



MPEDA

Newsletter

VOL. XII NO. 2 MAY 2024

Seafood Expo Global 2024

Better Management Practices
in scientific shrimp farming

Marine landings report
February 2024

Smart shrimp farming
in circular ponds



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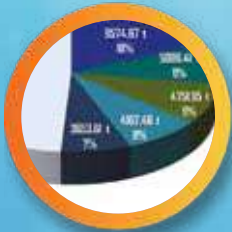
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D.V. Swamy IAS
Chairman

Dear friends,

As you know, seafood exports from India have touched the record figure of US\$ 8.07 billion from 2022-23. However, the sector could not maintain that streak in 2023-24 as the provisional export figures based on the data provided by the Department of Commerce indicated 8.80% decline in the export of marine products based on US\$ earnings. The export figure touched US\$ 7.36 billion during the last fiscal year due to the market sentiments from general economic conditions prevailing in significant markets such as the USA, EU and Japan, and the Red Sea crisis. However, the quantity of marine products exported surpassed the previous year's figure by about 2.67% as per the provisional figures. We are conducting a thorough analysis of the export figures and will share more details in upcoming issues of this newsletter. MPEDA also intends to analyze market conditions to develop strategic interventions that will support the sector's growth as planned.

Our future growth is a collective effort, and as a crucial step, the authority has planned a Chintan Shivir workshop in May 2024. This workshop will bring together all the concerned departments and stakeholders in the value chain to deliberate and frame recommendations. Your participation and insights are invaluable in this process. These recommendations will form the basis of an action plan to enhance seafood production and productivity and to achieve our envisaged export target in the next 5 years. The success of our previous Chintan Shivir at Goa in 2023 and the ongoing implementation of its recommendations are a testament to the effectiveness of this collaborative approach.

We are grateful for your continued support and participation in our initiatives. MPEDA successfully participated in the Seafood Expo Global, the largest seafood exhibition in the world, held in Barcelona, Spain, from 23rd to 25th April 2024. Altogether, 39 exporters took part in the exhibition, along with MPEDA, under the gorgeous pavilion set up by MPEDA during the expo. Not stopping there, MPEDA plans follow-up meetings with buyers in the coming months. We have also initiated preparations to participate in major seafood shows of 2024, such as Japan International Seafood & Technology Expo, China Fisheries & Seafood Expo and Seafood Expo North America and our exporters are enthused to participate in these shows. Meanwhile, a virtual Buyer Seller Meet was also organized by MPEDA with a Japanese Buyer in April 2024.

Thank you,

On the Platter



MPEDA
VOL.XII NO.02 2024 MAY Newsletter

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MPEDA at Seafood Expo Global 2024



View of exhibition venue

Seafood Expo Global and Seafood Processing Global form the world's largest seafood trade event. Every year, the three-day exposition attracts thousands of global suppliers and buyers who come to interact, network, and do business. Buyers in attendance include wholesalers, importers, exporters, restaurants, grocery stores and other retail and foodservice businesses. The newest seafood products, processing and packaging tools, and services were exhibited. Diversified Communications, a global leader in media and expositions for the seafood sector, organized this show and the details of the show were showcased in the site [SeafoodSource.com](https://www.seafoodsource.com).

EU seafood market

The Europe seafood market size was valued at US\$ 91.74 billion in 2022. Seafood market in Europe is expected to reach US\$ 140.2 billion by 2032, at a CAGR of 4.3% during the forecast period 2022 to 2032.

Europe is a major market for fish and seafood products, and tuna, cod, Salmon, Alaska Pollock and shrimps account for around 44% of the total seafood consumed. As it is not a single market, understanding the unique needs of the various country markets within the European Union is essential.

The COVID-19 pandemic had a significant impact on the seafood consumption of Europe, as the restaurants and hotels were closed down for months, and seafood processing plants had to reduce their capacity due to social distancing measures. However, out-of-home consumption has since risen, with continued growth expected to stabilize between 2024 and 2026. There is reportedly a significant increase in high valued species mainly destined for HOTels, REstaurants, CAFés (HoReCa) sector after 2021, which gradually started to regain grounds after the pandemic.

Sustainability, certification, transparency, and origin stories are now key factors for consumers in any market in EU countries.

India's marine product trade with EU

Europe continued to be the main focus for the Indian seafood exports as it contributed 14% value share of Indian seafood exports during 2023-24, and stood third among the markets. Frozen shrimp was the major item being exported, accounting for 55% in value and 46.5% in quantity.

During the year 2023-24, the exports to the EU declined by 18% in terms of value compared to last year. Cephalopods and fishes enjoy a good market demand and there is equally good demand for big size head on Black tiger shrimps. The top EU countries importing Indian seafood are Spain, Belgium, Netherland and Italy. The item-wise export of marine products to the EU for the last five years is placed in table 1.

Seafood Expo Global/Seafood Processing Global

Seafood Expo Global/Seafood Processing Global is the global seafood marketplace, serving industry professionals and buyers from all corners of the supply chain and world. With 51,248 net sq. m. of exhibit space, the 30th edition was participated by record 2,244 exhibiting companies from 87 countries and 67 national and regional pavilions from around the world. About 35,000 buyers and suppliers from the global seafood industry came to the event for its third year in Barcelona.

Seafood Expo Global exhibitors displayed the latest innovations in seafood, including fresh, frozen, canned, value-added, processed, and packaged products. These included seafood spreads, fish chips, pickled wakame seaweed and seafood candies like salmon candy and shrimp lollipops. Seafood Processing Global brought together companies representing every aspect of seafood processing, including packaging material and machinery, equipment and supplies for refrigeration and freezing, primary and secondary processing equipment, hygiene control and sanitation, and quality assurance services.

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Table 1: India's export of marine products to EU (Source: MPEDA)

ITEM		2019-20	2020-21	2021-22	2022-23	2023-24
FROZEN SHRIMP	Q:	74035	70133	90549	95377	89697
	V:	3590.91	3518.09	4848.41	5581.42	4700.45
	\$:	513.00	479.78	657.71	705.03	573.36
FROZEN FISH	Q:	6199	5907	6778	7500	7430
	V:	148.93	149.62	187.21	242.02	234.40
	\$:	21.27	20.42	25.35	30.36	28.61
FR CUTTLE FISH	Q:	31313	27970	34194	29136	28627
	V:	1060.21	952.49	1364.18	1481.66	1402.28
	\$:	151.39	129.96	184.91	186.44	171.14
FR SQUID	Q:	35357	32127	43415	44552	40149
	V:	914.88	1013.34	1550.55	1882.69	1413.81
	\$:	130.75	138.45	210.22	237.55	172.61
DRIED ITEM	Q:	1612	678	905	901	1542
	V:	26.43	17.05	46.05	49.68	62.94
	\$:	3.78	2.33	6.24	6.20	7.68
LIVE ITEMS	Q:	36	2	8	20	7
	V:	2.30	0.71	1.02	1.05	0.87
	\$:	0.33	0.10	0.14	0.13	0.11
CHILLED ITEMS	Q:	1240	506	997	997	895
	V:	56.20	21.80	50.10	56.78	52.31
	\$:	8.01	2.99	6.77	7.17	6.43
OTHERS	Q:	15980	15449	21639	29494	24157
	V:	336.85	349.73	522.54	723.09	594.48
	\$:	47.94	47.80	70.83	90.83	72.62
TOTAL	Q:	165773	152770	198484	207976	192505
	V:	6136.71	6022.83	8570.05	10018.38	8461.55
	\$:	876.47	821.83	1162.17	1263.71	1032.55

Q: Quantity in M T, V: Value in Rs. Crore, \$: US Dollar Million

This year's event has seen an increase in companies presenting aquaculture technologies and equipment and logistical, as well as high-volume buyers from the retail, food service and distribution taking part in the event's key buyer program.

Latest product trends, innovations and technologies to advance the seafood industry with sustainability, aquaculture, labour issues, artificial intelligence and traceability were some of the most prominent topics discussed at the event's three-day conference program.

The prestigious Seafood Excellence Global Awards recognized the best products represented at the Expo with French companies Parcs Saint Kerber and Algolesko winning the top prizes.

For the first time, the Expo hosted a reception and networking event "Connecting Women in Seafood", which provided

attendees a space to connect, share experiences and expand their professional network with a goal in mind: create a more inclusive and thriving seafood industry. The next Seafood Expo Global/Seafood Processing Global will take place in Barcelona, from 6th to 8th May 2025, at Fira de Barcelona's Gran Via venue.

Indian pavilion

The Indian pavilion was organized by the Marine Products Export Development Authority in booth no. 3I601, 3I801, 3J601 and 3J801 in Hall-03 with a space of 613 sq. m., along with 39 exporters as co-exhibitors. The concept of India pavilion was arranged with 34 stalls and 5 table spaces for the co-exhibitors and one stall for MPEDA. The list of co-exhibitors is given separately.

MPEDA was represented at the Seafood Expo Global by Dr. S. Kandan, Joint Director and Mr. Archiman Lahiri, Deputy Director.

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The MPEDA stall displayed seafood in two freezers and one dome chiller along with a cooking demonstration. The products collected from 29 exporters were exhibited during the show in the freezers and chillers. A diverse array of cultured and wild-caught shrimp products was showcased at the stall, including raw frozen items, individually quick-frozen products, breaded options, shrimp powder, and cooked products of various counts. Also, various product forms of squid, octopus, cuttlefish, lobster, fishes like Tilapia, Pomfret, Mackerel, Ribbonfish etc., were an added attraction in the Indian stall.

The visitors were given access to information on the Indian

seafood exporter directory, co-exhibitor guide, commercial fishes of India and seafood products through scanning of QR code, displayed prominently in the stall and all round the pavilion. For improved interaction with the visitors and to address their queries, interpreters proficient in Spanish, French and Chinese were engaged.

Ms. Prithika Rani M., IFS, Second Secretary, Embassy of India, Madrid visited the MPEDA pavilion and the co-exhibiting exporters, stalls in the Indian pavilion. She also had elaborate discussions with major Indian exporters participating in the event.

Deputed officers attended various queries raised by visitors

Booth / stalls

Sl. No	Company Name	Sl. No	Company Name
1	M/s. Monsoon Bounty Foods Mfg. Pvt. Ltd.	18	M/s. Noor Ice and Cold Storages Pvt. Ltd.
2	M/s. Seasaga Enterprises Pvt. Ltd.	19	M/s. NDM Seafood Processors & Exporters Pvt. Ltd.
3	M/s. Tolar Ocean Products Pvt. Ltd.	20	M/s. Kiefer Sea Foods
4	M/s. Asian Marine Foods	21	M/s. Nekkanti Sea Foods Ltd.
5	M/s. Everest Sea Foods Pvt. Ltd.	22	M/s. Castlerock Fisheries Pvt. Ltd.
6	M/s. Real Exports	23	M/s. Lifaa Seafood Exports
7	M/s. Jeelani Marine Products	24	M/s. Handy Waterbase India Pvt. Ltd.
8	M/s. Rupsha Fish Pvt. Ltd.	25	M/s. ITC Limited
9	M/s. Silver Sea food	26	M/s. Seacatch International (Forstar Group)
10	M/s. Karunya Marine Exports Pvt. Ltd.	27	M/s. Mindhola Foods
11	M/s. MegaaModa Pvt. Ltd.	28	M/s. Siddiq Seafood
12	M/s. Calcutta Seafoods Pvt. Ltd.	29	M/s. Magnum Seafoods Ltd.
13	M/s. Vasai Frozen Foods	30	M/s. Rizwan Ice & Cold Storage
14	M/s. VKM Foods Pvt. Ltd.	31	M/s. Goan Fresh Marine Exports Pvt. Ltd.
15	M/s. Sonia Marine Exports Pvt. Ltd.	32	M/s. Chitra Sea Foods Private Limited
16	M/s. Abad Overseas Pvt. Ltd.	33	M/s. KSA & Company
17	M/s. Albys Agro Pvt. Ltd.	34	M/s. Gadre Marine Exports Pvt. Ltd.

