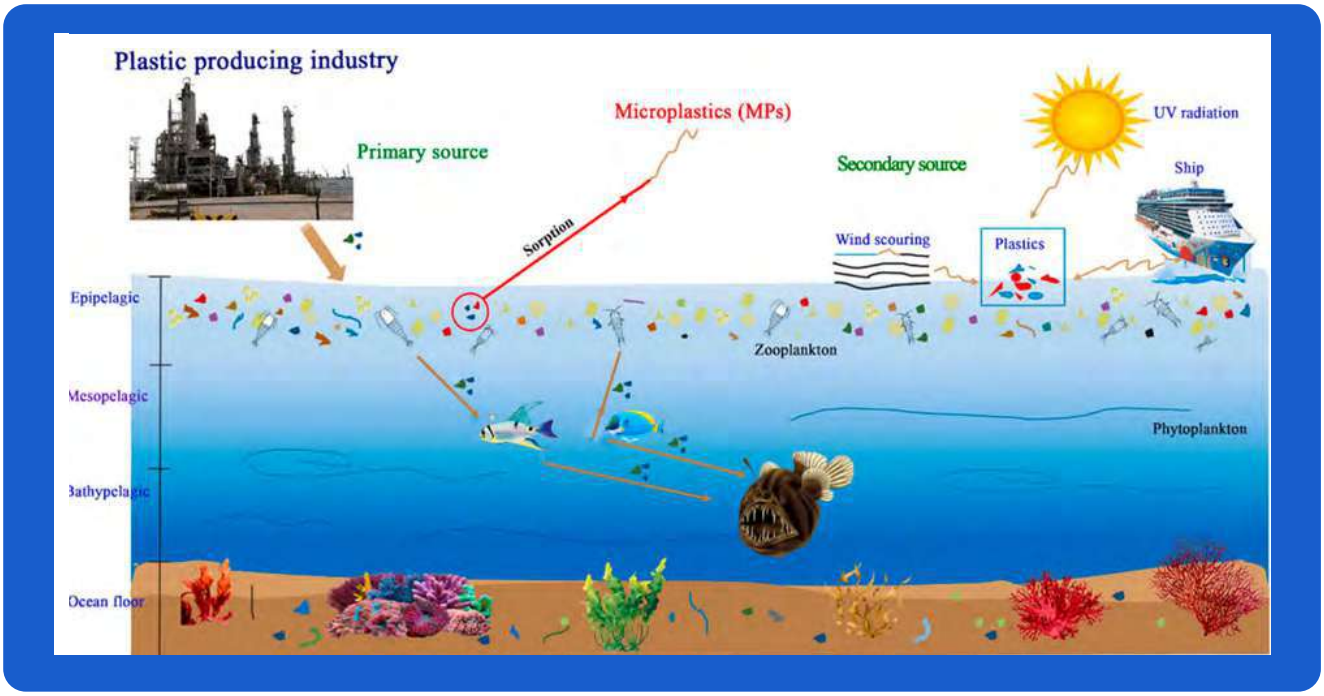

Fig. 2: Transportation of microplastics in the aquatic ecosystem through food web/food chain. (Source: Bhuyan, 2022)

Impact of microplastics in fishes

The entry of foreign matter like microplastics inside the fish body can impact their regular metabolism and change even their nutrient profile. Fish being the cheapest source of protein for different walks of people, also act as a main tool in avoiding poverty in many undeveloped and poorly developed countries. Shocking results on the presence of MPs were found in most of the fish species, which were either surface, demersal or reef associated, sampled globally (Lundebye *et al.*, 2022). Lusher *et al.* (2013) stated that the feeding ecology of the fishes shows difference due to the availability and presence of the MPs. Along with the microplastics, some plasticizers, stabilizers, pigments, fillers, etc. would present which can ooze out from the plastic substance to the marine environment. These substances are called the co-contaminants which also have negative impacts over the marine organisms.

Like fishes, crustaceans are also an important part of human food. Most of the crustaceans were filter feeders and detritus (feeding on the dead and decaying organisms). As the microplastics enter in the gut of the crustaceans through food materials then in some cases MP's can pierce the intestine or gut and enter into the muscle or tissues (Zeytin *et al.*, 2020).

Impact of microplastics in Human

The microplastics can enter the human body through the food chain, and by direct consumption of fish. As per EFSA (2016) the MPs of size <130 µm diameter have the ability to dislocate human tissue through entering further. Yoo et al. (2011) stated that MPs having size < 1.5 µm have ability to pierce the blood capillaries. In some cases, MPs can cause genotoxicity, apoptosis and necrosis that could cause tissue damage, fibrosis and carcinogenesis (Wright and Kelly, 2017). Some research findings suggest that MPs can enter through the inhalation of dust or sand particles in the industrial areas or nearby building construction sites which are having severe health impacts such as abnormal metabolism, reduced immune response to the pathogenic bacteria or virus which could result in new disease development, neuro-related disorders, improper nutrition absorption in the stomach region, etc. (Fig. 3).

Fig. 3: Transfer of microplastics from the environment to human (Source: Pinterest)

Conclusion

The presence of microplastics in seafood presents significant concerns for post-harvest losses, seafood quality and human health. Contamination with microplastics can lead to economic losses due to rejection or devaluation of seafood products, particularly in countries with strict food safety standards. Additionally, microplastics negatively impact the sensory and chemical quality of seafood by altering its appearance and serving as carriers for hazardous pollutants, such as heavy metals and persistent organic pollutants (POPs). From a human health perspective, the ingestion of microplastics via seafood raises potential risks, as the particles themselves, along with the toxic chemicals they may carry, could have harmful effects on human health. While the long-term health consequences are still being studied, the growing evidence points to the need for better management of plastic pollution and stricter regulations to safeguard seafood quality and protect public health. Addressing this issue will require a combination of reducing plastic use, improving waste management systems, and enhancing monitoring efforts in the seafood industry.

References

1. Allen S., Allen D., Phoenix V. R., Le Roux G., Durántez Jiménez P., Simonneau A., & Galop D. (2019). Atmospheric transport and deposition of microplastics in a remote mountain catchment. Nature Geoscience, 12(5), 339-344.

