

AKAM: **MPEDA** Organises **Mega Event at Harbours** 

Secretary Fisheries, **GOI Visits MPEDA and** Harbours in Kochi

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## COVER STORY Strategies & Action Plan 2025 -Part 4

By K.S Srinivas IAS, Chairman, MPEDA

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## Indo-Pacific Market: **Challenges & Opportunities**



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### On the Platter

K. S. Srinivas IAS Chairman

#### Friends,

The nation is commemorating *Azadi Ka Amrut Mahotsav* in a grand manner. As part of such celebrations, the Department of Commerce also has organized a series of events christened *Vanijya Utsav* in different parts of the country to promote trade. MPEDA has participated actively in the events organized by DOC. In addition, MPEDA has organized a meeting with the seafood exporters on 24<sup>th</sup> September 2021 at Visakhapatnam. The meeting was chaired by Shri. B. V. R. Subrahmanyam IAS, Commerce Secretary, in which Commerce Secretary had one to one interaction with the exporters on various trade issues. MPEDA has presented before him the action plan to achieve the export target of US\$ 7.8 Billion fixed for marine products during 2021-22.

Moreover, MPEDA and its society NETFISH organized *Azadi Ka Amrut Mahotsav* celebrations in 9 selected fishing harbours along the coastal states involving 75 fishing boats and 750 fishers. The theme of the programme was "Responsible fishing for sustainable future". Awareness and cultural programmes marked the event, which saw the participation of fishermen, seafood exporters, the Coast Guard, Fisheries and Forest departments, and other stakeholders.

We also had an opportunity to receive Shri. Jatindra Nath Swain IAS, Secretary Fisheries during his visit to Kochi last month. Secretary Fisheries visited the Fishing Harbour at Thoppumpady and was provided a detailed account on the proposal to upgrade its infrastructure in the harbour for better cold chain and quality management. Secretary Fisheries has also visited MPEDA Head Quarters and the Multispecies Aquaculture Complex of RGCA at Vallarpadam, where he witnessed the larval and nursery rearing facilities of diversified fish species.

As you all are aware, China keeps on suspending the units from exporting to that market alleging detection of Covid-19 nucleic material on seafood packages. At the behest of MPEDA, Centre for Cellular and Molecular Biology (CCMB), Hyderabad has studied the issue in detail, and has come out with a recommendation to use 1% hypochlorite solution to eliminate the risk of detection of nucleic acid on the master cartons. We have already communicated this recommendation to the exporters to put it into practice for the cargo for export to China, and are hopeful that this will put to rest the risk of detection of Covid-19 nucleic acid material in seafood cartons at the Chinese ports of import.

MPEDA has decided to adopt a tribal hamlet, Nirmala Nagar in Repalle Mandal at Guntur district of Andhra Pradesh. As part of that, on 8<sup>th</sup> October 2021, a foundation stone for creation of infrastructure was laid by Shri. Mopidevi Venkataramana, Hon'ble Member of Parliament (RS). MPEDA plans to create infrastructure facilities in the hamlet along with the District Administration, especially to ensure continuous power supply, so that the farmers can stock more shrimp seeds in their ponds and come up with a better production, following better management practices.

In a significant development, the marine products sector has achieved 49% of the export target of US\$ 7.8 billion set for the year, by September 2021. The trend is quite promising and gives hope that the target is within reach.

Thank you.

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## MPEDA conducts Virtual Buyer Seller Meet with Embassy of India, Japan

PEDA in association with Embassy of India, Tokyo, Japan had organised a Virtual Buyer Seller Meet with Ms. An-na Nakada from M/s. Kohyo Co., Ltd., on 24th September 2021. M/s. Kohvo Co., Ltd. was established in 1971 as a seafood importer in Japan. Since foundation, the company have steadily developed their business in response to the changing social environment, and now grown to a general food trading firm with multiple group companies in Japan and other parts of the world. Their product portfolio includes marine agricultural and livestock products, processed foodstuffs, canned foods, fishing net & gears, feed, alcoholic drinks and sundries. Kohyo has marked its 50<sup>th</sup> anniversary of the foundation in 2021 and they took a new step forward by establishing a holding company. M/s.Kohyo Co., Ltd., deals with a variety of frozen, chilled and live seafood across the world, and they do supply to fish market, wholesaler and food manufacturer in Japan. Though the demand of seafood is increasing worldwide, the sustainability of resources is also necessary and Kohyo strives for the balance of resources and stable supply.

The meeting began at 11.00 AM, Mr. Manoj Singh Negi, First Secretary (Commerce), EOI Japan, welcomed Ms.

An-na Nakada and the participants to the programme. A brief introduction of MPEDA and the objective of the VBSM was detailed by Dr. T.R. Gibinkumar, Deputy Director (Market promotion & Statistics), MPEDA. About 12 exporters had registered for the VBSM and the meeting proceeded with the presentations of the participant exporters.

Ten exporters had given the presentation before the buyer and two exporters faced certain network issues. The presentations covered the infrastructure facilities, products offered, certifications and the major markets of the companies. Each presentation was followed by discussion with the buyer on the products offered by the exporter.

The buyer appreciated the presentations and shared the experience as an opportunity to meet the exporters to initiate more business in future. Mr. Anilkumar P., Joint Director (Marketing) attended the concluding session of the VBSM and inquired on the requirements of Japan market and requested to send a list of the seafood commodities preferred by the buyer. The meet came to an end at 12.00 PM with the concluding remarks of Dr. T.R. Gibinkumar, Deputy Director (Market Promotion & Statistics).



## MPEDA Coordinated *'Vanijya utsav'* at Lakshadweep and Andaman & Nicobar islands

n the wake of the Union Ministry of Commerce and Industry observing 'Vanijya Saptah' from 20<sup>th</sup> to 26<sup>th</sup> September 2021 in connection with '*Azadi Ka Amrit Mahotsav*'', MPEDA coordinated two separate events at Lakshadweep and Andaman & Nicobar Islands. Both the events were launched under the tagline 'Showcasing India as a rising economic force'.

#### **Union Territory of Andaman & Nicobar Islands**

As part of Vanijya Saptah, an exhibition was organized on 21<sup>st</sup> and 22<sup>nd</sup> September 2021 by UT Administration along with DGFT, MPEDA and the Fisheries Department at Department of Industries Campus. Fourteen exhibitors participated in the event.



Inauguration of event by potting a plant



A view of dias



Exhibition stall at UT of Andaman and Nicobar



Mr. A. Anbarasu IAS, Advisor to the Hon'ble Administrator, UT of Lakshadweep inaugurating the event



View of stalls at Kavaratti

The event was attended by Mr. Ajit Anand, Director, Department of Industries, Mr. Arjun Upadhyay, Assistant DGFT, Mr. Manoj, General Manager, NABARD, Mr. Gopal, Joint Director, Department of Fisheries, and Dr. Ramakrishnan, Scientist-In-Charge, KVK.

After the inaugural session, there were presentations by experts on various topics. The exhibition was conducted in the Sagarika Annex of the Department of Industries, UT administration. Stalls were put up by MPEDA, MPEDA-RGCA, Coconut Development Board, Fisheries Survey of India, Salt and Marine Chemical Research Institute and NABARD besides stalls from the various organizations and industries.

#### Union Territory of Lakshadweep

An exhibition was organized on 21<sup>st</sup> and 22<sup>nd</sup> September 2021 at Panchayat Stage Ground, Western Jetty, Kavaratti by the Department, UT of Lakshadweep along with DGFT, MPEDA and Fisheries Department, AN Administration. A total of 15 exhibitors participated. The event was attended by Mr. A. Anbarasu IAS, Advisor to the Hon'ble Administrator, Mr. Vijendra Singh Rawat IAS, Secretary (Home), Mr. Amit Satija IAS, Secretary (Finance), Mr. K. T. Damodar IFS, Secretary (Environment & Forests), and Mr. O. P. Mishra, Special Secretary & Director (Industries) and Export Commissioner.