Table Space

Sl. No	Company Name	Sl. No	Company Name
1	M/s. Kings Infra Ventures	4	M/s. Grand Marine Foods
2	M/s. Seafood Innovations	5	M/s. Bhubaneshwari Seafoods Pvt. Ltd.
3	M/s. Hari Marine Pvt. Ltd.		

MARKETING NEWS



MPEDA stall



MPEDA officials with co-exhibitors



View of co-exhibitors' stall

on the availability and seasonality of various fish and fishery products from India. The trade enquiries received during the event are placed in the concerned section of this newsletter. A total of around 81 buyers visited the Indian pavilion.

Cooking demo

Live cooking demo of Indian seafood was arranged through Travel life events DMC,S.L. involving renowned and top rated chefs from Barcelona. Various dishes were prepared from shrimp, fishes, squid, cuttlefish etc. and were served to the prospective buyers and visitors as signature seafood dishes.

The cooking demonstration was a major attraction at the Indian pavilion, and drew a large crowd. It played a crucial role in generating fresh inquiries for products, particularly for Vannamei and Black Tiger shrimp produced in India.

SEG has offered an excellent networking platform to connect with existing and new buyers during the event. MPEDA's participation for the event along with Indian exporters showcased the variety and diversity of Indian seafood helping to create a brand image for Indian seafood products.



View of seafood items displayed

MARKETING NEWS



MPEDA officials interacting with visitors



Cooking demo at the MPEDA stall, featuring visitors sampling freshly prepared products



Seafood Expo Global 2024: Celebrating excellence with the Seafood Excellence Global Awards

The Seafood Excellence Global Awards recognizes the best seafood products at Seafood Expo Global/Seafood Processing Global annually. The awards feature prestigious grand prizes for the Best Retail Product and Best Hotel/Restaurant/Catering (HoReCa) product, recognizing excellence in these key segments of the industry.

The competition involves an online application, which will be reviewed by committee, and submission of samples/ packaging. Only top-tier products advance as the finalists.

Judges from various sectors evaluate products based on taste, packaging, convenience, originality, and market potential. Additional samples are requested for comprehensive judging. The Seafood Excellence Global Awards reception announces winners, and winning products are displayed at the expo's stand, enhancing industry visibility. Additionally, special awards are also conferred, contingent upon the discernment of the judges, to commend exemplary products in categories such as Innovation, Convenience, Retail Packaging, and Seafood Product Line.

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%

Finalist products of 2024

Sl. No	Product	Company	Description	
1	Icelandic Sardine Single Fillet Stewed, in Marinade	M/s. Isstormur ehf	Indulge in the savoury delight of Icelandic sardine single fillets, expertly stewed in a flavourful marinade.	
2	Wellington Salmon	M/s. Dalian Rich Enterprise Group Co. Ltd.	Wellington Salmon, a gourmet delight featuring succulent salmon enveloped in flaky pastry.	
3	S.L Royal Cocotte de Moules Recette Beurre, Ail et Persil	M/s. Lagumar Seas	Prepared with succulent mussels, rich butter, garlic, and parsley, delivering a luxurious and flavourful seafood.	

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Sl. No	Product	Company	Description	
4	A. Espersen Alaska Pollock Sweet & Sour Sauce Battered Rolls	M/s. A. Espersen A/S	Esperesen's Alaska Pollock Sweet & Sour Sauce Battered Rolls, featuring tender pollock fillets enveloped in a crispy, golden batter	
5	Shrimp Gyoza with Sweet Chili Sauce	M/s. East Coast Seafood	Fusion of tender shrimp encased in delicate dumpling wrappers, perfectly complemented by a tangy-sweet chili dipping sauce.	
6	S.L Crema de Bacalao con Pimientos	M/s. Lagumar Seas	A creamy blend of flavourful cod and roasted peppers, delivering a rich and savoury delight.	
7	Salmon Candy	M/s. Leroy Seafood Group ASA	Crafted from premium salmon fillets, each piece offers a harmonious blend of savoury richness.	
8	Signature Lobster Cakes	M/s. Phillips Foods Inc.	The Signature Lobster Cakes are crafted with premium lobster meat and a blend of savoury spices.	
9	Lucky Bag	M/s. Vinh Hoan Corporation	A curated selection of premium seafood offerings designed to surprise and delight. From succulent salmon fillets to tender shrimp and more.	
10	Lobster Roll Sliders with Lobster Butter	M/s. East Coast Seafood	A featuring succulent lobster meat nestled within buttery rolls, elevated with a decadent touch of lobster butter.	
11	Umami Paste	M/s. Globe Xplore	Umami Paste, created and launched in Britain last year by restaurateur and cookbook author Laura Santtini, contains a mix of 11 ingredients that possess high levels of umami, including tomato, garlic, anchovy, olives, porcini and parmesan.	

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Sl. No	Product	Company	Description	
12	Latitude 45- Smoked Salmon Candy	M/s. Multi X S.A	Smoked Salmon Candy, where succulent salmon is expertly smoked to perfection and transformed into delightful candy-like bites, offering a unique and indulgent seafood treat.	
13	Crispy Seaweed Sticks Lemon Flavour	M/s. ZALG	Zalg's Crispy Seaweed Sticks Lemon Flavour, where delicate seaweed is transformed into a crunchy snack infused with the refreshing citrusy taste of lemon.	
14	Protein Pho Fusion	M/s. Vinh Hoan Corporation	Blend of flavours with Vinh Hoan Corporation's Protein Pho Fusion, a harmonious fusion of traditional Vietnamese pho and protein-rich ingredients, offering a nutritious and satisfying meal that celebrates the essence of Vietnamese cuisine.	
15	Frozen Dumplings with White Fish, "Gyoza"	M/s. Vičiūnai Group	Frozen dumplings with white fish, reminiscent of the authentic Japanese "Gyoza" experience, offering a delectable blend of tender white fish encased in delicate dumpling wrappers, ready to be steamed, pan-fried, or boiled to perfection.	
16	Salmon Bites with Seaweed Tempura, 40%, VIČI "Fish Berry", 250	M/s. Vičiūnai Group	Fusion of flavours with Vičiūnai Group's Salmon bites with Seaweed Tempura, featuring a delightful blend of tender salmon and crispy seaweed tempura	
17	Hot Smoked Salmon Roll with Dried Tomatoes	M/s. Vičiūnai Group	Hot Smoked Salmon Roll with Dried Tomatoes, where succulent salmon is expertly smoked to perfection and paired with the sweet tanginess of sun-dried tomatoes, creating a culinary masterpiece	

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Sl. No	Product	Company	Description	
18	Cold Smoked, Marinated White leg Shrimps with Orange Spices	M/s. Vičiūnai Group	Marinated Whiteleg Shrimps with orange spices, where delicate whiteleg shrimps are infused with the zesty aroma of orange spices	
19	Surimi Sausage with Bacalao	M/s. Vičiūnai Group	Surimi Sausage with Bacalao, a delicious blend of savoury surimi and flavourful bacalao, creating a culinary delight	
20	Indian Creamy Korma	M/s. Vega Salmon A/S the SALMONCHEF®	Indian Creamy Korma, where premium salmon is infused with the rich and aromatic flavors of creamy korma spices	
21	Hot Smoked, Spanish	M/s. Vega Salmon A/S the SALMONCHEF®	Hot Smoked, Spanish Sweet Citrus, where succulent salmon meets the zesty sweetness of Spanish citrus	
22	Hot Smoked, Chinese 5-Spice	M/s. Vega Salmon A/S the SALMONCHEF®	The Premium salmon is delicately infused with aromatic Chinese spices and expertly hot smoked to perfection	
23	Baked Salmon with Roasted Coconut Flavour	M/s. Suempol Sp. z o.o.	Baked Salmon with Roasted Coconut Flavour, where tender salmon is infused with the irresistible aroma and crunch of roasted coconut	
24	Salmon Kofta	M/s. Suempol Sp. z o.o.	Salmon Kofta, crafted with premium salmon and aromatic spices, offering a tantalizing twist on a beloved classic dish	
25	Aldi Specially Selected Scottish Cooked Veuve Monsigny® Mussels	M/s. Scottish Shellfish Marketing Group	A premium seafood experience that marries the finest Scottish mussels with the renowned quality of Veuve Monsigny®	
26	UniFresco	M/s. Pacific Urchin Harvesters Association	A premium seafood offering meticulously sourced and expertly crafted to deliver the freshest and most delectable seafood experience	

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Sl. No	Product	Company	Description	
27	Oyster Trio Saint Kerber	M/s. PARCS SAINT KERBER	Savor the luxury of PARCS SAINT KERBER's Oyster Trio, a tantalizing selection showcasing the finest Flavors of the sea, curated for the most discerning palates	
28	Kalaneuvos Trout Strips in Cream-Honey Marinade 250g	M/s. Kalaneuvos Oy	Indulge in the exquisite taste of Kalaneuvos Trout Strips in Cream-Honey Marinade, a delectable blend of tender trout strips delicately infused with a creamy honey marinade	
29	TARAMA Premium	M/s. JC David	JC David's TARAMA Premium, a gourmet delicacy crafted with the finest ingredients, delivering an exquisite blend of rich flavors and creamy texture that elevates any culinary experience.	
30	Frozen Grated Potato Dumplings with Atlantic Salmon Stuffing "CEPELINAI"	M/s. ICECO Fish	Perfect blend of convenience and flavor with ICECO Fish's frozen grated Potato Dumplings filled with Atlantic Salmon, offering a delicious twist on the traditional "CEPELINAI" dish.	
31	Puff Pastry and Atlantic salmon Rolls with Spinach	M/s. ICECO Fish	ICECO Fish's Puff Pastry and Atlantic Salmon Rolls with Spinach, where flaky puff pastry embraces succulent Atlantic Salmon and tender spinach, creating a harmonious blend of flavors and textures.	
32	Flamed Salmon, Texas BBQ 140g	M/s. Hätälä Oy	Savor the smoky richness of Hätälä Oy's Flamed Salmon, Texas BBQ, offering a tantalizing fusion of flame-grilled goodness and bold Texas barbecue flavors.	