2. Bhuyan M. S. (2022). Effects of microplastics on fish and in human health. Frontiers in Environmental Science, 10, 1-17.

3. Carpenter E. J., Anderson S. J., Harvey G. R., Miklas H. P., & Peck B. B. (1972). Polystyrene spherules in coastal waters. Science, 178(4062), 749-750.

4. EFSA. (2016). Presence of microplastics and nanoplastics in food, with particular focus on seafood. Panel on contaminants in the food chain. EFSA J 14: e04501.

5. FAO. (2019). Microplastics in fisheries and aquaculture: What do we know? Should we be worried? https://www.fao.org/3/ca3540en/ca3540en.pdf

6. Hantoro I., Löhr A. J., Van Belleghem F. G., Widianarko B., & Ragas A. M. (2019). Microplastics in coastal areas and seafood: implications for food safety. Food Additives & Contaminants: Part A, 36(5), 674-711.

7. Kane I. A., Clare M. A., Miramontes E., Wogelius R., Rothwell J. J., Garreau P., & Pohl F. (2020). Seafloor microplastic hotspots controlled by deep-sea circulation. Science, 368(6495), 1140-1145.

8. Lundebye A. K., Lusher A. L., & Bank M. S. (2022). Marine microplastics and seafood: implications for food security. Microplastic in the environment: Pattern and process, 131.

9. Lusher A. L., Mchugh M., & Thompson R. C. (2013). Occurrence of microplastics in the gastrointestinal tract of pelagic and demersal fish from the English Channel. Marine pollution bulletin, 67(1-2), 94-99.

10. Riisgård H. U., & Larsen P. S. (2010). Particle capture mechanisms in suspension-feeding invertebrates. Marine Ecology Progress Series, 418, 255-293.

11. Setälä O., Sopanen S., Autio R., & Erler K. (2009). Grazing and food selection of the calanoid copepods Eurytemora affinis and Acartia bifilosa feeding on plankton assemblages containing Dinophysis spp. Boreal Environment Research, 14(5), 837.

12. Schuyler Q., Hardesty B. D., Wilcox C., & Townsend K. (2012). To eat or not to eat? Debris selectivity by marine turtles. PloS one, 7(7), e40884.

13. Wright S. L., & Kelly F. J. (2017). Plastic and human health: a micro issue? Environmental science & technology, 51(12), 6634-6647.

14. Yoo J. W., Doshi N., & Mitragotri S. (2011). Adaptive micro and nanoparticles: temporal control over carrier properties to facilitate drug delivery. Advanced drug delivery reviews, 63(14-15), 1247-1256.

15. Zeytin S., Wagner G., Mackay-Roberts N., Gerdts G., Schuirmann E., Klockmann S., & Slater M. (2020). Quantifying microplastic translocation from feed to the fillet in European sea bass Dicentrarchus labrax. Marine Pollution Bulletin, 156, 111210.

RAINBOW IN A BOWL

MICROGEOPHAGUS

V.K. Dey

V.K. Dey has over three decades of experience in diverse sectors of the seafood industry in the 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 the 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.

Microgeophagus, belonging to the group of Dwarf cichlids, are beautiful colourful fish which are native to South America. Popular among hobbyists, they are less than 7 cm long and have long fins and bright colours. They become territorial during spawning. They should be kept in small groups or pairs. They require good water quality in a planted tank, as well as a healthy diet. Males are less rounded and more colourful than females. They can be quite easily bred with spawning taking place on a flat rock or large leaf. Both parents guard the eggs and fry. There are two species of *Microgeophagus* known in the market, M. *altispinosa* and *M. ramirezi*.

Microgeophagus altispinosa, commonly known as butterfly ram, red ram or Bolivian ram, originates from the rivers, flood plains and streams of Bolivia and Brazil. They are small, colourful and peaceful fish, ideal for a community tank. They can have very nice colouration ranging from blue, yellow, gold, orange, bronze and black. Both the male and the female have a dot in the middle of the body. Most fins have a red border with the addition of blue on the pelvic and anal fins. When happy, they sport a yellow breast. Although not sexually dimorphic, size is often a reliable indicator of sex. Males are always larger, attaining a size of around 9 inches (23 cm) while females remain at 6 cm. They prefer soft, acidic water with pH 7.0 and dH 10 with temperature ranging from 24-26°C. A substrate of fine sand or gravel should be provided and water temperature should be kept at 26°C, with regular partial water changes. They will take flakes, baby brine shrimp and other meaty flake foods. They lay eggs on stones and small flower pots. Some reports say they dig a pit and lay their eggs in it. The female watches over the eggs while the male defends the territory. A single brood may have between 40 and 100 eggs. After 2–3 days, the eggs are chewed open by the parents. The wrigglers become free-swimming about a week later.

Microgeophagus ramirezi, better known as blue ram or ram cichlid, is one of the most well known dwarf cichlids. They are found in swamps, lagoons, and brooks in the savannas of the Orinoco River in Venezuela and Columbia. They are colourful, peaceful and fairly easy to care for. They take all types of live foods such as Artemia, bloodworms, glassworms, small insects and insect larvae. They do best at a temperature of 26°C. Rams will generally accept most prepared foods. As with all other dwarfs, they thrive with frequent feedings of live foods. The fish is moderately elongated with a long caudal peduncle. The dorsal fin stands tall and the caudal fin is fan-shaped. The head and throat region is pale yellow. The belly is delicate pink and the rest of the body is blue. The iris of the eye is blood-red with a black stripe running through it. This stripe begins at the forehead and ends at the underside of the head. The first rays of the dorsal fin are taller than the others and are black in colour. Just below the black rays is a pale black spot. On the mid-section is an obvious black spot. The pelvic fin is orange-red in the female or black and blue in the male. The anal fins are blue with a pink tinge near the tip. The blue caudal fin is edged with blue. The dorsal fin may have a red edge. This is a peaceful, timid fish that can be kept in a community tank with other non-aggressive fish such as tetras, pencilfish, hatchetfish, discus, *Apistogramma*, *Corydoras* and *Loricarids*.