The major aim of the event was to project Lakshadweep as a rising export hub and also to promote products and services of exporters from the Lakshadweep. The *Vanijya Utsav* was targeted at significantly increasing the share of exporters with focus on development of industries, fisheries, agriculture, handicrafts and other sectors.

At the exhibition, stalls were put up by MPEDA, ICAR-NBFGR, ICAR-CIFT, Lakshadweep Development Corporation Ltd, Coconut Development Board, Department of Industries and Women Self Help Groups in the Islands.

Videos and animations on food safety, harbour hygiene, hygienic onboard handling, hygienic preprocessing, and technological advancements of CIFT were showcased for the benefit of the public. Besides, various cultural programmes were conducted.

## MPEDA observed 'Vanijya Utsav' to mark 'Azadi Ka Amrit Mahotsav'

PEDA joined the nation in celebrating "Azadi Ka Amrit Mahotsav" (AKAM) to mark the 75<sup>th</sup> year of the Indian Independence. Regional and sub-regional divisions of MPEDA observed 'Vanijya Utsav' in connection with AKAM under the auspices of the Union Ministry of Commerce and Industry.

#### Andhra Pradesh

#### Eluru, West Godavari district

A two-day event was organized as part of Vanijya Utsav on 25<sup>th</sup> and 26<sup>th</sup> September 2021. Following a presentation, Mr. Hakkim V. I., Deputy Director, SRD Bhimavaram, interacted with the participants and highlighted the importance of exporter registration.

The event included display of live Shrimp (*Litopenaeus vannamei*) & live Fish (GIFT), MPEDA literature and charts exhibition and display of processed products like cooked IQF PDTO, raw IQF butterfly, skewer Vannamei, raw IQF *P. monodon*, fish fillet of Seabass, Pangasius,Murrel, fresh Scampi etc. Mr. Kartikeya Misra IAS, District Collector, Ms. Padmavathi, Joint Collector, Mr. Venkata Rao, GM Industries, West Godavari, Mr. Vanka Ravindranath, Chairman MSME, and Mr. Kasi Viswanadha Raju Uddaraju were present at the event. Eight participants from agricultural and allied sectors and various departments exhibited their products during the event.



SRD Bhimavaram officials & staff at Vanijya Utsavam, Eluru, West Godavari District

Vijayawada



Chief Minister, Andhra Pradesh visits MPEDA Stall

MPEDA participated in the two days AP Trade Carnival *Vanijya Utsav-*2021' organised at at SS Convention, Labbipet, Vijayawada on 21<sup>st</sup> and 22<sup>nd</sup> September-2021.

The Programme aimed at doubling Andhra Pradesh's trade exports was inaugurated by the Chief Minister Mr. Y.S. Jagamohan.The event was attended by local and foreign ambassadors, entrepreneurs, exporters, and policymakers.

The conference was hosted by the state government in association with Plastic Export Promotion Council. The Union Secretary for Industries and Commerce Mr. Suresh Kumar attended the event accompanied by state ministers, MLAs, MPs, officials, CII, and representatives of the Plastic Export Promotion Council of India.

Shri A. Jeyabal, Joint Director, MPEDA, Regional Division, Vijayawada made a presentation on production and export scenario of seafood in the country with special reference to Andhra Pradesh.

MPEDA established a stall of 3x3 m with live specimens and processed samples. Aquarium fishes, *L.vannamei* shrimp, *L.vannamei* seed, GIFT Tilapia fishes, tilapia fingerlings & seeds, crablets, seabass fingerlings etc. were displayed in glass tanks with aeration and lighting



MPEDA receives the Best Stall Award- First Prize in Vanijya Utsav-2021

arrangements. The processed and value added products were displayed in deep freezer. Officials of MPEDA Regional Division, Vijayawada explained about the live species and products to the stall visitors for two days.

MPEDA Stall in Vanijya Utsav attracted the VIPs, media, officers, exhibitors and visitors and bagged the Best Stall Award –First Prize among 24 participants.

### TAMIL NADU

#### Tuticorin

SRD Tuticorin participated in the *Vanijya Utsav* by putting up a stall on 24<sup>th</sup> September 2021. The stall displayed value-added seafood products, commercial fishes and fish species suitable for aquaculture diversification.

Mrs. Kani Mozhi, Hon'ble Member of Parliament, Mrs. P. Geetha Jeevan, Hon'ble Minister for Social Welfare, Mr. Kannapiram, DRO, Tuticorin Dist, and Mr. Gunasingh Chelladurai, District Chamber of Commerce & Industry, Tirunelveli visited the stall. Around 300 people, including officials from various sectors such as seafood, coir , spices, agriculture, horticulture, handicrafts, and banking, participated in the event.





Mrs. Kani Mozhi, Hon'ble Member of Parliament visiting MPEDA stall

## Commerce Secretary holds meeting with seafood exporters as part of 'Azadi Ka Amrit Mahotsav'



Mr. B. V. R. Subrahmanyam IAS, Commerce Secretary inaugurating the meeting with Mr. K. S Srinivas IAS, Chairman MPEDA

s part of *Vanijya Utsav*, observed in connection with *Azadi ka Amrit Mahotsav*, a meeting with seafood exporters was organized at Visakhapatnam on 24<sup>th</sup> September 2021.

The meeting was chaired by Mr. B. V. R.Subrahmanyam IAS, Commerce Secretary, Government of India. A total of 45 exporters took part in the meeting. Welcoming the dignitaries and exporters, Mr. K. S. Srinivas IAS, Chairman, MPEDA highlighted the Indian scenario of marine products exports and briefed the issues faced by exporters, action taken on various issues and future actions to address the issues of the exporters. Addressing the meeting, Commerce Secretary assured to resolve the constraints in exports related to China and other major markets. On the supply side the major

constraints in exports like container shortage, limited cargo facility, high freight charges/logistic costs, nonavailability of sufficient labour, scarcity of sea-caught raw material, and increase in packing material cost were highlighted by the Chairman. Hurdles faced by exporters on the market side were also discussed in the meeting, including indefinite suspension of units due to Covid-19 nucleic acid, delay in cargo clearance & payment in China, price competition from Vietnam due to their FTA with EU, very low prices offered by Vietnam, pending approval of units with Vietnam authority, market restrictions on farmed shrimp export due to bio-security issue in Australia, South Korea, Kuwait, Thailand and Saudi Arabia, as well as sluggish demand in HoReCA section.



Chairman, MPEDA welcoming the dignitaries to the event

Chairman, MPEDA also listed out the major trade issues with the EU, USA, Japan, Thailand, Australia & South Korea. Chairman stated that the matters related to the EU. China etc were raised in all available fora and MPEDA had contested with GACC on suspension of units, non-listing of new units, non-listing of new species, delay in cargo clearance and that MPEDA has also took up the issue of Covid-19 nucleic acid with various scientific organizations. Regarding Shrimp Fishery Certification under Sec 609 of the US Public Law, the Chairman informed that MPEDA has filed an application for certification & organized online meetings with NOAA along with CIFT & DoF. Also, MPEDA coordinated with CIFT and submitted a modified TED design to NOAA for review and the CIFT is working on the latest comments from NOAA.

He further informed that the US Marine Mammal Protection Act will be in force w.e.f 01.01.2023 and there is a need to file comparability findings by 30<sup>th</sup> November 2021. He said that the assessment study is entrusted with CMFRI by MPEDA and it is under progress with support from FSI. The Indian NAVY & NPOL have already been requested to provide acoustic data.