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Sl. No	Product	Company	Description	
33	Sofina Young's Gastro Thai Inspired Breaded Fish Cakes	M/s. Greenland Seafood Europe SAS	Sofina's Young's Gastro Thai Inspired Breaded Fish Cakes, blending authentic Thai spices with premium fish for a culinary adventure	
34	Sofina Young's Gastro Chilli, Lime & Ginger Breaded Fish Fillets	M/s. Greenland Seafood Europe SAS	Young's Gastro Chilli, Lime & Ginger Breaded Fish Fillets, a mouthwatering fusion of zesty lime, fiery chili, and aromatic ginger, perfectly complementing tender fish fillets for a culinary sensation.	
35	Fully Cooked Lemon Sourdough Crumbed Cod Goujon	M/s. Golden Fresh Sdn Bhd	Savor the tantalizing blend of flavors in fully cooked Lemon Sourdough Crumbed Cod Goujon, featuring succulent cod enveloped in a zesty lemon sourdough crust	
36	Frozen Half Shell Scallop without Roe	M/s. Freshpack	Indulge in the pure essence of the sea with Freshpack's Frozen Half Shell Scallop without roe, offering pristine scallop meat nestled within its own shell.	
37	En'joy Frozen Shrimp Gyoza	M/s. Freshpack	Delight in the exquisite flavors of Freshpack's En'joy Frozen Shrimp Gyoza, a perfect harmony of succulent shrimp encased in delicate gyoza wrappers, ready to serve	
38	Alder Smoked Rainbow Trout Fillet	M/s. LOHI ASC Finnforel Oy	The fillets are smoked using real alder wood, and are sustainably produced from eggs to packaging. They are also bone-free and ready to eat.	
39	Wakame Pickles	M/s. Algolesko	Algolesko's Wakame Pickles are made from sustainably harvested seaweed and transformed into a fresh, crunchy product with citrus, zest, salt, and vinegar.	
40	Rahbek Alaska Pollock Ratatouille Fish Rolls	M/s. A. Espersen A/S	Savor the culinary fusion of Rahbek Alaska Pollock Ratatouille Fish Rolls crafted by a tantalizing blend of succulent pollock and vibrant ratatouille flavors.	

MARKETING NEWS



Winners 2024

The 2024 winners were selected from a field of 40 finalists representing 15 countries around the globe and were announced at a special Seafood Excellence Global awards reception. Parcs Saint Kerber of France claimed the prestigious Best Retail Product award with their Oysters Trio Saint Kerber, while Algolesko, also from France, took home the grand prize for Best HORECA Product with their Wakame Pickles.

In addition to the grand prizes, four special awards were presented: Phillips Foods Inc. of the United States was awarded the Seafood Excellence Global special prize for Convenience for its Signature Lobster Cakes, Chile's

Multi X S. A., honoured for Retail Packaging with their Latitude 45 Smoked Salmon Candy Bites. The awards also recognized exceptional seafood innovation, with Lucky Bag from Vietnam's Vinh Hoan Corporation earning the award for Innovation, and Vega Salmon A/S of Denmark winning Best Seafood Product Line for their Salmon Chef series of hot smoked salmon in international flavours. These awards highlight the global creativity driving the seafood industry forward, showcasing the industry's most exciting new products and packaging designs.

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



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Virtual Buyer Seller Meeting with M/s. Nichiyo Co. Ltd., Tokyo, Japan

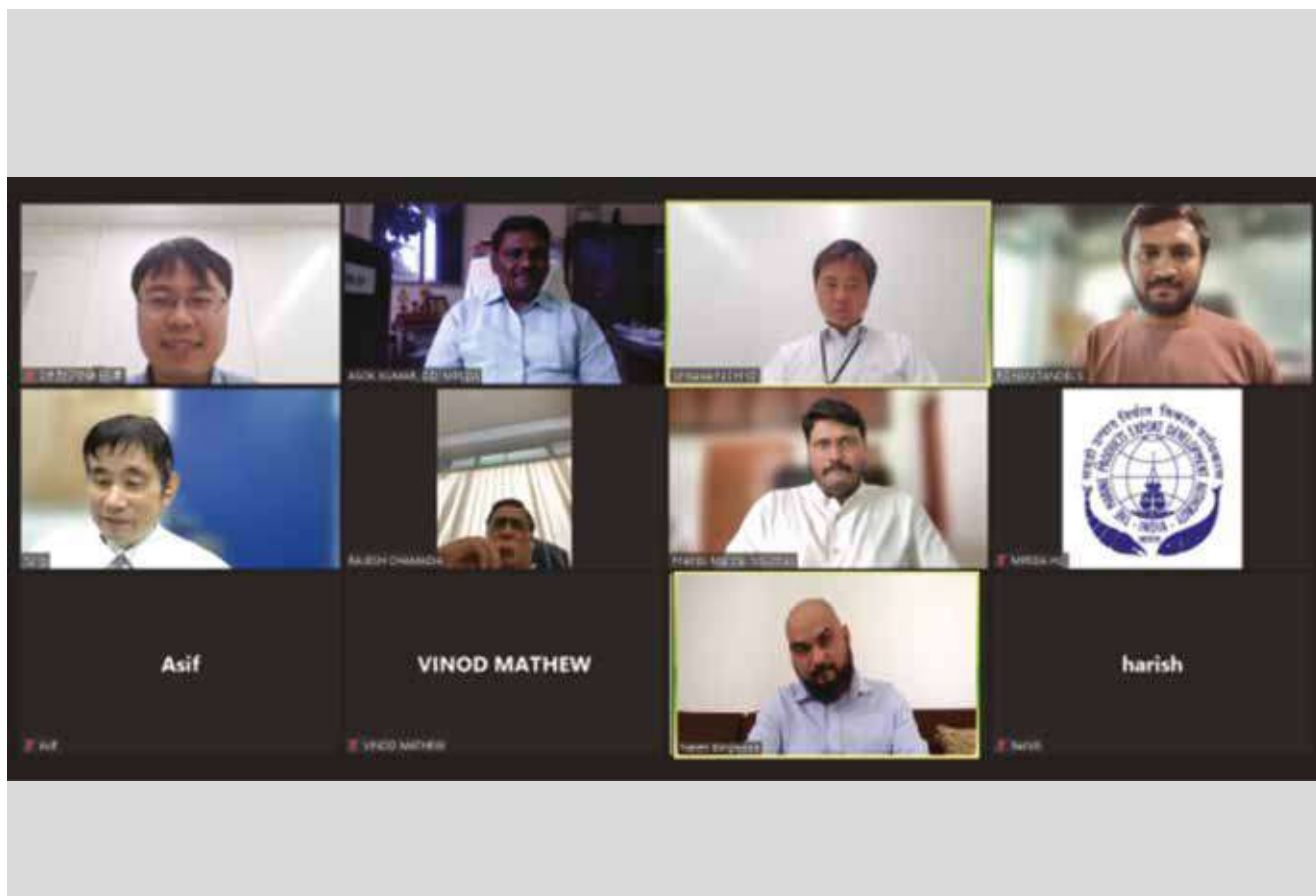
Japan has been a traditional market for Indian seafood exports historically. Export to Japan has shown a significant increase over the past years. The main export items from India are frozen shrimp and frozen surimi, contributing around 92% of India's total export to Japan. Other items exported are frozen fish, squid, cuttlefish, and fish meal products. Products under Chapter 3 contribute 98% of exports, and Chapter 16 contributes 2%. Among shrimps, vannamei is the major item of export, followed by Indian black tiger shrimp, Indian white shrimp, Mandapam flower shrimp, poovalan and karikadi etc. The export of Indian black tiger shrimp is also showing significant increase in quantity and unit value. It offers great potential for enhancing further exports because no across-the-border testing is carried out for black tiger shrimp.

MPEDA organized a Virtual Buyer Seller Meet (VBSM) on 9th April 2024 with M/s. Nichiyo Co. Ltd., Tokyo, represented by Mr. Makoto Ishikawa, Assistant General Manager and Mr. Haruyuki Nakajima, Assistant Section Manager. The company is looking for Vannamei and Black Tiger Shrimp.

Marine products have been the main strength of M/s. Nichiyo Co. Ltd. as many of those include processed goods such as

salmon and fish roe, flavored fried bean curd, and seafood products are used in convenience store o'bento lunch boxes, o'nigiri rice balls, and side dishes. In addition to convenience stores, they have customers in the restaurant sector as well as supermarkets. In recent years, they have striven to diversify and expand operations by exporting processed marine products produced by their group companies to countries such as America, Thailand, China and developing value-added products. They also sell products aimed at food production factories such as sanitary materials, office equipment, cooking utensils, auxiliary materials, and disaster prevention supplies.

Five Indian exporters participated in VBSM, which are M/s. KR Sea Foods, M/s. Friends Marine Industries, M/s. Orchid Marine Exporters Pvt. Ltd., M/s. Shree Datt Aquaculture Pvt. Ltd. and M/s. HN Indigo Pvt. Ltd.. The exporters made powerpoint presentations on their company and product profiles. The VBSM was moderated by Mr. S. Asok Kumar, Deputy Director (P & MP), MPEDA with the assistance from Mr. Jun Nakayama, Executive Assistant, MPEDA Trade Promotion Office, Tokyo.



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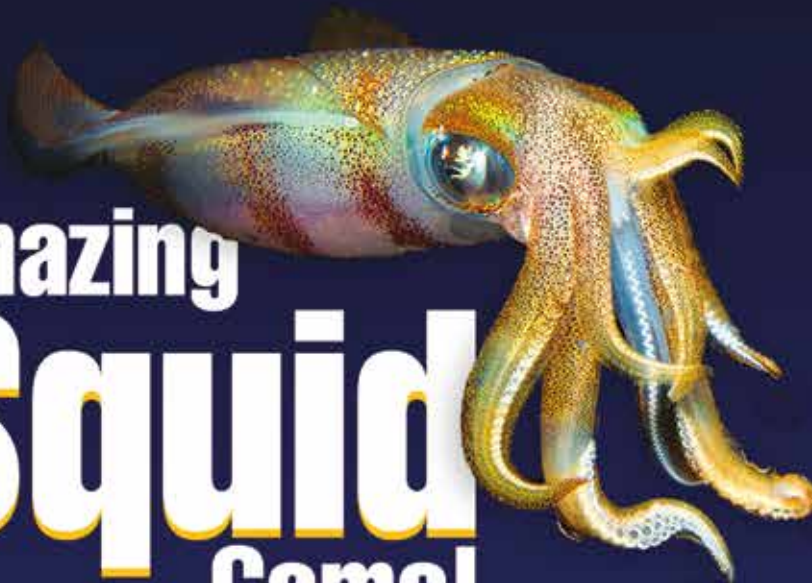
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Marine landings report February 2024

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

Data on marine landings are collected on a real-time basis from around 100 major fishing harbors and landing centers in India by MPEDA-NETFISH towards supporting traceability and catch certification systems. Information on incoming fishing vessels and approximate catch landed by these vessels, specific to each species, are tracked and recorded regularly through the Harbour Data Collectors stationed at the selected landing sites. This report presents highlights on the trends in marine landings observed during February 2024.