Females are slightly smaller and develop a pink underside during the spawning season. The first ray of the male's dorsal fin is considerably longer. Breeding and raising the fry are fairly difficult. Ideal water temperature for breeding is 29-31°C with pH ranging from 6.5 - 6.8, and a soft hardness of 1-3 dH. The female spawns on wood or stones, or in small cavities. A good brood would lay 250-300 eggs. Both parents guard the eggs, which hatch in 2-3 days. The fry are very small, becoming free-swimming after 5-6 days when they should be fed liquid foods, rotifers, microworms, and later Artemia. The ram is a delicate fish, sensitive to pollutants, chemicals and disease.

Both species of *Microgeophagus* are now bred commercially in Southeast Asia. Two variations from selective breeding, a gold morph and a veil-tailed variety, are widely available and very popular.

Microgeophagus altispinosa

Microgeophagus ramirezi

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Better Management Practices in scientific shrimp farming

Dr. T. G. Manoj Kumar, Deputy Director, MPEDA SRD Bhimavaram
Mr. N. Purna Chandrasekhar, Regional Coordinator, MPEDA-NaCSA

Shrimp aquaculture has provided tremendous opportunity for economic and social upliftment of rural communities in the coastal areas of our country. Over a hundred thousand farmers, of whom about 90% belong to the small and marginal category, are engaged in utilization of the opportunity for their livelihood. However, the frequent disease outbreaks in shrimp farming led to huge production loss as well as started to affect our products competency in the international markets. Markets such as Australia, South Korea, Thailand, Saudi Arabia and Kuwait has imposed restrictions on Indian aquaculture shrimps due to the presence of certain pathogens such as White Spot Syndrome Virus (WSSV), Infectious Hypodermal and Hematopoietic Necrosis Virus (IHHNV), and Infectious Myo Necrosis Virus (IMNV).

Hence, in order to curtail the disease outbreaks in aquaculture activities, implementation of Better Management Practices (BMPs) in aquaculture systems are very much essential. The BMPs of shrimp farming mainly consists of 6 aspects:

1. Proper Pond Preparation
2. Selection of quality seed and stocking
3. Water quality Management
4. Feed Management
5. Health and Disease Management Practices
6. Better Harvest Practices

In this issue we will discuss the proper pond preparation activities in scientific shrimp farming and the other components will be discussed in the subsequent issues of the newsletter.

Pond Preparation

Pond preparation is essential to establish optimal condition of the pond soil for growing shrimps. It is done to enhance pond conditions in order to prolong sustainability of the ponds; to achieve good production results; and, to ensure a pollution and disease-free pond environment suitable for shrimp culture. The main objectives of pond preparation are:

- To provide the shrimp with a clean rearing environment and optimum conditions for their growth through reducing probability of toxic metabolites or pathogens from being transmitted to shrimp in successive cycles.
- Oxidize organic wastes and to reduce inorganic compounds that accumulate in pond bottoms during the culture.
- Correction of soil pH and enhancement of alkalinity.
- Good pond preparation is also a proactive measure for disease control and should be a critical aspect of disease management strategy.
- Enhance the availability of natural food organisms before stocking.

Pond preparation practices

Fig. 1: Pond after harvest

Pond Soils

Soil is the most important component in a culture system. The quality of soil should be ascertained for pH, permeability, bearing capacity and heavy metal content. Soil with low pH of below 5 and acid-sulfate soils should be avoided. Similarly, soils with high concentrations of heavy metals also should be avoided.

The soil characteristics suitable for a shrimp culture farm are pH 7-8, organic carbon - 1.5 - 2.5%, calcium carbonate - >5%, available nitrogen - 50-75 mg/100 g soil, available phosphorus - 4 - 6 mg/100 g soil and Electrical conductivity - > 4 mmhos/cm. Generally clayey loam soils are preferred. Sandy soils are seepage prone and will lead to problems of salinization of adjoining land and water resources. Further, maintenance of a farm in a sandy area needs high capital and operational costs. Hence, sandy areas should be avoided. A best site is the one, which involves lesser capital investment for constructing fully drainable ponds.

The steps involved in pond preparation are given below:

I. Water draining
II. Pond bottom preparation
III. Liming
IV. Fertilization
V. Water screening
VI. Water Fertilization
VII. Stabilization of Plankton bloom

I. Complete drainage of Pond

Drain the water from the pond completely after harvest. It helps in removing disease carrying crustaceans and other aquatic animals from previous crops of the pond. Areas that can´t be completely drained, must be disinfected with sodium or calcium hypochlorite or calcium oxide (burnt lime) (@100 to 200 grams per square meter for the purpose of disinfection). Coordinate the same with neighbouring farmers. Block the inlets and sluice pipes and other sources of water entry into ponds. Use pumps to remove any water logged inside the pond. Remove the snails, barnacles and gastropods (if any) manually.

Fig. 2: Complete draining of the water after harvest through pump

II. Pond bottom preparation

i. Remove the organic waste from pond bottom

Remove organic waste accumulated through the decay of unfed feed, dead and decaying plankton/algae and fecal matter of shrimp. This waste releases toxic gases like ammonia and hydrogen sulfide into the pond water and causes stress or death to shrimp.

Organic waste is in the form of layer on the soil with black color found in feeding area, corners, trenches and in the centre of the ponds (if aerators placed at the periphery) and should be checked for the presence of black layer when it is in wet condition. Completely remove it by scraping when the soil is slightly wet. Dump the waste in the ditch created on the top of the bund and cover it with good soil. Make sure that the dumped organic waste does not leach out to the pond through rain water. If it is difficult to remove the black soil completely, plough when it is wet and wait till it dries.

Fig. 3: Scraping the organic matter after the harvest

ii. Dry and plough the pond bottom

a. Pond drying

It is necessary to let the environment rest and restore in shrimp farms, by temporarily stopping the production. During the dry season (summer) it is possible to obtain a complete pond drying and during wet season-a partial drying, due to the differential weather conditions. This strategy is called “depopulation”. The drying of the pond bottom is the most practical, cheap and effective method of eliminating undesirable species in the pond, prior to the initiation of the culture.

Sun dry the pond bottom till the soil loses its moisture. Sunlight and dryness will kill the algal spores, benthic algal mats, fish eggs and any predators potentially remaining in the soil. Coordinate with the neighboring ponds for drying simultaneously to prevent water seepage from other ponds. The pond should be dried in hot sun for 20 to 30 days or more till its soil cracks 5 to 10 cm deep. Drying helps in oxidizing the organic matter, thus reducing sludge.