The Chairman further informed the meeting that an action plan has been prepared to achieve the target of US\$ 7.8 billion set by MoCI for the financial Year 2021-22.

Mr. Elias Sait, Secretary General, SEAI made a presentation on the major trade issues like steep hike in freight, shortage of containers, less RoDTEP rates,



Dr. M. Karthikeyan, Director, MPEDA proposes the vote of thanks



delisting of exporters by EU, pending of fresh approvals from EU etc. faced by the exporters and sought interventions from the Central Government. The major challenges in the export sector were putforth by the exporters during the meeting. The meeting ended with vote of thanks by Dr. M. Karthikeyan, Director, MPEDA.



## MPEDA regional offices participated in exporter's conclave organised as a part of 'Azadi Ka Amrit Mahotsav'

#### Karnataka

District Industries Centre, Dakshina Kannada organized Exporters Conclave at Mangalore on 23<sup>rd</sup> September 2021 in connection with *Azadi Ka Amrit* Mahotsav celebrations. The programme was inaugurated by Dr. K V Rajendra IAS, Deputy Commissioner, Dakshina Kannada district and around 100 participants representing various export sectors participated in the event. In the technical session, Dr. Ganesh K, Assistant Director, MPEDA Mangalore presented a talk on 'Prospects of Seafood Exports'. He also served as a Panel discussion member.

#### A & N Islands

An online Buyer-Seller meet was organised between the fish traders/suppliers from Andaman and marine product exporters on 24<sup>th</sup> September 2021.The meeting was attended by 14 marine products exporters and 32 seafood traders/suppliers. Mr. Ajit Anand, Director, Department of Industries, UT A&N Administration and Mr. Gopal, Joint Director, Department of Fisheries, UT AN Administration were present at the meeting.

#### Tamil Nadu

MPEDA participated in the "Trade and Commerce Week" as a special invitee and given a speech on the activities of MPEDA in export promotion of marine products and aquaculture.

The programme was attended by dignitaries like Mr. K. J. Prawin Kumar IAS, Additional Collector (Development) Ramanathapuram district, Mrs. Varalakshmi IRS, Joint Commissioner, Customs & Central Excise, Tuticorin and Mrs.Vaishali Hariharan, Federation of Indian Exports Organisation, Chennai.

About 200 representatives from seafood sector, Coir Board, Spices Board, Agriculture, Horticulture, Handicrafts, local manufacturers and suppliers of millet & by products attended the programme.









## India's seafood trade with Indo Pacific countries

Mr. A. Sakthivel, Assistant Director & Ms. M.M. Saritha, Sr. Clerk, Marketing Services section, MPEDA



ndo Pacific seafood market comprises of twenty four countries including India. The market can be categorized into USA, Japan, South East Asian Nations (Thailand, Vietnam, Singapore, Malaysia, Indonesia, Brunei, Cambodia, Myanmar, Philippines), Oceania countries (Australia, Fiji, New Zealand, Papua New Guinea) and others (Bangladesh, Bhutan, Maldives, Nepal, Sri Lanka, Taiwan).

Indo Pacific region's major destinations for India's marine products are USA, Japan, Vietnam, Thailand, Taiwan, Australia etc. During 2020-21 India's top five seafood importing countries are USA, China, Japan, Vietnam and Thailand. Except China, all other four countries belong to Indo pacific region.

#### Marine products import in Indo Pacific region

Total import of marine products (under chapter 03 &

16) of Indo Pacific Market was USD 46.64 billion during 2020. India has exported USD 3.56 billion worth marine products to various countries of Indo Pacific region contributing altogether a share of 7.62%. The percentage share to each market can be viewed in the pie chart (Fig. 1).

The graph (Fig.2) indicates that USA is the major importer of marine products among the Indo Pacific countries. India's contribution to the seafood imports of USA is 11.64% in terms of USD value. South East Asian countries, the second largest market in importing marine products, is a potential market for India.

Presently India's share in South East Asian import of marine product is 5.46% in USD value terms, followed by Japan, where India's contribution is 3.11%. India's contribution towards import in Oceania countries and others are 0.85% and 5.03%, respectively.



Fig.1: Market-wise share of India's export to Indo Pacific Countries in 2020 (value USD MIn)

## Marine products export from India to Indo Pacific market: Challenges and opportunities

#### USA

USA is India's top seafood export destination. Total import of seafood in USA was worth USD 22.49 billion during 2020 and India's contribution was USD 2.6 billion in it. Frozen shrimp is the major item of export to the market. USA has imported USD 4.87 billion frozen shrimp (030617) during 2020 and India's contribution towards this was 41.47% ie. USD 2.02 billion.

Presently the following issues are restricting India's market access in USA

- Restrictions on wild caught shrimp u/s Section 609 US Public Law for protection of sea turtle.
- Antidumping duty on shrimps.

Non compliance of Marine Mammal Protection Act (MMPA) also would attract a ban on export of wild caught seafood products from India to USA from 01.01.2023.

By addressing the above market access issues we can substantially increase market share in USA. *Dietary Guidelines for Americans during 2020-25 by US govt. recommends eating seafood 2-3 times per week.* However, currently 80% of adults do not eat seafood twice a week. India is well placed to supply quality seafood to meet the dietary recommendation of U.S.

### JAPAN

Japan is the third largest market for Indian marine products. Total import of seafood in the market was worth USD 12.80 billion during 2020 and India's contribution was USD 0.39 billion. Frozen shrimp is the principal item of export to Japan. Surimi also has a major share in India's export basket with respect to Japan and there is huge opportunity for value added products export in the market. Presently Japan imports USD 2.86 billion of value added products (under chapter 16), where India's share is only 0.7% (USD 0.019 billion).100% sampling of Indian farmed Vannamei shrimps for banned antibiotic residues affects the market access of vannamei shrimp from India.





Fig.2: Indo Pacific Market - Marine Products (under chapter 03 & 16) import from world and India's contribution during 2020

### SOUTH EAST ASIAN NATIONS

Import of seafood by South East Asian Nations was worth USD 7.98 billion in 2020, whereas India has exported marine products worth USD 0.44 billion to these countries. Among the South East Asian nations, Thailand, Vietnam, Malaysia, Singapore etc. are key importers of marine products from the world.

Thailand is one of the major destination for Indian seafood in SE Asia. Unfortunately, Thai market has imposed an export restriction for Indian shrimp due to reported presence of Infectious Myonecrosis Virus (IMNV) disease in shrimps in India. This restriction has reduced our shrimp export since 2017. India has ample opportunity to increase shrimp export to Thailand once this biosecurity issue is resolved.

Indian exporters are facing issues in the approval of Indian establishment by Department of Animal Health (DAH) of Vietnam. Timely approval of these establishments can improve the seafood export from India to Vietnam.Increasing air connectivity and promoting commercial cultivation of seaweeds may increase export of live, chilled and seaweed products to the other parts of South East Asian markets.

#### OCEANIA

During 2020, Oceania countries imported seafood worth USD 1.54 billion. A major portion is imported by Australia with a value of USD 1.29 billion. India's share in Australian import is 0.13% (USD 0.001 billion). New Zealand and Fiji are emerging markets for marine products. Australia has imposed a ban on raw frozen shrimp from India due to presence of White Spot Syndrome Virus (WSSV) in our farming systems, and acts as a trade barrier for India's shrimp export to Australian market. India needs to create disease free zones for supply of shrimps to Australia. India can explore the possibility of increasing the cooked shrimps export to Australia. A MoU between India & Australia for collaboration in this regard could be explored.