1. Observations on catch landings

In February 2024, the total marine catch landings reported from the 84 fish landing sites spread along the coastal states of India amounted to 53,395.11 tons. The pelagic finfishes dominated the catch with a substantial 52% share, accounting for 27,816.14 tons. Demersal finfishes followed at 27%, contributing 14,474.52 tons to the overall catch. The share of crustacean resources was 12%, with 6,328.74 tons of landings, and the molluscs contributed 9% share, with 4,775.71 tons (refer Fig. 1)

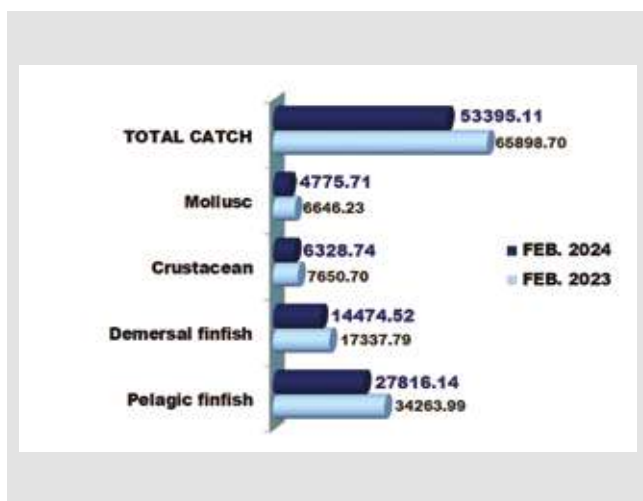


Fig. 1: Catch composition of marine landings (in tons) in February 2024

The marine landing during the month comprised 217 species, encompassing both marine finfishes and shellfishes. The five dominant species of the month were *Rastrelliger kanagurta*, *Lepturacanthus savala*, *Uroteuthis duvaucelii*, *Nemipterus japonicus* & *Sardinella longiceps* (refer Table 1).

On analysing the group-wise landing data, it is found that Mackerel, Ribbon fish, coastal shrimps, Croakers and Tunas have dominated the landing during the month (refer Fig. 2). These top five fishery items accounted for 51% of the total catch. Other notable landed items included Squid, Threadfin brems and Anchovies.

Sl. No.	Common name	Scientific name	Quantity (tons)
1	Indian mackerel	<i>Rastrelliger kanagurta</i>	9,419.03
2	Ribbon fish	<i>Lepturacanthus savala</i>	4,322.22
3	Indian squid	<i>Uroteuthis duvaucelii</i>	2,228.17
4	Japanese threadfin bream	<i>Nemipterus japonicus</i>	2,085.87
5	Indian oil sardine	<i>Sardinella longiceps</i>	1,741.52

Table 1: Top five species landed during February 2024

Mackerel, Ribbon fishes and Tunas dominated the pelagic finfish landings, while Croakers and Threadfin brems were the major demersal catches. Coastal shrimp constituted over 75% of the total crustacean harvest, with *Karikkadi* shrimp

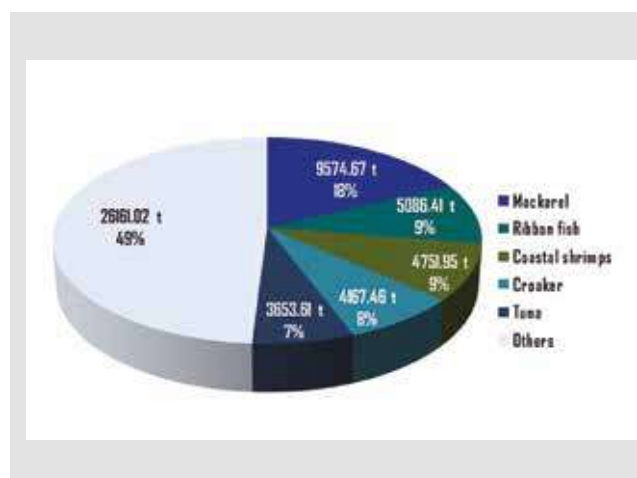


Fig. 2: Major five fishery items landed in February 2024

(*Parapenaeopsis styliifera*) being the most abundant species, with a landing of 13,98.79 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 February 2024 (refer Fig. 3). Maharashtra led with 12,284.91 tons, accounting for 23% of the total catch,

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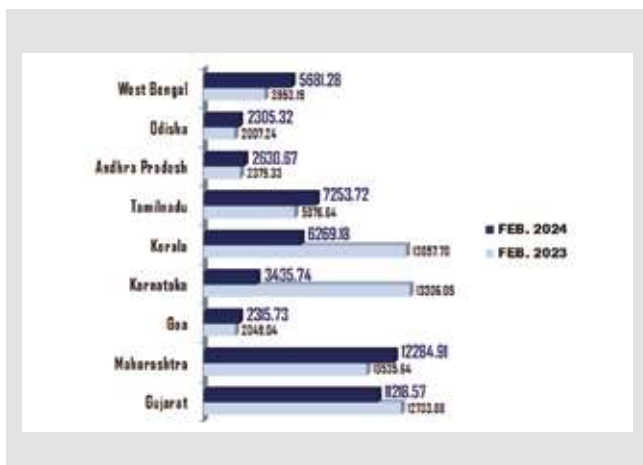


Fig. 3 : State-wise marine landings (in tons) in February 2024

followed by Gujarat with 11,218.57 tons (21%). Tamil Nadu in the south east coast stood at the third position with a contribution of 7,253.72 tons (14%) to the total catch. When compared to the previous year, the landings from Kerala and Karnataka have shown a sizable decline during the current period. Together, the western coastal states accounted for 67% of the total marine fish landings for the month.

Harbour-wise landings: Ratnagiri-Mirkarwada harbour in Maharashtra recorded the highest landings in February 2024 among the 84 selected fish landing sites. Table 2 lists the top ten harbours in terms of total catch quantity landed.

2. Observations on boat arrivals

The number of fishing vessel arrivals recorded from the 84 designated fish landing sites totaled 29,118. Kerala, Tamil Nadu and Gujarat have topped the list in terms of number of boat arrivals, with each reporting more than 5,800 nos. (refer Fig. 4). Considering the harbour-wise boat arrivals, the Mangrol and Veraval harbours in Gujarat were at the top, with 1,693 and 1,393 boat arrivals, respectively.

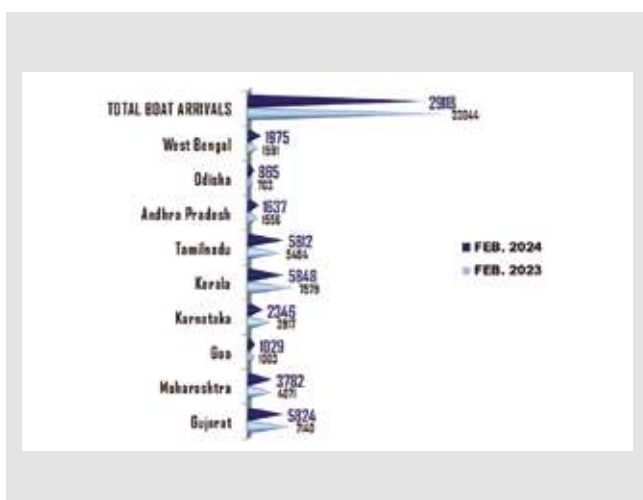


Fig. 4: State-wise boat arrivals (nos.) in February 2024

Sl. No.	Harbour	Quantity (tons)
1	Ratnagiri	5,917.55
2	New Ferry Wharf	3,079.42
3	Mangrol	3,022.17
4	Vanakbara	2,773.40
5	Porbandar	2,575.50
6	Veraval	2,559.64
7	Chennai	1,977.78
8	Petuaghat Deshapran	1,767.75
9	Munambam	1,577.15
10	Sasoon Dock	1,550.99

Table 2: Top ten harbours based on catch landings

Summary

During February 2024, marine landings and boat arrivals from the 84 major fish landing sites in India totaled 53,395.11 tons and 29,118 vessels, respectively. A decrease of about 13,000 tons in catch landings and 3,000 vessels in boat arrivals was noted compared to that of January 2024.

Pelagic finfish resources continued as the major contributor to the overall catch. The Indian mackerel (*Rastrelliger kanagurta*) remained as the most landed species of the month. Maharashtra continued in the top position in terms of catch landing, whereas Kerala remained in 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.



Monthly Outlook Forecast Report

Ritiesh Victor

Co-founder & Country Head – Myforexeye Fintech Pvt. Ltd.

Email-id: sales@myforexeye.com

USD INR

The USDINR pair continued to show signs of weakness in February month, as the pair started the month high at 83.015 and also made a weekly high of 83.115 in the middle of the month but ultimately fell to end the month weak at 82.9025. The USDINR is on a downtrend and is slowly changing its range.

The Indian Rupee received support from continuous dollar inflows, with foreign investors purchasing Indian bonds worth approximately \$2.4 billion in February. Rupee gains were capped by the continuous RBI which has an interest in protecting exporters from competition from its Asian peers that have been buying dollars and keeping the pair in a narrow range of less than 6-7paisa/day. In the first FOMC meeting of 2024 which took place from 30th Jan to 1st Feb, the Fed continued to maintain its interest rate for the 4th time consecutively adopting a hawkish stance stating that inflationary pressure continues to remain high and thus we need concrete evidence of it cooling off.

The probability of a rate cut in the June meeting currently stands at 52%. In the Oct-Dec quarter, the Indian economy expanded by 8.4%, surpassing expectations of 6.6%, driven by robust performances in the manufacturing and construction sectors. India maintains its position as the world's fastest-growing major economy. Also, Rupee is likely to have additional support from MSCI-rebalancing inflows as according to Nuvama Alternative & Quantitative Research, India is expected to see \$1.2 billion in passive inflows into equities after MSCI's quarterly review, which began on February 29. India's sustained positive growth relative to other Asian currencies and the dollar suggests a potential recovery for the Indian Rupee in 2024.

EUR USD

The EURUSD remains in a narrow range as the core PCE, the Federal Reserve's preferred measure of inflation, fell to 2.8% in January from 2.9% the previous month. A decrease in both headline and core CPI causes headwinds for the Euro as it encourages the European Central Bank (ECB) to abandon its restrictive policy, and the Governing Council could gradually prepare Euro Area households and businesses for lower interest rates as President Christine Lagarde insists that

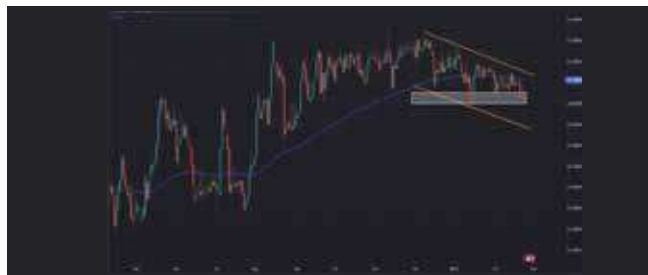
'the current disinflationary process is expected to continue. The euro has been quite volatile in February, and we believe that this will continue in March since there are many moving parts at the present that will continue to move the US dollar and the Euro in general. That being said, keep in mind that the Federal Reserve is expected to cut rates three times this year, so the US dollar may lose some strength, but at the same time, the European Central Bank is concerned about the German economy entering a recession, which would be very toxic for that economy and likely cause the ECB to cut rates as well. In other words, this market is expected to be loud as traders move back and forth.