Fig.4: Sundry the pond till cracks appear

b. Ploughing

The purpose of ploughing is to enhance the oxidation of organic matter by pulverizing the soil to increase the exposure of wastes to sunlight and air. Bottom soil cracks into column blocks that can appear completely dry. However, the soil mass inside the block often is still wet. Tilling breaks the blocks to improve drying and oxidation. Tilling the upper 10 to 15 centimeters of soil helps to oxidize the wastes from the previous crop accumulated in this layer. Plough the pond 2 to 3 times with the gap of 2 to 3 days. It will help in oxidizing the organic matter and reducing gastropods. After tilling, compact the pond bottom to reduce the turbidity and seepage.

iii. Wet pond preparation

When the ponds cannot be dried fully farmers can follow wet pond preparation as given below.

- Apply tea seed cake (10ppm; 50kg/ ha) or active chlorine 65% (20 ppm) before ploughing, take out all dead animals.
- Use the tractor with gauge wheels to plough the pond with

15 to 20 cm water.

• After ploughing, pump out the existing water from the pond with pump.

Increase the water holding capacity of the pond. Bunds must be compacted well to prevent water seepage. If required, additional soil should be procured from outside to increase the bund height. Pond water depth must be maintained at a minimum water level of 1.2 meter at the middle of the pond, fix a wooden depth scale to monitor the water depth. There should be a free board of 30 cm from the water surface to the top of the bund.

Fig. 5: Heightening the bunds

Fig. 6: Ploughing of the pond

iv. Preparation of ponds with EHP history

Soil treatment

To disinfect earthen ponds of EHP spores, apply 6 tonnes per hectare of quicklime (CaO) to the dry pond sediment. Plow the lime to a depth of 10-12 centimeters and then moisten the sediment to activate it. Leave the pond undisturbed for one week before drying or refilling. The application of quicklime should raise the soil pH to 12 or higher for a few days, but it will then return to the normal range as it absorbs carbon dioxide and becomes calcium carbonate ($CaCO_3$) .

Water treatment

To inhibit EHP spore polar tube extrusion, treat the water with 40 ppm of 65% active chlorine or 15 ppm of potassium permanganate ($KMnO_4$) for 48 hours.

iv. Evaluation of the pond bottom conditions

Routine programs must be performed for soil sampling and laboratory analysis and based on the results, it must be rectified through the application of right products at the right dosage (lime or fertilizers) for each pond. At least 10 soil subsamples in equidistant points along an "S" route (from the least to the deepest site of the pond), which must be mixed to form a unique sample to be submitted for laboratory analysis.

Fig.7: Collection of soil samples for analysis

Potentially acid and sulfated soils must be excluded during the site selection for a shrimp farm. However, moderately acidic soils can be treated to improve its pH, through the process of liming with calcium carbonate

How to treat acid sulfate soil

i. Lining of the entire bottom and pond banks

To line the entire bottom and banks of a shrimp pond, use tarpaulins made of durable materials like HDPE, PVC or EPDM rubber. These plastic sheets come in various sizes and thicknesses to accommodate different pond dimensions and shrimp farming needs. Tarpaulin lining creates a hygienic farming environment and also offers several benefits including prevention of alum buildup, erosion and diseases.

ii. Chemical use (EDTA or lime)

While lime treatment is a common practice, it can be ineffective for ponds with high levels of alum, especially those larger than 1000 sq. m. Using excessive amounts of lime can be time-consuming and costly.

EDTA is another option for preventing iron alum buildup. However, EDTA has limited effectiveness. When EDTA is applied, it can precipitate iron in the water, reducing alum levels and causing the precipitate to sink to the pond bottom. However, this precipitate may resurface due to water agitation, requiring repeated treatments."

References:

• Manual of Best Management Practices for White Shrimp *Penaeus Vannamei by Farming-Fisheries and Aquaculture Organization of Central American Isthmus (OSPESCA).*

• *NaCSA Shrimp Farming Practical manual.*

• *The Fish site.*

The remaining aspects related to pond preparation will be discussed in the next issue.

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Farmers' meet on “Good aquaculture practices for sustainable aquaculture”

MPEDA Regional Division, Kolkata organized a farmers' meet on “Good aquaculture practices for sustainable aquaculture” on 5th March 2024 at Vidyanagar, Kakdwip, South 24 Parganas district. Mr. Manturam Pakhira, Hon’ble MLA inaugurated the programme, which was attended by 103 aqua farmers. The MPEDA officials RD Kolkata including Mr. Darshan Lal Dhondiyal, Assistant Director discussed the importance of quality, safety, and sustainability in seafood exports. Mr. K. Ramanjaneyulu, JTO highlighted the benefits of diversification in aquaculture and the need to follow good farming practices. Field Manager, Mr. Pradip Maity, Field Manager, NaCSA discussed the potential of society formation and cluster farming, emphasizing the importance of Better Management Practices in aquaculture.

View of farmer’s meet programme

Training programmes by MPEDA

MPEDA Regional Division, Mumbai conducted two capacity building programmes at Eklara in Yavatmal district to raise awareness about biosecurity in aquaculture. Farmers, workers and fishers belonging to ST category participated in the programmes conducted on 21st and 22nd March 2024. The programmes were inaugurated by Mr. Gajanan Atram and Mrs. Prajakta Gedam, office bearers of the Navnirmaan Mahila Gramsangh (NMG), a society working to uplift the socio-economic status of rural people in Yavatmal. They created Solar Cold Storage, Feed Mill, and fish cages for rural women groups, with nearly 1000 women members in their gram sangh. NMG coordinated and arranged beneficiaries for the programs, encouraging trainees to understand the basics of producing quality fish and personal hygiene. Insulated boxes with capacities of 50 L and 25 L were distributed to participants. The programmes concluded with a field visit to fish cage culture, feed mill, and solar cold storage.

View of participants on 21st March 2024

View of participants on 22nd March 2024

MPEDA Regional Division, Mumbai conducted another training program on sustainable shrimp farming and aquaculture of diverse species at the Office of the Regional Deputy Commissioner of Fisheries in Pune, Maharashtra. The program, attended by 21 trainees, in which a technical session was attended by officials from the Department of Fisheries, Government of Maharashtra, and technical presentations from various officials. The program also featured practical experience from a Progressive Farmer from Pune, who shared his knowledge on scampi and GIFT farming and marketing. Certificates were distributed during the valedictory function.