#### **OTHER COUNTRIES**

(Taiwan, Sri Lanka, Bangladesh, Bhutan, Maldives, Nepal)

Taiwan is the major seafood importing country, importing seafood worth of USD 1.5 billion. India has a share of 3.1% (USD 0.048 billion) in Taiwan's import. Major item of import by Taiwan is cephalopods, surimi, frozen shrimp &live and chilled fishes. Increased air connectivity can increase India's export to Taiwan by 50%. Dried seafood products are principal item of import by Sri Lanka and Nepal. At present India face temporary suspension in import of dry fish to Sri Lanka.

#### CONCLUSION

By addressing the antibiotic, biosecurity, sustainability issues and other trade issues, India can increase the export to these markets. In addition to this better cold chain infrastructural facilities in fishing vessel and fishing harbour and air connectivity to major developed markets can improve the unit value of our export and value addition in coming days.

\*Statistical data are approximate and sourced from Trade map



## Secretary Fisheries, Govt. of India visits MPEDA and harbours in Kochi

r. Jatindra Nath Swain IAS, Secretary Fisheries, Govt. of India visited Cochin fisheries harbour, Thoppumpady on 25th September 2021. Dr. M. Beena, Chairperson, Cochin Port Trust welcomed the Fisheries Secretary at the harbour. Mr. Hibi Eden, Hon'ble Member of Parliament, Ernakulam, Mrs.Sheeba Durom, Councillor, Cochin Corporation, Dr. J. Balaji, Joint Secretary, Department of Fisheries, GOI, Mr. A. K. Choudhury, Director CIFNET, Mr. K.S. Pradeep IFS, Secretary MPEDA, Dr. Shine Kumar and Mr. Johnson D'Cruz, Deputy Directors, MPEDA, Mr. Alex Ninan, President, Seafood Exporters Association of India - Kerala Region, officials from Cochin Port Trust, MPEDA-NETFISH, Boat Owner's Association of Cochin fishing harbour were present during the visit.

Secretary Fisheries was shown all the sections of the harbour and the development plan prepared by MPEDA was explained in detail. The number of auction halls and its dimensions, packing halls, ice plant, rest room, net mending halls, retail shop, water tanks, ETP, entry and out, parking area etc. were all detailed as per the project plan.

Based on the proposal prepared by MPEDA with a total budget outlay of 140 crores, the harbour was declared to be developed in the Central Budget 2021-22 announced in the Parliament by Hon'ble Finance Minister, Government of India. Mr. Hibi Eden underlined the importance of the harbour and explained the fish varieties going for export market and the price of each item based on the inputs collected from the boat owners, auctioneers and workers in the harbour.

Secretary Fisheries also witnessed the material movement from the fish hold to the auction hall, and interacted with the fishermen. Later on the day, Secretary Fisheries visited MPEDA Head office,

accompanied by Dr. J. Balaji IAS, JS, Department of Fisheries, Govt. of India, Mrs.Tinku Biswal IAS, Secretary Fisheries, Govt. of Kerala, Mrs. R. Girija IAS, Director of Fisheries, Govt. of Kerala and Dr. A. K. Choudhary, Director, CIFNET. Mr. K. S Srinivas IAS, Chairman MPEDA received the guests.

Secretary Fisheries also made a short visit to Munambam fishing harbour afterwards along with Mrs.Tinku Biswal IAS, Secretary Fisheries, Govt. of Kerala and Mrs. R. Girija, Director of Fisheries, Govt. of Kerala. Secretary was also accompanied by Mr. K. S Srinivas IAS, Chairman, Dr. M. Karthikeyan, Director and Mr. K.S. Pradeep IFS,Secretary MPEDA. A short presentation about harbour and activities of Munambam Fishing Harbour Management Society was made by Mr.Saju, Joint Director Fisheries, Ernakulam. Secretary interacted with the stakeholders and members in the Harbour Management Society about the fish landings, management and pricing at the harbour.

On 26<sup>th</sup> September 2021, Secretary Fisheries visited MPEDA - RGCA Multi Species Aquaculture complex, Vallarpadam. The ongoing activities for revival of Black tiger shrimp, larval and nursery rearing of fishes such as GIFT and Pearl Spot (Green Chromide) as well as the services rendered by MAC to west coast farmers were detailed by Chairman, MPEDA, who is also the President, RGCA.

The Fisheries Secretary also visited the processing plant of M/s. NAS Fisheries, Edakochi. He was accompanied by Chairman, MPEDA, Joint Secretary, Department of Fisheries, GOI, Director and Secretary, MPEDA, Director CIFNET and Dr. Jai Singh Meena, Director i/c, NIFPHATT, Kochi. Before closing his visit to Kochi, Secretary Fisheries also visited the preprocessing complex and laboratory – Sea Lab under Seafood Park (I) Ltd at Aroor.



Secretary Fisheries at Thoppumpady fishing harbour, Kochi



Secretary Fisheries at MAC, Vallarpadam



Secretary Fisheries at M/s NAS Fisheries, Edakochi



Secretary Fisheries during the visit at MPEDA Head Office



## Highlights of marine landings at selected harbours of India in September 2021

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Monitoring of marine landings in terms of fish catch and boat arrivals is being done by NETFISH on a regular basis at selected major harbours/landing centres in the 9 coastal states of India. The name, registration number and type of fishing vessels arriving every day at the harbour and the species-wise quantity of fish catch landed by these vessels are collected on a real time basis and recorded in the MPEDA Catch Certificate website.

The fish catch and boat arrival data obtained during September 2021 were analyzed and the species-wise, harbour-wise and state-wise trends observed during the month are presented in this report.

#### I. OBSERVATIONS ON FISH CATCH

A total of 75801.10 tonnes of marine catch landing was recorded from 95 major selected landing sites during September 2021. The total catch was comprised of about 37610.36 tonnes (50 %) of pelagic finfish resources,17070.62 tonnes (22 %) of demersal



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

finfishes,11389.46 tonnes (15 %) of crustaceans and 9730.65 tonnes (13 %) of molluscs (Fig.1).

About 259 species of marine fishery items were recorded in the month, of which, the top five contributors were *Decapterus russelli* (Indian scad), *Rastrelliger kanagurta* (Indian mackerel), *Parapenaeopsis* stylifera (*Karikkadi* shrimp), *Nemipterus japonicus* (Japanese thread fin bream) and *Sepia pharaonis* (Pharaoh cuttlefish)(Table1). Huge landings of Indian scad was observed during the month especially along the Karnataka coast.

Table1.	Major fish species landed during
	September 2021

SI. No:	Common name	Scientific name	Qty. in tonnes
1	Indian scad	Decapterus russelli	10494.53
2	Indian mackerel	Rastrelliger kanagurta	6561.27
3	Karik- kadi / kiddi shrimp	Parapenaeopsis stylifera	5302.68
4	Japanese thread fin bream	Nemipterus japonicus	2823.29
5	Pharaoh cuttlefish	Sepia pharaonis	2793.49

The various species of fishery items recorded were categorised into their common groups and the catch trend was analysed. Scads, Coastal shrimps, Indian Mackerel, Squids and Ribbon fish were the major five items landed during the month, together forming 48 % of the total catch (Fig 2).