In the early days of the month, EURUSD initiated trading at a monthly high of 1.0897. However, the daily candlestick chart paints a comprehensive picture favoring bearish sentiment over bullish strength. On the weekly chart, the pair took a strong support at the 50 Week-EMA (1.0800) in the initial days of the month, the pair tried to break below making a monthly low of 1.0694 but further bounced back proving a strong support at 1.08. 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 50-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 50, indicating a slight upward moment. 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 sell signal. Consequently, expectations align with the pair consolidating above 1.0750.

GBP USD

GBPUSD began the month positively, reaching a monthly peak of 1.2772 initially. However, these gains were swiftly reversed, and by the end of the month, the pair stood at 1.2643. The initial setback was triggered by robust US labor market data, with the Non-Farm Payroll (NFP) surpassing expectations by double. Subsequently, stabilizing comments from Bank of England (BOE) members helped mitigate steep losses. The BOE has maintained interest rates at nearly a 16-year high, and the persistent 4% inflation rate suggests a likelihood of the BOE maintaining the current rates.



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Nevertheless, the United Kingdom's two consecutive quarters of negative GDP growth, signaling a technical recession may exert pressure on the BOE's interest rate outlook. Looking ahead, the Pound might benefit from the expectation that the Bank of England (BoE) will reduce rates after the Federal Reserve. Investors are anticipating rate cuts in August and June for the BoE and Fed, respectively, narrowing the policy divergence. The Pound could attract more capital if the BoE sustains a hawkish stance for a more extended period than other central banks.

Sterling continued with its downward trend for the second consecutive month as it fell by 0.5% in February. The pair fell and made a 2-month low of 1.2518. The pair however recovered from the lows and reversed some of its losses and ended the month at 1.2624. On the weekly chart frame of the pair, the 200-week EMA serves as a resistance, impeding upward movement. The pair ended below the previous month's close, suggesting the downward pressure on the pair. Additionally, the MACD Indicator points to a bearish crossover that could portend a short-term decline in the pair. The next support level, the 50-week EMA (orange line), is visible if the pair breaks through the 1.2600 level, halting further declines.



JPY USD

The Japanese yen has depreciated against the US dollar, as USDJPY has surpassed 150. A Bank of Japan board member's call for policy adjustment, given inflation nearing the 2% target, is notable. The forthcoming pays talks, expected to conclude by March 13th, are pivotal for both markets and the central bank. Labor unions advocating substantial salary hikes align with employers' sympathy, considering inflation has consistently exceeded 2% for over a year. Favorable carry trade conditions emerge, with markets borrowing low-cost yen to invest in higher-yielding currencies, following the yen's rebound from late-2023 lows. However, a sustained yen recovery hinges on yield differentials shifting in its favor, unlikely until the Bank of Japan ends its negative interest rate policy, potentially in April. The yen's trajectory against the dollar depends on the BoJ's stance in the upcoming March meeting and US labor market data. Negative interest rates may persist until later in 2022, with April emerging as a potential turning point. A substantial yen recovery seems improbable before then.

The USDJPY trading month commenced at 146.86, reaching a monthly low of 145.89 on the first day. The pair found support at the 50-Week Exponential Moving Average (EMA), maintaining levels above 146 and extending the uptrend. Mid-month, it peaked at 150.88. Key support and resistance levels

are derived from the wicks of weekly candlesticks formed during the yen's ascent to 140 in November. Throughout the month, the yen faced pressure from robust US labor market data and the dovish stance of the Bank of Japan. Looking ahead, if the pair sustains levels above 150.50 in the upcoming week, further upward movement towards the 151.52-yen mark is likely. Buyers consistently exhibit interest in retracements at this level, indicating perceived value. During short-term pullbacks, support is evident at 147.88 yen, aligned with the 50-Week EMA, while significant support is observed below the 145-yen level. Momentum indicators endorse a sustained trend, with the pair oscillating within a range of 147- 150, supported by candlestick formations.



World global market outlook

Global equity markets closed February on a positive note, with major benchmarks rising up to 8.1% during the month. Asian markets, particularly China and Japan, led the surge, while the UK and Singapore markets ended in the red. China's Shanghai Composite Index saw an 8.1% jump, closing at 3015.17 on February 29. Japan's Nikkei 225 gained 7.9%, reaching 39,166.19 on the same date. India's BSE Sensex rose by 1% to close at 72,500.

In contrast, Singapore's Straits Times index slipped 0.4% to 3,141.85. In the U.S., the Dow Jones index increased by 2.1%, reaching 38,949.02, while the Nasdaq surged by 5.2% to settle at 15,947.7. The PCE data, the Federal Reserve's preferred inflation gauge, showed the smallest annual increase in inflation in nearly three years, keeping the possibility of a June interest rate cut on the table. Investors are confident in a mid-year rate cut as the economy remains resilient, prompting a fresh wave of cash into higher-risk assets.



Emerging-market stocks experienced their first outflow since November, down \$1 billion, driven by a \$1.6 billion shift out of China-exposed funds. In Europe, French consumer prices rose at a slower pace, slightly higher than forecasts, while in Spain, annual inflation dropped in line with expectations. U.S. Treasuries' yields fell, with the 10-year note at 4.248%, the 30-year bond at 4.375%, and the 2-year note at 4.6394%.



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MPEDA participates in the Seafood Task Force Summit in Mumbai



A view of the proceedings at STF Summit

On 29th April 2024, a Seafood Task Force Summit was held at The Leela Mumbai, where MPEDA was represented by Dr. M. Karthikeyan, Director, MPEDA. Mr. Subray Pavar, Assistant Director, MPEDA Regional Division, Mumbai, Mr. Santhosh Kadam and Dr. Girija Behere, NETFISH State Coordinators for Maharashtra were also present. Mr. Ken Kimble, Chairperson of the Seafood Task Force (STF), shared the organization's mission and vision, emphasizing its role as a global trade association dedicated to eliminating

forced labor and illegal fishing in shrimp and tuna supply chains. STF aims to improve transparency, oversight, and continuous improvement within the industry, with a focus on supporting small-scale actors and helping the broader sector access international markets.

Mr. Martin Thurley, Executive Director of STF, elaborated on the four key themes of the 4 C's model: Collaboration, Commitment, Confirmation, and Continuous Improvement. In his presentation, he covered a range of critical issues,



The Seafood Task Force is an initiative formed in 2014 for the seafood industry by the seafood industry. It is a non-profit, US trade association built on the necessity for better transparency and oversight in seafood supply chains. The Seafood Task Force was specifically formed to tackle the issues of social and environmental abuse in

global shrimp and tuna supply chains and help to restore global market confidence to trade. Their vision is to have seafood supply chains which are fully traceable, free from the risk of human rights violations and free from environmental degradation. The elected board of STF comprised of representatives from various industries such as MARS Petcare, Ahold Delhaize USA, Starkist, Charoen Pokphand Foods (CPF), COSTCO Wholesale, Marine Gold Products Ltd (MRG), Thai Union, Thai Royal Frozen Food (TRF), Walmart and Trimarine. Ken Kimble of COSTCO Wholesale is the Chairperson and Martin Thurley is the Executive Director of STF.



Dr. M. Karthikeyan, Director, MPEDA in the STF Summit

including child labour, restrictions on freedom of movement, verbal abuse, sexual harassment, forced overtime, absence of employment contracts, wages below the legal minimum, withholding of wages, lack of paid leave, excessive working hours, inadequate rest days, falsified attendance records etc.

Dr. M. Karthikeyan, Director, MPEDA provided a brief overview of the seafood sector in India. In his speech, he highlighted the role of government organizations, including MPEDA, EIC/EIA, and state governments, in the registration and approval processes for processing establishments, farms, hatcheries, feed mills, and fishing vessels. He also outlined the necessary documentation for registration, renewals, and approvals. Additionally, he discussed key aspects of the Indian seafood industry, including the workers' contract system, wage structures, issues related to child labor, and the overtime policies in place.

In addition to MPEDA, more than 100 participants from SEAI, seafood wholesalers & retailers, members from feed mills etc. attended the summit. Exporters including M/s. Avanti Frozen Foods, M/s. Devi Sea Foods, M/s. Devi Fisheries, M/s. Kader Exports, M/s. Penver Products, M/s. Nekkanti Sea Foods, and M/s. Sandhya Aqua Exports attended and sponsored the event. The programme concluded with a vote of thanks delivered by Mr. Martin.



Participants of the STF Summit



Empowering Chilka SC/ST Fishers: MPEDA-NETFISH initiatives for safety and sustainability in Chilka fishing



Participants in life jacket

In order to enhance the safety and well-being of Chilka fishers of SC/ST community, the MPEDA-NETFISH undertook a significant initiative during the year 2023-24. Through a series of 35, one-day training programs focused on "Biosecurity and Personal Hygiene aspects," a total of 1050 SC/ST fishers in the Chilka area were trained on safety and sustainability.

Mr. Archiman Lahari, Deputy Director, Dr. K. Gopal Anand, Assistant Director, Mr. Subhrakanta Mohapatra, State Coordinator, NETFISH, Odisha and Mr. Harekrushna Khataei, a resource person from the NGO Rangelata Peoples Rural Development Society (RPRDS) led the training programs

and delivered lectures on a comprehensive range of topics crucial for the fisher's livelihood and well-being.

The sessions delved into critical areas including food safety, sanitation, and hygiene practices both at the landing center and onboard fishing vessels. Practical insights were provided on the handling and sorting of catch, emphasizing the role of ice in maintaining freshness and reducing post-harvest losses. Additionally, the significance of cold chain in preserving fish quality, the importance of conservation and sustainable fishing practices, use of square mesh cod ends, reduction of plastic pollution, chlorination and disinfection of equipment/facilities etc. were also highlighted during the training.

Special emphasis was given on sea safety and navigation, essential for safeguarding fishermen against adverse weather conditions and unforeseen risks at sea. Through informative sessions, participants gained insights into navigation techniques and best practices for ensuring their safety during fishing trips.

In addition to knowledge dissemination, participants were provided with certificates and kits with caps, T-shirts, stationery etc. 1050 life jackets were also distributed.

In conclusion, MPEDA-NETFISH's initiative stands as a beacon of empowerment for Chilka SC/ST fishers, equipping them with the knowledge, resources, and support necessary to thrive in their livelihoods while ensuring their safety and well-being amidst the challenges of marine life.



Field demonstration of life jacket



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RAINBOW IN A BOWL

SEMAPROCHILODUS



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.

AQUACULTURE SCENE

Semaprochilodus is a freshwater South American fish belonging to the family Prochilodontidae. They are one of the most common and widespread shoaling fish found in South America. Though six species have been described, most of them are not in the aquarium trade as they are used as food fish in their native countries. They support important fisheries and they are the second most caught fish by weight in the Brazilian Amazon after *Brachyplatystoma vaillantii*. It makes a stunning addition to a community of larger fish. Of the six species, three are from the Amazon Basin, two from the Orinoco Basin and a single from the Maroni Basin. Depending on the species, they reach a maximum length of 27–54 cm. There are six species in the genus, *Semaprochilodus brama*, *S. insignis* (Kissing prochilodus), *S. kneri*, *S. laticeps*, *S. taeniurus* (Silver prochilodus) and *S. varii*.