Details of the SPF *P. vannamei* brooders imported & quarantined at AQF during January 2024

Sl. No.	Name of the importer	State	Country of origin/ supplier	Date of receipt of the lot at AQF arrival	Broodstock imported (nos)		
					Male	Female	Total
1	Sapthagiri Hatcheries - Anakapalli	Andhra Pradesh	SIS, Florida	05.01.24	500	500	1000
2	Sri Mahalakshmi Hatcheries - Vizag	Andhra Pradesh	SIS, Florida	05.01.24	200	400	600
3	SS Hatcheries	Andhra Pradesh	SIS, Florida	06.01.24	200	200	400
4	Gayathri Hatcheries	Andhra Pradesh	SIS, Florida	10.01.24	300	300	600
5	Venkata Sai Hatcheries	Andhra Pradesh	SIS, Florida	10.01.24	300	300	600
6	Meenakshi Hatcheries Pvt. Ltd	Andhra Pradesh	SIS, Florida	12.01.24	700	700	1400
7	Vaisakhi Bio-Resources Pvt. Ltd - Plant II	Andhra Pradesh	SIS, Florida	19.01.24	600	600	1200
8	Royal Hatcheries	Tamil Nadu	SIS, Florida	19.01.24	300	300	600
9	Sreevalli Hatcheries	Andhra Pradesh	SIS, Florida	21.01.24	300	300	600
10	Sree Hatchery	Andhra Pradesh	SyAqua Americas Inc, Florida	21.01.24	200	200	400
11	Sree Victory Shrimp Products Pvt. Ltd	Andhra Pradesh	SIS, Florida	21.01.24	300	300	600
12	Sai Marine Exports Pvt. Ltd	Andhra Pradesh	SIS, Florida	21.01.24	300	300	600
13	Hybrid Ebi Hatcheries Pvt. Ltd	Tamil Nadu	SyAqua Americas Inc, Florida	21.01.24	500	500	1000
14	CP Aquaculture (India) Pvt. Ltd - Mukkam	Andhra Pradesh	American Penaeid, Florida	23.01.24	300	300	600
15	Vaisakhi Bio Marine Pvt. Ltd - Unit III	Andhra Pradesh	SyAqua Americas Inc, Florida	24.01.24	600	600	1200
16	Sri Sampat Vinayak Aqua Products Pvt. Ltd	Andhra Pradesh	SIS, Florida	26.01.24	600	600	1200
	TOTAL				**6200**	**6400**	**12600**

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Details of the SPF *P. monodon* brooders imported & quarantined at AQF during January 2024

Sl. No.	Name of the importer	State	Country of origin/ supplier	Date of receipt of the lot at AQF arrival	Broodstock imported (nos)		
					Male	Female	Total
1	Golden Marine Harvest - Unit VI	Tamil Nadu	Aquaculture De La Mahajambal; Madagascar	14.01.24	115	116	231
2	Mas Aqua Techniks Pvt. Ltd - Plant II	Andhra Pradesh	Aquaculture De La Mahajambal; Madagascar	16.01.24	115	116	231
3	Mas Aqua Techniks Pvt. Ltd - Plant II	Andhra Pradesh	Aquaculture De La Mahajambal; Madagascar	30.01.24	115	116	231
	TOTAL				**345**	**348**	**693**

Details of the SPF *P. vannamei* brooders imported & quarantined at AQF during February 2024

Sl. No.	Name of the importer	State	Country of origin/ supplier	Date of receipt of the lot at AQF arrival	Broodstock imported (nos)		
					Male	Female	Total
1	Golden Marine Harvest Unit-IV	Tamil Nadu	SIS, Florida	02.02.24	600	600	1200
2	Coastal Aqua Pvt. Ltd SS Hatcheries	Andhra Pradesh	SIS, Florida	03.02.24	300	300	600
3	Suhaan Enterprises Pvt. Ltd	Andhra Pradesh	SIS, Florida	03.02.24	300	300	600
4	Sri Manjunadha Hatcheries - Phase II	Andhra Pradesh	SIS, Florida	03.02.24	300	300	600
5	Rama Shrimp Hatchery	Andhra Pradesh	SyAqua Americas Inc, Florida	05.02.24	600	600	1200
6	SB Marines	Andhra Pradesh	SIS, Florida	07.02.24	270	270	540
7	Apex Frozen foods Ltd	Andhra Pradesh	SIS, Florida	07.02.24	400	400	800
8	Blue Bay Culture	Tamil Nadu	SIS, Florida	08.02.24	300	300	600
9	Varun Hatcheries	Andhra Pradesh	SIS, Florida	09.02.24	300	300	600

10	Sun Glow Marine	Tamil Nadu	SyAqua Americas Inc, Florida	09.02.24	200	200	400
11	Suhaan Enterprises Pvt. Ltd	Andhra Pradesh	SyAqua Americas Inc, Florida	09.02.24	300	300	600
12	Samudra Hatcheries Pvt. Ltd	Andhra Pradesh	SIS, Florida	11.02.24	115	115	230
13	Empire Marine Harvest	Tamil Nadu	SIS, Florida	15.02.24	200	200	400
14	Sandhya Aqua Exports Pvt. Ltd	Andhra Pradesh	SIS, Florida	15.02.24	300	300	600
15	Vaisakhi Bio-Resources Pvt. Ltd	Andhra Pradesh	SIS, Florida	16.02.24	500	500	1000
16	Venture Shrimp Hatchery	Tamil Nadu	SIS, Florida	16.02.24	400	400	800
17	Sapthagiri Hatcheries	Andhra Pradesh	Kona Bay, Hawaii	16.02.24	552	552	1104
18	Sapthagiri Hatcheries - Unit II	Andhra Pradesh	Kona Bay, Hawaii	16.02.24	222	222	444
19	Sun Glow Marine	Tamil Nadu	SIS, Florida	18.02.24	180	180	360
20	Vaisakhi Bio-Marine Pvt. Ltd	Tamil Nadu	Kona Bay, Hawaii	24.02.24	94	94	188
21	Vaisakhi Bio-Marine Pvt. Ltd - Unit II	Andhra Pradesh	Kona Bay, Hawaii	24.02.24	330	330	660
22	Sai Marine Exports Pvt. Ltd - Unit II	Andhra Pradesh	SIS, Florida	28.02.24	300	300	600
	TOTAL				**7063**	**7063**	**14126**