Lesser

Sardines

Indian oil

sardine

Other

mackerels

Shads

Trevally

Barracudas

Herrings

Sail fish

Indian Salmon

Sword fish

Queenfish

**Mullets** 

Mahi mahi

Marlins

Tot

1081.11

935.21

903.31

883.52

457.81

327.67

247.91

218.48

159.20

150.48

136.58

119.84

102.22

60.52

1.43

1.23

1.19

1.17

0.60

0.43

0.33

0.29

0.21

0.20

0.18

0.16

0.13

0.08

Needlefish	58.51	0.08		
Cobia	29.68	0.04		
Flying fish	15.30	0.02		
Halfbeaks	7.54	0.01		
Fusilier	3.05	0.00		
Milk fish	2.35	0.00		
Wahoo	0.70	0.00		
Rainbow Runner	0.29	0.00		
otal Pelagic	37610.36	49.62		
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items during September 2021				
FISHERY ITEM	QUAN- TITY IN TONNES	% OF TOTAL CATCH		
F	Pelagic finfishe	es		
Scads	11536.08	15.22		
Indian mackerel	6561.27	8.66		
Ribbon fish	4572.83	6.03		
Tunas	3895.83	5.14		
Bombay duck	2742.55	3.62		
Anchovies	1309.23	1.73		
Seerfish	1091.31	1.44		

Table 2 - Category - wise Landing of various fishery         items during September 2021		

Table 2 represents the quantity - wise catch of pelagic finfish, demersal finfish, crustacean and molluscan resources during September 2021. Among the pelagic finfishes, Scads, Indian mackerel and Ribbon fish were the major contributors, whereas among the demersal finfishes, Croakers, Japanese threadfin breams and Pomfrets were the most landed items. About 79% of the crustacean catch was comprised of different species of Coastal shrimps, of which the Karikkadi shrimp was the most landed species. In the case of the molluscs, squids and cuttlefishes were the major items.

Fig.2: Major fishery items landed during September 2021



Demersal finfishes					
Croakers	4068.14	5.37			
Japanese thread fin bream	2823.29	3.72			
Pomfret	2136.58	2.82			
Lizard Fish	1380.44	1.82			
Catfishes	1072.58	1.41			
Groupers	921.98	1.22			
Sea bream	726.81	0.96			
Sole fish	685.89	0.90			
Unicorn leather- jacket	555.98	0.73			
Bullseye	524.93	0.69			
Triggerfish	501.70	0.66			
Ponyfish	295.99	0.39			
Goat fish	229.41	0.30			
Eel	164.41	0.22			
Rays	151.93	0.20			
Flat head	150.02	0.20			
Shark	141.69	0.19			
Moon fish	117.78	0.16			
Snappers	114.19	0.15			
White fish	47.75	0.06			
Perchlet	38.32	0.05			

Sillago	27.99	0.04
Indian Halibut	25.43	0.03
Perch	24.61	0.03
Parrot fish	23.63	0.03
Silver Biddies	22.22	0.03
Spinefoot	21.43	0.03
Surgeon fish	19.85	0.03
Sweet lip	18.62	0.02
Pompano	10.24	0.01
Threadfin	9.95	0.01
Sickle Fish	5.15	0.01
Puffer fish	4.50	0.01
Spade fish	2.57	0.00
Trevally	1.74	0.00
Sea bass	1.50	0.00
Rabbit Fish	0.71	0.00
Drift fish	0.70	0.00
Mud skipper	0.01	0.00
Total Demersal	17070.62	22.52
	Crustaceans	
Coastal shrimps	8988.83	11.86
Deepsea shrimps	1557.37	2.05

Crabs	822.24	1.08
Lobsters	21.03	0.03
Total Crustacean	11389.46	15.03
Squids	4859.25	6.41
Cuttle fish	4189.90	5.53
Octopus	681.50	0.90
Total Mollusc	9730.65	12.84
TOTAL CATCH	75801.10	100.00

**State-wise landings:** Landing data was recorded from 9 coastal states of the country during the month, of which the Karnataka state has recorded the highest marine catch landing with a share of 26 % (19826.25 tonnes) (Fig.3).

Gujarat with a contribution of 12961.10 tonnes (17%) stood in the second position and Kerala with a total landing of 12384.64 tonnes (16%)in the third position. The state of Goa had reported the lowest landing during the period.



Fig.3 : State - wise Fish Landings (in tonnes) during September 2021 **Harbour-wise landings:**The monthly landing reported from each harbour is given in Table 3. Among the 95 harbours, Malpe & Mangalore harbours in Karnataka recorded the maximum fish landings, which was to the tune of 5215.77 tonnes (7%) and 4959.04 tonnes (6.5%) respectively. New Ferry Wharf harbour in the third position had recorded 4148.90 tonnes (5.5%) of landings.The least landing was reported from Kodiyakarai harbour in Tamilnadu (8.95 tonnes).

## Table 3. Harbour-wise catch quantity & boat arrivals during September2021

SI. No:	State	Harbour	Quantity (tonnes)	No. Of Boat Arrival (nos.)
1		Porbandar	3274.90	1546
2		Veraval	3029.13	1636
3		Okha	1898.80	975
4	Quieret	Jafrabad	1598.52	462
5	Gujarat	Mangrol	1476.70	721
6		Vanakbara	1447.09	639
7		Kotada	213.56	68
8		Chorwad	22.41	210
9		New Ferry Wharf	4148.90	672
10		Sasoon Dock	1656.54	499
11		Ratnagiri	1146.93	359
12		Arnala	439.99	473
13	Maha-	Sakharinate	347.28	175
14	rashtra	Uttan	236.97	194
15		Versova	171.39	95
16		Harne	168.36	419
17		Vasai	147.45	134
18		AlibaghKoli- wada	111.27	266

19		Satpati	86.63	165	44		Chellanam	278.76	332
20		Dahanu	74.12	257	45		Ponnani	272.32	295
21		Malvan	52.45	80	46		Chettuva	250.02	180
22		Taramumbari Devgad	37.96	114	47		Mopla Bay	182.40	257
23		Onni Bhatti	35.99	130	48		Azheekkal	164.02	74
24		Malim	526.88	215	49		Munakkaka- davu	144.02	174
25		Cutbona	483.16	152	50		Vypin	139.51	56
26	Goa	Vasco	321.21	162	51		Koyilandi	136.36	165
27		Chapora	52.48	104	52		Thangassery	101.65	385
28		Malpe	5215.77	1125	53		Cheruvathur	100.19	290
29		Mangalore	4959.04	751	54		Vaadi	76.95	389
30		Bhatkal	2984.22	565	55		Vizhinjam	66.94	421
31		Amdalli	2268.37	398	56		Puthiyappa	66.59	114
32	Karna- taka	Honnavar	2109.54	393	57		Chennai	1952.74	448
33		Karwar	1407.76	521	58		Nagapat- tinam	1320.32	573
34		Belekeri	367.52	99	59		Colachel	827 37	308
35		Gangolli	310.22	316					
36		Tadri	203.82	56	60		Karaikal	744.75	261
37		Sakthikulan- gara	2758.28	1057	61	Tomil	Tharuvaiku- Iam	669.48	236
38		Thoppump- ady	2484.19	680	62	nadu	Pazhayar	510.89	582
39		Munambam	2353.80	916	63		Thengaipat- tinam	285.04	441
40	Kerala	Beypore	1116.28	243	64		Cuddalore	203.01	348
41		Neendakara	629.85	600	65		Tuticorin	152.44	355
42		Thottappally	615.13	448	66		Poompuhar	138.60	615
43		Kayamkulam	447.40	305	67		Pondicherry	135.35	156

68		Rameswar- am	54.29	150
69		Mudasalodi	53.07	251
70		Mandapam	35.68	156
71		Pulicat	27.38	333
72		Chinnamut- tom	22.44	225
73		Mallipatnam	15.40	158
74		Kottaipatnam	14.60	146
75		Jagathapa- thinam	10.74	112
76		Kodiyakarai	8.95	286
77		Visakhapat- nam	1049.29	374
78		Machilipat- nam	312.44	170
79		Kakinada	310.82	151
80	Pradesh	Nizampat- nam	219.04	74
81		Vodarevu	139.32	356
82		Yanam	114.35	163
83		Pudimadaka	66.73	319
84		Paradeep	804.27	302
85		Balramgadi	703.62	336
86	Odisha	Dhamara	520.66	223
87		Bahabalpur	315.66	131
88		Balugaon	104.20	481
89	West	Petuaghat Deshapran	2323.19	823
90	Bengal	Digha Sankarpur	1699.72	755

91	Kakdwip	1329.87	727
92	Namkhana	1302.96	434
93	Fraserganj	664.20	356
94	Soula	655.46	353
95	Raidighi	564.88	288

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

A total of 35483 fishing vessel arrivals were recorded from the 95 harbours during September 2021. State wise figures (fig. 4) show that the highest number of boat arrivals had occurred in Kerala (21 %) and then in Tamilnadu (19%) and Gujarat (16 %). The harbour wise details of boat arrivals are given in table 3 above. Veraval (1636 nos.), Porbandar (1546 nos.) and Malpe (1125 nos.) harbours had recorded the highest fishing vessel arrivals during the month.