S. insignis commonly known as the kissing prochilodus or flag-tailed prochilodus, is a native to central and western parts of the Amazon basin. They are migratory, moving in large groups into white water rivers to spawn, afterwards returning to black water and clear water rivers, as well as flooded forests. It is important in fisheries and sometimes seen in the aquarium trade, but they require a relatively large tank. It can reach a maximum standard length of 27 cm and weight of 560 g. It resembles the other members of the genus *Semaprochilodus*, where most species are silvery with orange-red fins and a striped tail. Adult *S. insignis* lack the dark flank spots that can be seen in adult *S. taeniurus*, but both species have these spots in juveniles.

S. taeniurus, popularly known as Flagtail Characin is from the central Amazon basin in Brazil. It migrates and spawns in the river channels but feeds mostly in the floodplains. It can also be found in floodplain lakes, known locally as “várzeas” and forest streams. *S. taeniurus* is also sold as the Silver Prochilodus or Fei Feng. It is commonly known as the Jaraqui in Brazil and is an interesting species both ecologically and biologically. Their maximum length is 30 cm, an adult specimen requires about 540 litre aquaria. Their water ideal parameters are temperature 23–29°C with pH ranging from 5.5 – 7.5 and hardness 1–20 dH. They are quite unfussy regarding decor, but to keep it in its natural surroundings a biotope setup would be very simple to arrange. Use a substrate of river sand and add a few driftwood branches and twisted roots. Algal growth should not be discouraged as the fish will graze on it. It's not the best choice for a planted tank, as it will devour any soft-leaved species and even less palatable vegetation will probably be picked at. Though omnivorous they are primarily herbivores. They will also accept most good quality dried foods and small frozen foods such as bloodworm. This striking characin grows to an impressive size and will require a spacious aquarium. Although it can be safely housed alongside other medium-sized fish species (eg., other characins of similar size, knife-fish, plecos, peaceful cichlids etc.), it can be rather antagonistic towards its own kind, so is best kept singly or



in a group of 6 or more so that any aggression is spread throughout the shoal. They are little sensitive, so it is vital that the aquarium is biologically mature and small partial water changes are carried out on a regular basis. Provide them with a sandy substrate, river rocks, and tangles of driftwood to hide amongst. Unfortunately, most plants will be eaten, as anything green and leafy tends to be regarded as food. However, some aquarists have reasonable success keeping them alongside Java fern or tough-leaved plants such as some of the larger *Anubias* species. Another option could be aquascaping with plastic or silk plants. Bright lighting is not usually a problem as these fish will happily browse on most types of algae. They are expert jumpers hence tight-fitting cover slides are essential.

They are omnivorous, but a large proportion of the diet should consist of vegetable matter. Larger specimens will eat krill, chopped prawns etc. It migrates twice a year. The first event is a spawning migration at the start of the wet season, when the fish move from nutrient-poor black and clear water tributaries and streams into the more turbulent white (silt-laden) waters near the heads of rivers to spawn. They may travel several hundred kilometres and can even be seen leaping through rapids in a similar fashion to salmon. Post-spawning the fertilised eggs drift downstream and into the nutrient rich floodplains. These act as the perfect “nurseries” for the fry to feed and grow. The adults meanwhile return to exactly the same flooded forest tributary from where they came to feed for the next 3–4 months. They then migrate again in the middle of the wet season, moving once more from the tributaries upstream into the nutrient-rich rivers, where they may enter many different tributaries. They continue this activity until the water level drops. When it rises once more the fish spawn again in the mouth of the tributary they are currently in. Interestingly it appears that older fish do not undertake these migrations, as reported by researchers. They did not suggest an age limit for migration but did note that non-migratory fish were much larger than the migrating individuals and tended to occur further up the tributaries. This species is distinguishable from the very similar *S. insignis* by the presence of dark spots on the sides that do not fade as the fish matures. Young *S. insignis* also exhibit these spots but they disappear with age.



Better Management Practices in scientific shrimp farming

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In the last issue we discussed the different types of soil, initial steps in pond preparation such as drying and ploughing. The remaining steps in pond preparation will be discussed in the current issue.

III. Lime application

Liming is the application of calcium and magnesium compounds to the soil to reduce soil acidity. Lime can be applied to the pond immediately after ploughing when the ponds are in a semi- moist condition. It is advised to use a soil pH meter in wet soil to test its pH. The pond bottom can be treated with quicklime/ agricultural lime/ dolomite. The level of lime application during pond preparation depends on the pH of the soil. The dosage of lime is given in table 1.



Fig. 1: Testing soil pH at farm site

- While applying lime, spread the lime all along the pond bottom and along the slopes of the pond bund.
- A large proportion of the lime needs to be applied along the feeding areas and on the wet portions of the pond.
- When applying lime farmers/workers should wear gloves, face masks and caps.
- If the soil pH is more than 7, there is no need for lime application.

Quality of liming materials

The quality of liming material is assessed mainly by two indicators – neutralizing value and particle size. Lime is usually a fine material and particle size is not often an issue. The neutralizing value is a measure of the amount of acid required to neutralize a given weight of liming material. Good quality calcium carbonate is used as the reference material and assigned a neutralizing value of 100 percent.

IV. Fertilization

Shrimp are benthic organisms and they browse the pond bottom. Pond bottom, which is rich in benthic biota, increases the growth and production of shrimps. Therefore, fertilization of the soil is very effective in enhancing biological productivity instead of water. Fertilization is normally done after 7-10 days of liming.

Fertilization will help to improve mineral content of the pond bottom, especially in ponds with low soil fertility as well as ponds which have been under continuous culture for many years. This will enhance the blooming of planktons (both phyto and zooplanktons). Plankton bloom is essential for successful shrimp culture. It shades the pond bottom and prevents the growth of benthic algae. Plankton blooms also act as a natural food source and provide a darker environment, which is ideal for the shrimps.

Before fertilization, concentration of total phosphorus, phosphates, nitrogen, nitrates and potassium, as well as total alkalinity and pH of source water shall be checked. The nature of the pond bottom soil (sandy/light or clayey/heavier) and its chemical characteristics such as pH and concentrations of calcium and primary nutrients shall also be checked.

Fertilization is required in the following cases:

- If the pond is new and no aquaculture happened so far;
- if the water supply is poor in nutrients (see table 2)
- if the bottom soil is sandy rather than clayey.

Table 1 : Dosage of lime to increase the soil pH to 7

Soil pH	Quantity of lime material (tons/Ha)		
	Dolomite	Agricultural lime	Quick lime
6 to 6.5	5.7 to 2.8	5.5 to 2.8	4.6 to 2.3
5.5 to 6.0	8.5 to 5.7	8.3 to 5.5	6.9 to 4.6
5.0 to 5.5	11.3 to 8.5	11.1 to 8.3	9.2 to 6.2
4.5 to 5.0	14.2 to 11.3	13.9 to 11.1	11.5 to 9.2
4.0 to 4.5	17.0 to 14.2	16.6 to 13.9	13.8 to 11.5

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Table 2: Chemical qualities of a poor water using for Shrimp farming

Phosphates	<0.1mg/l
Nitrates	<2mg/l
Potassium	<0.1mg/l
Calcium and Magnesium	<15 mg/l

Do not fertilize a pond if:

- production does not depend on the use of natural food;
- the exchange rate of the water is excessive;
- there is too much emergent or other aquatic vegetation;
- the water is too muddy or dark-coloured, and transparency is limited;
- the plankton turbidity is too high.

Types of fertilizers

a. Inorganic fertilizers

An agricultural inorganic fertilizer may contain several types of nutrients:

- Primary nutrients: Nitrogen (N), Phosphorus (P) and Potassium (K);
- Secondary nutrients: Calcium, Magnesium and Sulphur;
- Trace nutrients in very small quantities, such as Manganese, Zinc, Copper and Iron.

However, the fertilizers are named only according to the primary nutrients they contain. Fertilizers which contain only one or sometimes two primary nutrients retain their



Fig. 2: Broadcasting dolomite in a shrimp pond

chemical name such as Superphosphate (P) or Ammonium phosphate (N + P). Those with two or three primary nutrients, known as mixed fertilizers, are referred to by their NPK grade, that is, their percentages, as weight, of the three primary nutrients;

- Nitrogen N, as pure Nitrogen;
- Phosphorus P, as the equivalent in Phosphoric acid P_2O_5 ;
- Potassium K, as the equivalent in potash K_2O

The kind and amount of inorganic fertilizer to use can vary from one pond to another. It is therefore not possible to recommend any specific mixture or dosage which would give the best results in all locations. However, table 4 summarizes points to consider for further guidance.

Concentration of primary nutrients in common inorganic fertilizers (in percentage, by weight)

Fertilize	Phosphorus		Nitrogen (N)	Potassium		Calcium present	Water solubility
	eq. P_2O_5	Phosphorus (P)		eq. K_2O	Potassium (K)		
Phosphate							
Superphosphate	14-20	6.2-8.8	-	-	Yes	High (85%)	
Triple superphosphate	44-54	19.4-23.8	-	-	-	Yes	High (85%)
Nitrogen							
Ammonium nitrate	-	-	33-35	-	-	-	High
Ammonium sulphate	-	-	20-22	-	-	-	High
Ammonium phosphate	20-48	8.8-21.1	11-16	-	-	-	High
Urea	-	-	42-47	-	-	-	High
Potassium							
Potassium nitrate	-	-	13-14	44-46	36.5-38.2	-	High
Potassium sulphate	-	-	-	45-54	37.4-44.8	-	High
Muriate of potash	-	-	-	50-62	41.5-51.5	-	High

- ***Phosphorus content should be multiplied with 2.29 to obtain P_2O_5 equivalence*
- ***Potassium content should be multiplied by 1.2 to obtain K_2O equivalence*

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Table 4: Criteria for the use of inorganic fertilizers

	Phosphate fertilizers	Nitrogen fertilizers	Potassium fertilizers
Water quality: desirable concentrations for good algal production:	Phosphates	Nitrates	Potassium
	> 0.2 mg/l	> 2 mg/l	> 1 mg/l
	Total P > 0.4 mg/l	Total N > 1.5-3 mg/l	-
Best P:N ratio	Enough total P present for total N to be used: P:N = 1:4 to 1:8		-
Typical amount, per hectare, for one production cycle	30-60 kg eq. P_2O_5	40-100 kg N (check P:N ratio)	35 kg K_2O to 60-80 kg in peaty soil

a. Organic fertilizers

Organic fertilizers are often used in shrimp ponds and can include compost, rice bran etc. They are low cost, decompose slowly, and provide nutrients other than nitrogen and phosphorus. Organic fertilizers can also help to condition the soil. The rate of application of organic fertilizers in shrimp ponds can range from 500 to 2,000 kg/Ha. While applying, spread the manure all along the pond bottom. For biosecurity and contamination reasons, it is strictly advised to avoid the usage of poultry manure, raw cow dung, sewage etc. in aquaculture ponds.