Details of the SPF *P. monodon* brooders imported & quarantined at AQF during February 2024

Sl. No.	Name of the importer	State	Country of origin/ supplier	Date of receipt of the lot at AQF arrival	Broodstock imported (nos)		
					Male	Female	Total
1	Golden Marine Harvest - Unit VI	Tamil Nadu	Aquaculture De La Mahajambal; Madagascar	06.02.24	150	88	238
2	Unibio (India) Hatcheries Pvt. Ltd	Tamil Nadu	Aquaculture De La Mahajambal; Madagascar	25.02.24	115	116	231
	TOTAL				**265**	**204**	**469**

MPEDA training programmes

Maharashtra

MPEDA Regional Division, Mumbai organized two training programmes on “Sustainable Shrimp Farming and Aquaculture of Diversified species" during March 2024. Details of the programmes are as follows:

1. 3 days' training at Office of the Regional Deputy Commissioner of Fisheries, Pune from 9th to 11th March 2024.

2. 5 days' training at Vavoshi village, Taluk Khalapur and District Raigad from 17th to 21st March for the benefit of farmers belonging to SC community.

Total of 39 participants attended the training. The training at Raigad district included field visits to ornamental fish breeding and rearing centre, fish farm/nursery and aquaculture mud crab fattening and soft shell crab unit. Certificates were distributed to the participants during the valedictory function.

View of training at Office of the Regional Deputy Commissioner of Fisheries, Pune

View of training at Raigad

Field visit to Mangrove crab fattening and soft shell crab unit at Shahapur, Alibaug

Gujarat

MPEDA-NaCSA conducted a 3-day SC Training programme in Tena village, Surat district, Gujarat, from 5th to 7th March 2024. The program focused on best management practices of prawn/shrimp and diversification of species in aquaculture. The training included lectures by field managers, regional coordinators, and experts on various topics such as GIFT Tilapia, scampi farming, mud crab farming, illegal antibiotic use, seed selection and feed management, cage culture introduction, biosecurity measures, disease prevention and control, and better management practices of cage culture. The training program was attended by 15 progressive SC farmers, who received certificates during the valedictory function.

View of technical session

Distribution of certificates to the trainees

View of NaCSA officials and participants

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Junior Tech. Officer,
MPEDA QC Laboratory, Bhimavaram

Bill to ban octopus farming passes Washington senate

Poised to become the first law of its kind, a progressive bill to prohibit the farming of octopus in Washington state has been passed by the Senate, and is awaiting approval from the state Governor.

The Aquatic Life Institute states that the complex nature of octopuses makes farming of the animal inhumane

A ground-breaking bill to prohibit octopus farming has passed the Washington State Senate with a vote of 29 in favour of the legislation, whilst 20 senators sat in opposition.

The bill was advocated heavily by multiple animal rights NGOs, including the Aquatic Life Institute (ALI) and the Aquatic Animal Alliance - a coalition of animal rights groups. The organisations repeatedly urged state legislators to support the bill to the House Agriculture and Natural Resources Committee last year, as well as the House Rules Committee and the Senate Rules Committee this year.

The Aquatic Life Institute, which also works with corporations on procurement policies banning the purchase of farmed octopus, stated in a press release that their concerns towards cephalopod farming stem from the nature of octopuses as "highly intelligent and complex animals that suffer greatly in captivity due to their solitary and inquisitive nature."

"Furthermore, there are no approved humane slaughter methods for these animals, and their carnivorous diet makes farming them unsustainable and damaging to the environment. Nitrogen and phosphorus waste would be a product of the octopus farms, as would contamination from fertilisers, algaecides, herbicides, and disinfectants. It is also possible that diseases would spread from the farms to the wild environment, and aquatic animals living in those environments," they added.

The passing of the bill at the state Senate level represents a significant success for ALI, and comes as other states, such as Hawai'i and California introduce similar bills which prohibit the farming and sale of certain species of octopus.

ALI is hopeful that the progression of these bills will encourage similar legislation across other locations, both within the US and globally.

World's largest tropical seaweed farm begins operations

Marking an important step towards the mass cultivation of seaweeds, Sea6 Energy has launched the world's largest mechanised tropical seaweed farm off the coast of Lombok, Indonesia.

Sea6 Energy - an India-based seaweed producer - has launched the world's first large-scale mechanised tropical seaweed farm. The farm, which covers an area of 1 km2, marks a significant milestone in establishing the scalability of sustainable tropical seaweed cultivation, with potential applications including biostimulants, bioplastics, and the continued research and development of renewable chemicals and fuels.

Until now, the harvesting process for mass cultivation of tropical seaweed has acted as a significant barrier to the scalability of the industry, and is a key reason for the lack of research into the seaweed feedstock's applicability in large industrial applications.

By automating various workflows of seaweed cultivation, from seeding to harvesting, and developing knowledge that dramatically enhances the feedstock's shelf life, Sea6 aims to increase the productivity of smallholder seaweed farms with their vertically integrated innovative platform.

The launch of the unprecedented seaweed farm was attended by dignitaries in Indonesia, including the Coordinating Minister for Maritime Affairs and Investment, the Minister of Fisheries, and the Minister of Industry. Their presence at the launch underscores the importance of this project in promoting environmental stewardship and fostering economic growth in the region.

The large-scale seaweed cultivation project in Lombok is a shining example of India-Indonesia cooperation in the blue economy. Sea6 Energy is a product of India's biotechnology innovation ecosystem. They are pioneers of seaweed cultivation and processing technologies globally," said Sandeep Chakravorty, Ambassador of India to Indonesia and Timor Leste, in a press release announcing the launch.

"Greater investment in seaweed cultivation can meet the challenges of producing biodegradable industrial raw materials such as biofuels and bioplastics. Sea6's investments in Indonesia are creating local green jobs, developing skills, creating opportunities, and building a sustainable local economy," he added.