Fig.4: State - wise boat arrivals (nos.) during September 2021

**Summary:** In September 2021, a total of 75801.10 tonnes of marine catch landings and 35483 boat arrivals were reported from 95 major fish landing sites along the 9 maritime states of India. Total catch has increased by around 26135.82 tonnes, compared to that of August 2021 and the number of boat arrivals has increased by 11981 numbers.

Pelagic finfish continued as the major contributor to total landings ,and Indian Scad (*Decapterus russelli*) was the most landed fish species as in the previous month. Scads formed the most landed fishery item for the month. Karnataka had the maximum landings, while Kerala state had recorded the highest number of boat arrivals.

Malpe harbour attained the first position in terms of total catch landed, whereas Veraval harbour has recorded the maximum number of boat arrivals.

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## Commemorating Azadi Ka Amrit Mahotsav MPEDA Conducts mega event at Fishing Harbours

PEDA along with its society, NETFISH organized a nation-wide mega event on 26<sup>th</sup> September 2021, as part of the observance of 'Vanijya Saptah' (from 20<sup>th</sup> to 26<sup>th</sup> September 2021) by the Department of Commerce in connection with 'Azadi Ka Amrit Mahotsav'. The event covered nine fishing harbours in nine maritime states, involving nearly 75 fishing boats and 750 fishers. Following the inaugural function, a few presentations were made based on the theme of the programme "Responsible Fishing for Sustainable Future" for creating awareness among the fishers about the need to promote responsible fishing.

Around 10 fishing vessels were flagged off for fishing trips as part of the event from each harbour. The vessels were all decked up with tricolour hangings, stickers, flags and banners bearing '*Azadi Ka Amrit Mahotsav*' logo and the National Flag. T-shirts, caps, face masks and ID cards with *Azadi Ka Amrit Mahotsav* logo and sanitization kits were provided to the participants.

Local and traditional cultural programmes were also organized at the venue. Seafood Exporters Association of India (SEAI) and exporters rendered their support for the successful conduct of the event. MPEDA officials at its field offices in Veraval, Panvel, Mangalore, Kochi, Tuticorin, Vizag, Bhubaneswar and Kolkata, along with the NETFISH State Coordinators of the respective states and the Harbour Data Collectors, coordinated the events.

### **Event Highlights**

 Awareness programme among fisheries stakeholders at nine fishing harbours in nine coastal states

 Event theme: Responsible Fishing for Sustainable Future

 Sailed off convoys of fishing vessels to the sea, with each vessel decorated with flags and stickers bearing Azadi Ka Amrit Mahotsav logo, National Flag and hangings. The event witnessed active participation from the fishers. About 131 fishing vessels and more than 1300 fishers joined the national event, which was organized as part of the celebrations of 75 years of Indian Independence.

MPEDA-NETFISH, through its extension services, has created a good rapport with the fishers of the entire coastal states over the years and has generated substantial awareness among them on marine conservation and sustainable fishing. As a result, the fishers came forward with great deal of enthusiasm to take part in this event and made it a grand success.



Inauguration by Chief guest DIG Mr. N. Ravi, Commander, Indian Coast Guard at Cochin fisheries harbour



Flagging off decorated fishing vessels by DIG Mr. N. Ravi, Commander, Indian Coast Guard



Dr. M. Karthikeyan, Director, MPEDA delivering the speech at the event in Cochin fisheries harbour



Inaugural session at Malim, Goa



Fishing vessel crew at Malim, Goa



Flag off function at Sassoon dock, Mumbai



Decorated fishing vessel at Sassoon dock, Mumbai



Fishing vessels at Paradeep, Odisha



Odisha fishing vessel crew at fishing harbour, Paradeep



Cultural event at Chinnamuttam, Tamil Nadu



A Made tsuv & Vanijya Saprah NG FOR SUSTAINABLE FUTURE

Inaugural session at Mangalore

Yakshagana performance during the event at Mangalore

Flag off ceremony of vessels at Veraval

Aerial view of vessels at Kolkatta











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## Strategies and action plan for seafood exports by 2025 – Series 4



### K. S. Srinivas IAS, Chairman, MPEDA

This is a series published by Chairman, MPEDA on the strategies and action plan envisaged by MPEDA in enhancing the seafood exports from the country to achieve the goals set for 2025. Series 4 explains the strategies to be adopted in capture fisheries sector to enhance the unit value through cold chain management and infrastructure upgradation.

#### I. Introduction

he contribution of capture fisheries in total marine products exports during 2019-20 was 53.55% in quantity and 32.01% in US\$ value terms. The quantity exported from sea caught material was 6, 15,677 MT worth US\$ 1906.81 million. The unit value of capture fisheries items was 3.10 US\$ per Kg.

The sea catch is almost stagnant for the past few years due to various reasons. Longer fishing period has also affected the quality of sea caught material.

(a) Stagnation/decrease in landings: The loss of fishing days due to Covid-19 and inclement weather conditions especially along the west coast has affected the fishing operations thereby bringing down the landings and has reduced Catch Per Unit effort. Most of the landings consisted of fishes those are more popular in the domestic market than exportable varieties.

(b) Post harvest losses & lower unit value owing to poor infrastructure & handling: Due to shortcomings in the cold chain infrastructure onboard fishing vessels as well as in the harbours / landing centres a lot of catch is wasted, which has to be considered as a loss for the economy.

The lack of adequate cold chains also spoils the quality affecting the unit value realization in the domestic as well as export market. The fishing harbours and landing centres need to be equipped with facilities for potable water supply, ice and storage facilities. Similarly, fishing vessels shall have facilities for proper handling and storage of the catch to prevent spoilage and to ensure the quality.

#### A. Increase in export supply from Capture Fisheries

India being surrounded on the three sides by sea has a great opportunity for the development of fishing and its allied activities. Fishing is already a major occupation in most of the maritime states of the country. The potential for marine fish production for India is estimated to be 4.40 million tons. Of this, around 3.59 million tons, constituting 82% of the available potential has already been exploited, and there is very little scope for increasing the contribution from capture fisheries further. We may also need to reckon the increase in domestic demand for seafood.

At present, the contribution of capture fisheries to India's Seafood export is 6.15 lakh MT with a value of Rs13,899.05 Cr (US\$ 1.906 billion) in final product form (Fig. 1). No substantial increase in this contribution from the capture fisheries sector is expected as the country has reached exploitation levels closer to the declared Maximum Sustainable Yield (MSY) level.

Inadequate cold chain infrastructure and poor onboard handling of fishes in the fishing vessels and at harbours / landing centres, lead to spoilage and brings down the unit value of fishes landed considerably, compared to



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Fig.1: Status of capture fisheries and contribution to export

the potential price. Inferior quality affects the export price also. Deficiency in insulated or refrigerated logistic connectivity, adds to the spoilage, resulting in huge revenue loss.