V. Water screening and disinfection

Water screening is very important in keeping the disease carriers away. If good water screening is followed, the use of disinfectants can be avoided or minimised

- Use of the reservoir is recommended in 3:1 ratio (pond area: reservoir area).
- Water pumping must start not more than 20 days before the stocking date and the pond should be filled with water within 4 days.
- After filling the pond, hold water for 7 to 10 days before stocking the seeds.
- At the time of pumping, screen the water with 3 levels of twin screens.
 - i. The foot valve should be placed in bamboo basket or metal cage and it should be covered with 50 micron mesh to prevent large animals getting into inlet mesh.
 - ii. Tie filter nets at the delivery end of the pipe and it should be supported properly.
 - iii. Provide additional two layers of 80 mesh hapa below the inlet.
- Depending on the pumping capacity, increase the length/ surface area of the filter nets.
- Every day the meshes should be properly washed, and the waste should be disposed of properly. Meshes should not be washed in the rearing pond.
- After washing, dry the filter nets and they should be

checked thoroughly for any damage. Damaged mesh may be replaced with new ones.

- Always keep extra filter nets ready at farm sites.
- Keep the feeder canal clean.
- The filter nets must be maintained throughout the crop.
- The most effective way of preventing the entry of disease organisms via the water supply is disinfection.
- The disinfectant can be applied to water held in a reservoir or done directly in recently filled ponds.
- A variety of disinfectants such as Calcium hypochlorite, Chloramine T, Potassium permanganate, Copper sulfate, Hydrogen peroxide, Iodine compounds, Benzalkonium chloride and Glutaraldehyde are widely used to disinfect pond water.
- Among these, the most effective and economical is Calcium hypochlorite (with active chlorine content 65%) at a concentration of 30 to 40 mg/L.



Fig. 3: Screening the inlet water for the vectors

Do not use pesticides:

- Do not use pesticides to disinfect or kill fish, shrimp and crabs in the pond.

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- Pesticides will get absorbed in the muscles of shrimps / fish and can cause health problems for the consumers.
- Pesticide contaminated shrimps / fish are banned in the international markets due to serious health hazards, and hence will lead to consignment rejections and economic loss.
- If necessary, as mentioned above, use tea seed cake @ 10 ppm (50 kg/ha at 0.5 m water depth) to kill unwanted fish in the pond.

VI. Water fertilization

- Make sure the pond is filled with a minimum of 1.2 m of water at the centre part of the pond prior to stocking seed.
- Normally bloom develops in fertilized ponds one week after filling the water. .
- If the colour of the pond water still appears clear, take any one or combination of the following procedures as per the suitability of the field conditions:
 - a) Carry out chain dragging once a week which also helps in stabilizing the plankton bloom.
 - The chain used for dragging should be pond specific.
 - If the chain is a common one, it should be disinfected with 50 ppm chlorine (65% active chlorine) after use in each pond.
 - After disinfection it should be sun dried.
 - After chain dragging, apply fermentation juice with proper aeration.
 - b) Add 200 kg of Dolomite per Ha during sunny days.
 - c) Apply 2 days' old fermented mixture of rice bran, jaggery and good quality brewer's yeast @ of 25kg+10kg+0.25 kg/ha for three days during the morning hours. Spread the fermented mixture across the pond using a floating device.

When the colour of the water is green/yellowing green, check the water for the presence of zooplankton and if the plankton is available, the pond is ready for stocking.

If there are benthic or floating algae in the pond, remove them. The best approach is manual removal.

- The workers should wash their hands and feet in 50 ppm Chlorine solution before and after the removal of the benthic/ floating algae.
- After disinfection with Chlorine, wash the hands and feet thoroughly in freshwater.
- While doing the work, avoid turbidity of the pond water as much as possible.
- Use floating platforms to move inside the pond. Avoid stepping down to the pond water

VII. Stabilization of the plankton bloom

- Do not heavily fertilize the water to get dark green water. It will reduce the oxygen in water during night time, thus



Fig. 4: Application of organic fertiliser for blooming of algae

suffocating the shrimps. It is one of the reasons for the lower survival rate of shrimp seeds. Overdose of fertilizers also promote overgrowth of filamentous algae, which may later affect normal shrimp growth.

- During the first month of culture, whenever the water colour intensity reduces (Secchi disc reading of more than 50 cm), add fermented mixture of rice bran, jaggery and yeast @ of 25kg+10kg+0.25 kg/ha.
- Do not carry out chain dragging from the day of seed stocking until 45 DOC.
- After 45 DOC follow chain dragging of the entire pond in a phased manner i.e. 1/4th of the pond in one day. For every day's dragging, it will be ideal to follow a pattern of English letter "L", so that the chain dragging in a pond can be completed within 3-4 days. It is ideal to do chain dragging once in two weeks' interval.
- Wherever possible run the aerators for two hours every day.



Fig. 5: Farmers performing chain dragging for stabilizing plankton blooms

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Smart shrimp farming in circular ponds

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The Asian Institute of Technology, Bangkok in association with Vannamei 101 & AquaMina organized a training programme on smart shrimp farming in circular ponds in Vietnam from 18th to 23rd March 2024. The training included visits to shrimp farms in different provinces of the country and participation in the Vietshrimp International Aquaculture fair 2024.



Visit to Growmax companys' farmers farm

Introduction to circular tanks

Circular, 100 metric ton tanks have been in use worldwide as 30-day nurseries for many years. Vietnam has advanced and started adopting culture techniques to use circular tanks as grow out tanks since 2017. Through trial and error and refinement of construction techniques, circular tanks with centre drains have become popular, as the Generation 4 model culture system.

Multi-phase intensive farming model in Vietnam has led to numerous factories producing the construction materials to assemble above-ground round-tanks of various sizes. The concept of circular tanks has been adopted both by backyard farms and corporate farms in Vietnam.

The circular ponds and tank model have become popular in Vietnam for shrimp culture due to the following advantages:

- High productivity and large shrimp sizes in a small footprint
- Efficient energy use to circulate water
- Use existing traditional ponds as reservoirs (recirculation option)
- Multi-phase system; more harvests per year
- More control, less disease risk, more predictable production
- Easier to cover the tanks with shade netting material for algae control.

Multi-Phase Management

Many round-tank farmers operate a two or three-phase grow-out cycle with a nursery phase of 30 days (Indoor model) with a stocking density of 5000 animals/m² and then either grow out phase at around 60 days or two phases each of around 30 days of culture, a preparatory phase (Outdoor model) with stocking density of 1000 animals/m² and grow out phase with stocking density of 200-250 animals/m². A two or three phase grow-out cycle provides 3 to 5 crop harvests per year with shorter grow-out periods per phase. Final harvest size would be in the 25 to 40 g range.



High density indoor grow out unit of Viet Uc

Characteristics of circular tank model for intensive shrimp culture

Tank size range (above ground)	200-800 sq. m. (16 to 32 diameter)
Multi-phase	2 to 3 phases per cycle
Cycles per year (harvest)	3 to 4 cycles per year
Intensive or super intensive	Stocking density : 150 to 400 / sq. m.
Biomass	4 to 6 kg/sq. m.
Average body weight of shrimp	30 grams in 100 days
Ideal for small and large farms	Farms with 2 to 500+ round tanks
FCR	0.9 – 1.2
ADG	0.4 – 0.5

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MPEDA officials at an intensive shrimp farm using circular tanks

The suggested proportion for nursery to grow-out tank area is approximately 1:4. Most typical size of nursery and grow-out tanks used in Vietnam are 100 m² and 500 m² round tanks, respectively. However, some farms are experimenting with round tanks in the 800 to 1,200 m² range. With stocking densities ranging from 200 to 400 pieces per m² a system of water maturation is being applied in the circular tank systems where the water is matured with the removal of floating solid particulate waste by raceway systems using floating nets. The floating net also helps with biofilm formation which helps in the removal of ammonia.

High performance genetics and post-larvae quality

Securing a steady supply of disease-free and healthy post-larvae is paramount for the financial success of this intensive round-tank farming model.

Design, construction and operation of circular tanks

In the Vietnamese model of circular tanks which currently rely on water exchange and not recirculation, a good farm shall have a dedicated area for proper water storage and water treatment system.

A typical design consists of a sedimentation pond to which intake water is normally pumped for initial settling of sediments. From the settling reservoir, water is pumped to a smaller 2,000 m² pond or canal with a series of partitions or baffles to further facilitate settling of suspended solids. Then water is made to overflow to a 2,000 m² reservoir pond lined with HDPE. The effluent overflows or is pumped into a lined, chlorination reservoir of 1,000 m².

After the chlorine is neutralized (usually 24 hours or less using a paddlewheel), the treated water is pumped to a conditioning reservoir and available for the round-tank module.

There are different modes/materials used for construction

of circular tanks like, galvanized post and pipe construction, fiberglass composite panels reinforced with galvanized steel pipes embedded in the fiberglass etc.

As a general practice, to reduce light intensity and to reduce algal blooms 50-100% coverage with shade netting is used. Tanks covered inside of a greenhouse structure are also used.

Equipment which are part of grow out tanks include paddle wheels, blowers and diffusers, pumps, automatic feeders and center drain. Blowers and diffusers are to provide oxygen (> 5.0 ppm) and paddlewheels to create water current and collection of solid waste in the center of the tanks. For a 500 sq. m. round tank, a 5 HP Blower, 160 diffusers (@ 3 nos. per sq. m.) and two nos. of 3 HP paddle wheel aerators would be sufficient.

Three hours after each feeding, the aerators are turned on for 10-60 minutes and diffusers are turned off for faster collection of sediments towards the centre drain. The waste is removed through siphoning once daily from the 5th day of culture. Siphoning is done twice daily when DOC is 25 and above.

Below table shows the water exchange recommended based on days of culture

DOC	% exchange per day	Carrying capacity	Weight (gm)
1-25	5-30	2 kg/m ²	0.75-1.0
25-50	20-30	3.6 kg/m ²	3-8
50-100	30-50	4.0 + kg/m ²	16-30

The success mantra for intensive culture is a combination of round tanks, multi-phase approach, water management and good genetics. Compared to the semi-intensive mode of culture in earthen ponds with an average production of 10 MT/Ha/year from two cycles, Generation 4 model can give a yield of 150 MT/ha/year from three cycles.