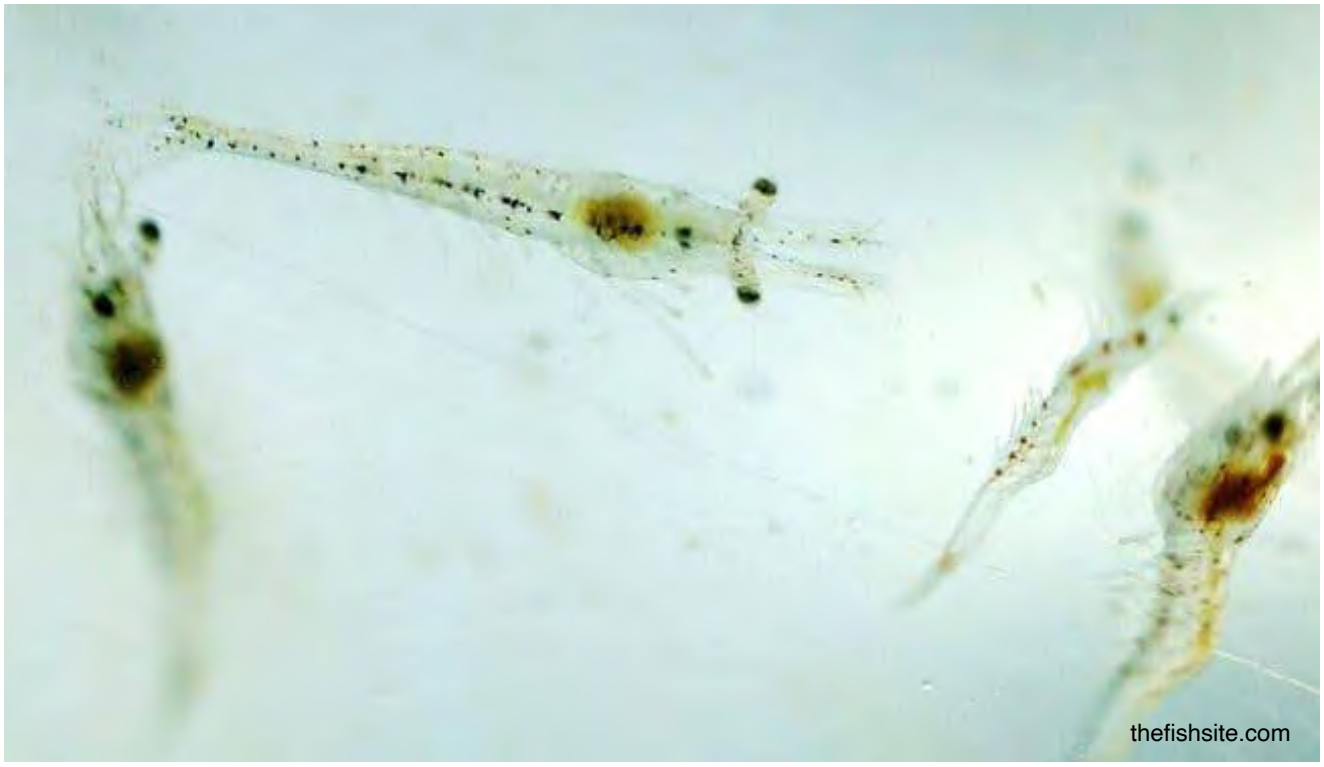
Sea6's potential for scale and commitment to sustainable aquaculture has attracted nearly $30 million of international investment over the past ten years, including support from Netherlands-based sustainable aquaculture fund AquaSpark.

"We are honoured to inaugurate the world's first mechanized tropical sea farm, a testament to our unwavering commitment to innovation and sustainability in the ocean economy," said Nelson Vadassery, cofounder and chief executive officer at Sea6 Energy.

"This ground breaking initiative not only showcases the immense potential of sustainable seaweed cultivation but also underscores our collective responsibility to develop sustainable products for future generations," Vadassery concluded.

Ecuador launches sustainable shrimp initiative

The Scale Up Programme for shrimp hatcheries, officially launched during the 2024 AquaExpo convention, aims to promote the sustainable management of shrimp larvae production.



The Sustainable Shrimp Partnership (SSP) and the National Chamber of Aquaculture (CNA) have officially launched the Scale Up Programme for shrimp hatcheries, as part of the 2024 Santa Elena AquaExpo convention. The project aims to promote the sustainable sourcing of shrimp larvae, while also boosting recognition for hatcheries committed to improving both the quality of their product and their environmental and social impact.

“The Scale Up Programme emerges as a measure to elevate the standards of shrimp aquaculture and ensure that this activity adheres to sustainability principles throughout its entire production chain, including the initial stage,” said Pamela Nath, director of SSP, in a press release announcing the Programme.

“With this plan, we aim to guide and provide tools to shrimp hatcheries to implement efficient and responsible practices in all their operations," Nath added.

As part of the Programme, guidelines for the establishment of regulations for sustainable shrimp larvae production were developed. The guiding principles of the manual focus on compliance with current regulations, ensuring adequate infrastructure, responsible resource utilisation, storage, sanitation, biosecurity, environmental impact, and social responsibility.

“In addition to enhancing industry standards, this programme reinforces Ecuador’s commitment to sustainability, and consolidates our reputation as responsible leaders in global shrimp production,” said José Antonio Camposano, executive president of the CNA.

Inve Aquaculture - an associate member of SSP - also collaborated throughout the development of the project.

“By implementing these practices at the hatchery level, we aim for a more transparent aquaculture industry, highlighting the importance of biosecurity measures, advanced water treatment processes, and reducing the use of chemicals during live food production to minimise waste discharge into the environment,” commented Xavier Valdez, area manager at Inve Aquaculture.

In an effort to prepare and support participating hatcheries to implement the regulations set down by the guidelines, the initiative also includes training sessions and audits for shrimp larvae producers. These aim to assess compliance with regulations and provide feedback on areas for improvement.