The post- harvest losses were estimated to have reached 25% of production annually due to the poor cold chain infrastructure facilities. The gaps in the cold chain development in the seafood export sector are affecting the quality of Indian seafood as well as unit value realization of our country's exports. By saving on quality, additional raw material can be supplied to the

export value chain besides realizing more unit price for the catch at the point of first sale as well as in the export market.

The infrastructure facilities for maintaining cold chain through creation of onboard facilities and up-gradation of fishing harbours could reduce post-harvest losses, and increase the unit purchase value of the catch. This in turn could help to reach out to premium export markets, and propel the export prices further creating avenues to increase the income of fishers. MPEDA has identified 25 major Fishing Harbours in the coastal

## COVER STORY

states for the up-gradation of infrastructure facilities. Besides, cold chain facilities onboard fishing vessels are also required for effective quality management in the entire production chain. In addition to upgradation of 25 fishing harbours, 10,000 fishing vessels also need to be upgraded in the initial phase and to address the traceability and sustainability issues in the capture fisheries sector. It is estimated that a total investment of Rs. 6,167 Cr is required for this purpose.

The initiatives in capture fisheries is expected to reduce the post harvest losses by 10% pumping additional 3.60 lakh tons of raw material to the market, which works out to around 72,000 MT finished product for export generating an additional revenue of Rs. 2200 Crores (US\$ 295.20 million) with an enhanced unit value.

#### **B.** Quality Management in Capture Fisheries

#### (i) Modernization of fishing harbours

The infrastructure facilities for maintaining cold chain through up-gradation of fishing harbours in the country could reduce post-harvest losses and increase the unit value realization of export. Union Budget for 2021-22 has announced the development of five major fishing harbours – Kochi, Chennai, Vishakapatnam, Paradip and Petuaghat as a hub of economic activity.

The up-gradation of fishing harbor is expected to increase the unit value of raw material landed in these harbours by atleast US\$ 1.00, from the current \$3.10 to \$4.10 per kg. It is estimated an amount of Rs. 2, 500 Cr. is required for the up-gradation of major 25 fishing harbours @ Rs. 100 Cr/harbour, with assistance under PMMSY.

Current export from capture fisheries has a unit value realization of 3.10 US\$/Kg. Modernization of fishing harbours is expected to increase unit value by US\$1 / Kg and is expected to generate an additional export revenue of US\$ 0.72 Billion 72,000 MT of products raised through savings on post- harvest losses.

### (ii) Promote professional management of fishing harbours.

India has about 50 major fishing harbors and 100 minor harbors. The unit value realization for Indian sea caught material is lower than those of the neighboring countries (viz., US\$ 3 per kg for India; US\$ 12 for Sri Lanka for the fresh and chilled fish exports). In addition, there is an estimated loss of 20 to 25% of the catch during the post harvest operations.

The lower realization and post-harvest losses are mainly attributable to poor infrastructure facilities at the harbours, lack of proper maintenance and professional management, poor safety measures, and unhygienic handling of catch. Further, even basic data like number of fishing boats operating, quantity of fish landing, species wise catch, etc. is not maintained properly. Considering the above challenges, it is urgently required to modernize the harbours and manage them professionally by setting up of Special Purpose Vehicles (SPV).

As a pilot project, MPEDA has signed a MoU with Cochin Port Trust (CPT) to modernize the CFH by forming the SPV with professional management. Total Project Cost is Rs.140 crore, which is proposed to be a convergence of funds from different Government schemes. The administrative and financial approval for forming SPV and execution of project is awaited from DoF and DoC.

## (iii) Upgradation of Cold chain facilities in Fishing vessels

The up-gradation of infrastructure facilities for maintaining cold chain and to improve hygienic handling onboard fishing vessels could reduce postharvest losses and increase the unit value realization of export. Facilities like Insulated Fish hold, RSW, Insulated Fish boxes, FRP deck, bio toilets etc need to be provided for upgradation.

This will help to reduce the post harvest losses from existing 25% to 15% and will increase the availability of fish for export market. 10% reduction in post harvest losses generate 3.60 lakh MT of additional raw material, which provides for additional 72,000 MT finished product for export. This in turn will generate additional export revenue of US\$ 314 million.

It is estimated that Rs. 3,000 Crore is required for upgradation of cold chain facilities in 10,000 fishing vessels, which could be done through PMMSY-Centrally sponsored scheme.

(To continue in the next issue)



RAINBOW IN A BOWL



## Colourful Swimmers



### V. K. Dev

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

Rasboras, belonging to the family Cyprinidae, are very popular fish among hobbyists. They are inhabitants of the fresh water streams of Malaysia, Java, Sumatra and Thailand. Rasboras are active swimmers, peaceful and suitable for a community tank. They prefer to be in small schools. The aquarium tank should have plenty of open space for swimming with dense plants for shelter. They are omnivorous eating most types of foods and can breed without much difficulty. Spawning usually occurs in soft, neutral or slightly acidic water. The water temperature should range from 22 to 27°C with soft to medium hardness and pH ranging from 6 to 6.6.

The main species in the hobby are *Rasbora einthoveni* (brilliant rasbora), R *kalochroma* (clown rasbora), R *borapetensis* (red tailed rasbora), R *elegans* (elegant rasbora), R *dorsiocellata* (eye-spot rasbora), R *vaterifloris* (fire-ceyloneserasbora), R *heteromorpha* (harlequin rasbora), R *trilineata* (scissortail rasbora), R *caudimaculata* (red scissortail rasbora), R *maculata* (pygmy rasbora), R *taeniata* (striped-black rasbora), R *steineri* (striped-golden rasbora) and R *pauciperforata* (striped-red rasbora).

R *maculata* is the smallest among the rasboras and is known as the pygmy rasbora. It should be kept with comparable sized fish. Like other rasboras, it prefers to have dense foliage and dim lighting. The water should be soft with pH about 6, and temperature  $22 - 26^{\circ}$ C.

With slim pale yellow body and distinctive dark and gold bands extending from the gill cover to the end of the caudal penduncle, R *borapetensis* (red tailed rasbora) looks elegant in the aquarium. A dark line runs along the base of the anal fin. The caudal fin is red

in matured fish. Males are slimmer than the females. R *dorsiocellata* (eyespot rasbora) is not very common among hobbyists. They are peaceful and look gorgeous under the right lighting.

Among rasboras, the red or harlequin rasbora (R *hetromorpha*) is very popular. This species differs from its relatives with its unusual body shape, marking and colouration. Its body is reddish copper colour, which is accented by a triangular shaped striking blackishblue marking covering the rear half of the body. The marking is wide in the centre of the body and becomes narrower as it extends backwards to where the caudal fin begins. The dorsal fin is red in colour with yellow tip. The upper and lower tips of the caudal fin are bright red with inside rays pale yellow. The body is silver coloured and the sides range from pink to copper. They prefer an environment with dense vegetation, open area for swimming, a dark substrate and dim lighting.

Though other species of rasbora spawn in soft and slightly acidic water, R *heteromorpha* requires very soft water with hardness of 1.5 to 2.5 DH and pH around 6. Among the other rasboras, the harlequin is difficult to breed. However, spawning can be achieved if proper conditions are provided. The males are more slender than the females.

The dark blue triangular marking is clearly delineated along the lower part of the abdomen in the male, while in the female the lower edge of the triangle is less prominent. Spawning pairs prefer broad-leafed plants such as Cryptocornye or Aponogeton. The larvae hatch within 48 hours and feed on yolk sac initially, after which they will accept tiny live foods such as rotifers, cyclops and artemia nauplii.