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Details of SPF *P. vannamei* brooders imported & quarantined at AQF during March 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	Royal Hatcheries - I	Tamil Nadu	SyAqua Americas Inc, Florida	01.03.24	250	250	500
2	Sun Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	01.03.24	250	250	500
3	B Tech Hatcheries	Andhra Pradesh	SIS, Florida	03.03.24	500	500	1000
4	Shilpa Hatcheries LLP	Andhra Pradesh	SIS, Florida	03.03.24	250	250	500
5	Fedora Sea Foods Pvt. Ltd	Andhra Pradesh	SIS, Florida	06.03.24	200	200	400
6	Snehitha Hatcheries - Unit II	Andhra Pradesh	SIS, Florida	06.03.24	300	300	600
7	Balaji Aqua & Aqro Products Pvt. Ltd	Andhra Pradesh	SIS, Florida	08.03.24	500	500	1000
8	Sapthagiri Hatcheries - Unit II	Andhra Pradesh	SyAqua Americas Inc, Florida	10.03.24	200	200	400
9	Shree Kanak Matsya Hatcheries	Odisha	SIS, Florida	10.03.24	250	250	500
10	Sri Mahalakshmi Hatcheries - Nellore	Andhra Pradesh	SyAqua Americas Inc, Florida	10.03.24	300	300	600
11	Seven Staar Aquatech	Tamil Nadu	SIS, Florida	13.03.24	200	200	400
12	Ananda Foods	Andhra Pradesh	SIS, Florida	13.03.24	240	240	480
13	Blue Bay Culture	Tamil Nadu	Kona Bay, Hawaii	15.03.24	222	222	444
14	Shilpa Hatcheries LLP	Andhra Pradesh	SyAqua Americas Inc, Florida	15.03.24	300	300	600
15	BMR Exports - Tindivanam	Tamil Nadu	SyAqua Americas Inc, Florida	15.03.24	500	500	1000
16	Avanti Feeds Unit I	Andhra Pradesh	SIS, Florida	16.03.24	300	300	600
17	Sreevalli Hatcheries	Andhra Pradesh	SIS, Florida	20.03.24	300	300	600
18	Ravi Hatcheries	Andhra Pradesh	SIS, Florida	21.03.24	300	300	600
19	Golden Marine Harvest Unit-IV	Tamil Nadu	SyAqua Americas Inc, Florida	22.03.24	300	300	600
20	Empire Marine Harvest	Tamil Nadu	SyAqua Americas Inc, Florida	22.03.24	200	200	400
21	Sarada Hatcheries - Unit I	Andhra Pradesh	SyAqua Americas Inc, Florida	22.03.24	200	200	400
22	Sheng Long Bio Tech (India) Pvt. Ltd	Tamil Nadu	SIS, Florida	24.03.24	300	300	600
23	KPR Hatchery	Andhra Pradesh	SIS, Florida	27.03.24	300	300	600
24	Lotus Sea Farms	Tamil Nadu	SIS, Florida	28.03.24	300	300	600
25	Meenakshi Hatcheries Pvt. Ltd	Andhra Pradesh	SIS, Florida	28.03.24	200	200	400
26	Meenakshi Hatcheries - Vizag	Andhra Pradesh	SIS, Florida	28.03.24	200	200	400
27	Golden Marine Harvest Unit-III	Tamil Nadu	SIS, Florida	30.03.24	400	400	800
28	Prince Aqua Pvt. Ltd	Andhra Pradesh	SIS, Florida	30.03.24	400	400	800
	Total				8162	8162	16324

AQUACULTURE SCENE

Details of the SPF *P. monodon* brooders imported & quarantined at AQF during March 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	Unibio (India) Hatcheries Pvt. Ltd	Tamil Nadu	Aquaculture De La Mahajambal; Madagascar	05.03.24	110	112	222
	Total				110	112	222

Details of SPF *P. vannamei* brooders imported & quarantined at AQF during April 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	Srinivasa Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	01.04.24	200	200	400
2	Vaisakhi Bio-Marine Pvt. Ltd - Unit IV	Tamil Nadu	SyAqua Americas Inc, Florida	01.04.24	500	500	1000
3	Srinidhi Biotechnologies	Andhra Pradesh	SyAqua Americas Inc, Florida	05.04.24	300	300	600
4	Gayathri Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	05.04.24	400	400	800
5	BKMN Aqua	Andhra Pradesh	SIS, Hawaii	08.04.24	300	300	600
6	Anjaneya Marine Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	08.04.24	300	300	600
7	Sri Manjunatha Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	08.04.24	400	400	800
8	Seven Staar Hatchery	Tamil Nadu	SyAqua Americas Inc, Florida	12.04.24	200	200	400
9	Fedora Sea Foods Pvt. Ltd	Andhra Pradesh	SyAqua Americas Inc, Florida	12.04.24	200	200	400
10	Royal Hatcheries	Tamil Nadu	SIS, Florida	14.04.24	300	300	600
11	Sree Kamadhenu Aquatech Pvt. Ltd (Prakasam)	Andhra Pradesh	SIS, Florida	19.04.24	300	300	600
12	Raj Hatcheries Madras Pvt. Ltd	Tamil Nadu	SIS, Florida	24.04.24	250	250	500
13	Sree Dattareya Hatcheries	Andhra Pradesh	SIS, Florida	24.04.24	300	300	600
14	Sapthagiri Hatcheries - Anakapalli	Andhra Pradesh	SIS, Florida	26.04.24	400	400	800
15	Sai Balaji Hatcheries	Andhra Pradesh	SIS, Florida	26.04.24	300	300	600
16	Sri Srinivasa Hatcheries	Andhra Pradesh	SyAqua Americas Inc, Florida	26.04.24	300	300	600
17	Aquatic Farms Ltd	Odisha	Kona Bay, Hawaii	28.04.24	300	300	600
	Total				5250	5250	10500

Breakthrough achieved for golden trevally farming



Researchers in India have successfully achieved captive breeding and larval rearing of golden trevally - a high value marine species - following five years of research.

In a breakthrough development for the aquaculture industry, researchers from India's Central Marine Fisheries Research Institute (CMFRI) have successfully developed seed production technology for golden trevally (*Gnathanodon speciosus*), a high value marine fish.

Golden trevally is a reef-associated fish, commonly living alongside larger animals such as skates, sharks, and groupers. The fish shows strong potential for aquaculture, boasting fast growth rates, high meat quality, and significant market demand for both consumption and ornamental purposes. The farm-gate value for golden trevally can be up to Rs. 500 per kg, whilst individual fish can be sold for up to Rs. 250 for ornamental purposes.

The researchers at CMFRI's Visakhapatnam Regional Centre achieved successful captive breeding and larval rearing of the fish after five years of research, and it is hoped that this

major development will open up a new avenue for seafood production, boosting India's aquaculture industry.

Additionally, the success of farming for the species could reduce harvest pressure currently exerted on wild stocks. Golden trevally landings reported by the Indian fisheries industry have been in significant decline over recent years, declining from 1106 tonnes in 2019 to 375 tonnes in 2023 - a 66 percent decrease in only 5 years.

"This is a significant milestone in Indian mariculture," said Dr A Gopalakrishnan, director of the CMFRI, in a press announcement of the breakthrough.

"Golden trevally is an ideal candidate for sea farming due to its desirable qualities. Given the declining trend of its landings, the success in captive breeding of this fish has greater significance as it will offer opportunities for sustainable fish farming through mariculture practices including sea cage farming. The technology will also contribute to wild stock restoration efforts through the sea-ranching initiative," he explained.

thefishsite.com

TRADE ENQUIRY

Seafood Expo Global 2024, Spain

SHRIMP

1	Dhr. Y. Hong Chairman JFOODS. Bv Zeewinde 3-11, P.c:9738AM Groningen, The Netherlands Ph.: +31 (0)652157978 Email: james.hong@hipholding.nl <i>Shrimp</i>	2	Tejas Patel The Cray 86 Great Eastern Hwy, Belmont WA 6104 Australia Ph.: +61 04 30926590 Email: bthecraybelmont@gmail.com Web: thecray.com.au <i>Shrimp</i>
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5	Artur Voskanyan Founding Director Lider Food Import LLC Ph.: +37493888885 Email: liderfood.import@gmail.com <i>L.vannamei, Black Tiger Shrimp</i>	6	Manuel Olea Import Products of India Spain Ph.: +34 629561631 Email: manuel@frimapesca.com <i>Shrimp</i>
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9	Irshad Naina Commercial Director Oceanbrook international FZE LLC Po Box:234778 3606, 26 th floor The Citadel Tower Business bay Dubai, UAE Ph.: +97 1502718578 Email: irshad@oceanbrook.ae <i>Shrimp</i>	10	Sonja Mentrup Head of Purchase Seafood T & R Global Food GmbH & Co.KG Heekweg 15.48161 Munster Germany Ph.: +49 (0) 251 384235-19 Email: sonja.mentrup@global-food.de Web: sonja.mentrup@global-food.de <i>Shrimp</i>

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29	Francisco Schulte Import Director Golden Foods Alimentos Avenida Das Americas 3.500, Bloco 1, Sala 613 Barra Da Tijuca – RJ, Brazil Cep.: 22640-102 Ph.: +55 21 9 8118-7521 Mob.: +55 21 3550-0760 Email: Francisco@goldenfoods.com.br <i>Shrimp</i>	30	Ekaterina Saltykova Head of Purchasing Department Lucky Fish Fish & Seafood Russia Mob.: +7 921 9891590 Email: saltykova@lfish.ru Email: salekate82@gmail.com Skype: salekate WeChat: E03032008 <i>Shrimp</i>

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43	Chen Su Shuan President Master Group Japan Saigon Marine Products Co. Ltd. D25-02 Green Valley, Tan Phong, Phu My Hung,District 7,HCM city, Vietnam Ph.: +84 092 410 2805 Email: nana.chen.mastergroup@outlook.jp <i>Shrimp</i>	44	Djouadi Brahim Responsable Du Site LEXLAND 15 Boulevard de la Muette 95140 Garges les Gonesse, France Ph.: +33 06 79 35 47 19 Fax: +33 01 34 45 54 08 Email: brahim.d@lexoland.fr <i>Shrimp</i>
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3	Atul Parab Co-Founder & CEO Fiske Fresh Allocean Edibles Pvt Ltd Shop-04, Oasis CHS Amboli Andheri, Mumbai, India Ph.: +90 31610598087 Email: sales@fiskefresh.in Web: www.fiskefresh.in <i>Tuna Fish</i>	4	Alexander Simakov CEO, Managing Director Alexandria Corp 3666 Gorriti St,1172 Buenos Aires, CABA Argentina Ph.: +541 11 5219 3305 Email: alexanderiacorp@live.com Web: www.alexandriacorp.com <i>Tilapia (Gutted/scaled)</i>
5	Marek Jirovec Managing Partner Icelandic Fish s.r.o Za Avii 914/19600 Praha 9 Czech Republic Ph.:+420 7743208080 Email: marek@icelandicfish.cz Web: www.icelandicfish.cz <i>Canned Tuna</i>	6	Volcov Denis General Manager Victonis Prim Company (Golden fish) Republic of Moldova Ph.: +373 69827775 +373 61020104 Email: Victonisprime@gmail.com <i>White Fish</i>

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5	Gordan Ratkovic Key Account Manager Al Ponted D.o.o Ljubljana pot k sejmisco 30, 1000 Ljubljana Slovenia Ph.: +386 4917656939789 Email: gordan@alponte.si <i>Surimi</i>	6	Johan Westermark BJERREFISK Fiskerrivansgade 11 990 Frederikshavn Denmark Ph.: +45 98421611 Mob: +45 22613434 Email: bjerefisk@bjerefisk.dk <i>Seafood</i>
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