Seafood Expo North America 2024, Boston

SHRIMP			
1	Modu Food Service USA, CA Ph.: +1 2131 760 5695 Email: sungjo.b@modugt.com *Shrimp, Prawn*	2	Maoming Xinzhoce China Email: huimingyuan163@vip.com Ph.: +86 19107893333 *Black Tiger Shrimp*
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5	Manoj. A Fresh Water Lily USA Mob: +1 770-570-0542 Email: info@freshwaterlily.com Web: www.freshwater.com *Chilled shrimp*	6	Dushyant Singh Director DUSC Corporation Toronto, Canada Ph.: +1647-917-2057 Email: dusc.corp@gmail.com *Shrimp*
7	Alice Zhou General Manager Beauty Foods Ltd Room.728, Nanjiang Business Centre, Shushan, Zhejiang, China Ph.: +86 571 83880667, 82654791 Mob: +86 134 8637 0225 Email: sales@beauty-foods.com Web: www.beauty-foods.com *Shrimp*	8	Jeff Zhou CEO Mariscos De Nola Seafood Wholesaler 501 A Louisiana Street Westwego, LA 70094 Tel: + 504 436-0299 Mob: + 504 355-7432 Web: www.mariscosdenola.com Email: jeff@mariscosdenola.com *Shrimp*
9	Fazlay Barobhuiya CEO Ethnic Foods 18-61 41street Astoria, NY 11105, USA Ph. :+1 516 927-0407 Mob:+1 646 724-6614 Email: vishal@ethnicfoodgroup.com *Shrimp*	10	Jeff Danhof Business Manager Limson Trading,INC 1300 Gezon Parkway SW Wyoming, MI 49509 Ph.:+1 616 717-6839 Email : jeff.danhof@limsontrading.com Web: www.limsontrading.com *Shrimp*
11	Joyce Zeng General Manager Gansu Zheng Xing Fei Teng Trading Co.,LTD No:17, 4 th Rows, Food Commercial Plaza, Jiayuguan Dong Road Chengguan, Lanzhou City Gansu Province, China Mob: +86-13760722782 Email: 81968059@qq.com *L.vannamei*	12	Mr.Nguyen Si Vinh Cuong, Overseas Director Sanae Thai Products co.,Ltd, Innofresh International co.,Ltd 341/70 Cherd wutthakat Rd, Sikan Sub District, Don Mueang, Bangok 10210 Thailand, Ph.: +84 903814878 Email: nsvcuong@sotratech.vn Web: www.sanaethai.co.th Web: www.innofreshinternational.com *Shrimp*

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15	Manuel Sanchef Director Redfosin Mexico Ph.: +52 6672070856 Email: manuel.sanchef@sinaloa.got.mx *L.vannamei*	16	Fred Gnoassia Managing Director Shiphrah Puah & Co USA Email: shiphrahinc@outlook.com Ph: +1 202 880 4325 *Dried Shrimp*
17	S.Siritharan President Ocean Star Ltd 2691 Markham Road #10&12 Scarborough, ON Ph.: +416 299 3200 Mob: +416 454 1172 Email: sri@oceanstarltd.com Web: www.oceanstarltd.com *L.vannamei Shrimp, Black Tiger Shrimp*	18	Martin Trott Assistant General Manager Butterfield & Vallis P.O. Box HM 468 Hamilton HMBX, Bermuda Tel: +441 295 3434 Mob: +441 535 2300 Email: mtrott@bv.bm Web: www.bv.bm *L.vannamei, Black Tiger Shrimp, Red Shrimp*
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21	Norman L Chwang General Manager Shrimp Mart Thai Co. Ltd. 107/21 Soi Kanlayathep, Hatyai Songkhla, 90110, Thailand Ph.: +66 898700221 Mob: +1 4102995331 Email: Norman.chwang@gmail.com Web: www.oceanblueresources.com *Shrimp*	22	Kate Baek Manager/International Dept Riverside seafood Co. Ltd. 512-HO, B-Dong,10, Olympic-ro 35Ga-gil, Songpa-Gu Seoul, South Korea (05510) Ph.: +82-2-421-4274 Mob: +82-10-3167-9284 Email: rsseafoodkr@gmail.com *L. vannamei*
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	MIXED ITEMS/OTHERS		
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7	S.Sal Rio Besaim 2020W Mcnab Rd Suit 99-G, Ph.: +561 631-7939 Email: Srio@besaimtrade.com Web: www.Besaimtrade.com *Seafood*	8	Daniel Gianella Seafood watcher Peru Email: danielgianella@hotmail.com Ph.: +51 934548610 *Squid, Fish*

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9	Mr. Hugo Hui Golden Source Trading Co. Mob: +852 97105885 E-mail: hugoasuka@gmail.com *All seafood (Shrimps, Squids), Sashimi products*	10	Mr. Philip Wong Royal Rich (China) Ltd. Mob: +852 90386278 E-mail: philip@royalrich-china.com *Fish maws*
11	Mr. Sanjay Nagarkar Globex Biotech (Hong Kong) Limited Mob: +852 96842630 E-mail: sanjaynagarka@gmail.com *Spirulina, Seaweed*	12	Chung Nam Dried Seafood Company Ltd G/F Shop A 164, Wing Lok Street, Sheung Wan, Hong Kong. Tel: +852 28549218, Mob:+852 90293437 *Dried Fish maws*
13	Mr. Calvin Yu CEO, TEAM RIVER Corporation Limited 11/F, B1, Victory Factory Building, 16 Wong Chuk Hang Road, Hong Kong Mob: +852 60503821 E-mail: sales@teamriver.com.hk Web: www.teamriver.com.hk *Fish Fillets, Scorpionfish*	14	Mr. Hung Tsang Fai Cheung Hing Bird Nest Chong G/F No. 134, Wing Lok Street, Sheung Wan, Hong Kong. Tel: +852 25493839/ 28512033 Fax: +852 28512568 Mob: +852 90436585 *Dried Fish maws*
15	Mr. Fritz Wong (Managing Director) Mr. Henry Kwok (Manager) The Food Source Ltd Unit B, 2/F, Dragon Industrial Building, 93 King Lam Street, Lai Chi Kok, Kowloon, Hong Kong Mob: +852 34228718 E-mail: Fritz@foodsource.com.hk henry@foodsource.com.hk *Frozen Lobsters, shrimps, wild-caught fish & fillets, bivalves, ASC & MSC certified seafood (all kinds), further processed seafood such as breaded items, surimi items, etc.*		

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