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## "Scientific Mud Crab Farming" – a success story by MPEDA

PEDA, Regional Division, Vijayawada has successfully conducted a Demonstration Programme on "Scientific Mud Crab Farming" in the aquaculture farm of a Scheduled Tribe beneficiary Mr. P. Rajasekhar at Nirmala Nagar Hamlet, Pothumeraka Village, Repalle Mandal, Guntur district, Andhra Pradesh from 6<sup>th</sup> November 2020 to 15<sup>th</sup> June 2021.

Mr. Rajasekhar is a farmer enrolled with MPEDA and has offered two ponds of 0.68 Ha Water Spread Area (WSA) for Crab farming. However, one pond of total area of 0.60 Ha and WSA (Water Spread Area) of 0.50 Ha was considered for MPEDA demonstration. Water source for the pond is a small canal from a creek originated from sea at Nakshtra Nagar locality in Repalle Mandal.

### **Project details**

MPEDA had sanctioned Rs. 3.50 lakh towards capital and recurring costs as its contribution towards the demonstration. Expenses over and above this was to be borne by the farmer. A return of 20 % of income to MPEDA also has been agreed at the proposal stage of the project.

#### Site selection

The farm site selected had its own short comings with respect to access during rains, non availability of electric power connection for pumping, aeration and lighting, water scarcity, lack of required salinity, seepage, water quality issues etc.

Considering the potential of the village and the group of poor farmers around, this was taken as a challenge and therefore maximum care was taken at every step of the demonstration programme. There was no shed

available in the farm site. Hence a shed was constructed for storing feed, fertilizers, water testing kits, etc, and also to serve as watch shed.

#### Pond preparation & infrastructure development

The water in the pond was drained out completely by pumping. Slurries, Sludge and black soil were removed and the pond was flushed with water.

Ammonium Sulphate was applied along with lime to kill predators and 110 kg agriculture lime was applied on the pond bottom and bunds to maintain required soil pH. Screened water was pumped in and transparency and pH of water were checked and required lime, urea and single super phosphate were applied accordingly for plankton growth/bloom.

### (a) Strengthening and heightening of dyke

The dyke height had to be increased for maintaining adequate water level, controlling over flow during flood and rains and preventing entry of predators and/ competitors and securing the crop within the pond and also to have added strength to the bund to hold water and stock within farm without seepage and breakage. The peripheral dyke of around 350 meters has been strengthened, heightened and repaired as per requirement.

#### (b) Construction of nursery pen

A nursery pen of 30 X 25 meters was constructed in the pond with 8 mesh nets at 1.5 m height and with tarpaulin sheet of 15 cm width on top of the pen/ nursery net, so as to prevent escape of crablets from the nursery. It was constructed for rearing crablets for around 2 months.



Nursery pen in pond filled with water



Testing of water quality parameters



Crablets ready for stocking



Making hide outs for crablets at the farm site



Harvesting, cleaning and weighing harvested crabs



Sampling during the visit of Chairman, MPEDA

#### (c) Bio-security measures

MPEDA, Regional Division, Vijayawada purchased and provided material for bio-security measures such as crab fencing and bird scare netting and guided the tailors on cutting the mesh net, HDPE tarpaulin sheet etc. and stitching for both crab fencing and nursery pen. Crab fencing is very much essential to avoid escape of stock from pond to outside area and to prevent entry of predators, snakes etc. from outside area to the demonstration pond. Bird fencing is essential mainly for avoiding contamination, spread of disease etc. in the demo pond and to secure quality stock in the pond.

#### (d) Hideouts

Hideouts play an important role on survival and success of crab culture as this species is highly cannibalistic. For nursery phase, around 250 number of old hideouts pieces of pipes received from RGCA and four other PVC Pipes of 2" diameter and 20 feet long procured and cut in to 240 pieces of 4 " length had been evenly distributed in the nursery of the demonstration pond to serve as hideouts for the crablets.

#### (e) Diesel engine with pump and accessories

As the site had no electric power connection or installed diesel pump for pumping water into the pond, MPEDA has purchased a 5 HP diesel engine with high discharge pump and accessories and installed in the pond. The water was pumped by screening at the water source and at the pond level by using mesh screen net bags. Flexible pipe of required length from delivery pipe to the demonstration pond has also been procured and installed.

#### Soil and water quality parameters

Optimum Soil and water quality parameters are to be ensured from starting level and to be maintained throughout culture period for success of the crop. Soil pH and Water pH, Water Salinity, Dissolved Oxygen, Transparency, Temperature etc. were recorded in advance for necessary pond preparation works. Soil Tester, Salinity Refractometer, pH Kit, Ammonia Kit, Thermometer, temporarily made Seechi disk etc. were used for checking the parameters. The soil and water quality parameters before and after pond preparation are given below:

SI. No.	Parameter	Before pond preparation (Oct- 2020)	After Pond preparation (Nov-2020)	Stocking Date (06-11-2020)	Remarks
1	Temperature (º C)	25	26	26	
2	Transparency (cm)	45	35	32	
3	рН	9.2	8.9	8.6	Salinity drop on the date
4	Salinity (ppt)	17	17	10	2021 due to rains on the previous day(s). Salinity
5	DO (ppm)	2.0	4.5	7.0	in the source dropped down to 5
6	Total Ammonia (Mg/l)	0	0	0	
7	H <sub>2</sub> S (ppm)	0	0	0	
8	SO <sub>2</sub> (ppm)	0	0	0	

### **Stocking of Crablets**

MPEDA - RGCA has supplied 3,000 crablets for the demonstration programme, and they were carried to the demo farm site by road from Karaikal, Tamil Nadu to Nirmala Nagar. It was required to apply water on the perforated seed baskets from time to time during transport of animals to reduce transit mortality. The crablets segregation, acclimatization, stocking etc. were done and chopping/cutting/slicing of fish feed etc were taught to the farmers available in the site during the occasion.

Soon after stocking, around 1/2 Kg fish meal was given to the animals. The daily feeding schedule and feed requirement were calculated and recorded. Of the daily total, 40% feed to be given in the morning hours at 6.30 AM and 60% in the evening at 05.30 PM. Initially 600 gms of feed is to be given for a week in the nursery.

There was 5% transit mortality of (148 No.s) crablets during transportation. Remaining 2852 crablets were released to the pond. In addition to 148 No. of dead seed counted and removed while stocking, there were a mortality of 449 stressed animals in transit in the next two days.

#### Pond and water quality management

The optimum water quality requirement for crab farming is given below:

Water salinity was 20 ppt at the time of site selection. However, due to rain it came down to 17 ppt during pond preparation. The low salinity issue was managed by application of mineral mix in the nursery and agriculture lime on the side of the pond dyke to prevent leaching. Due to low salinity at water source from where pumping was done, water was not pumped into the pond to preserve and maintain the salinity of water in the pond and nursery.

Whenever the salinity at water source was less than the salinity at nursery level, pumping was not done. Since the pond water salinity and nursery water salinity and other parameters are maintained at the same level, pumping of water from pond to nursery is done to have aeration and entry of fresh saline (pond) water in to the nursery.

Water Testing equipments and kits were provided to the farmer and he was taught how to use tools & kits to measure water quality parameters and how to record them in concerned register. In addition to the farmer, the officials also were regularly checking the parameters and imparting necessary guidance and corrective measures whenever necessary.

#### Feed and feed management

The effective use of feed will reduce the production cost by reduction in feed purchase cost. It will also help in maintaining optimum water quality parameters,

SI.No.	Parameter	Optimum level	SI.No.	Parameter	Optimum level
1	Salinity	15-25 ppt	5	Transparency	30-40 cm
2	рН	7.5 – 9.0	6	Ammonia	0
3	Temperature	25-35 °C	7	H <sub>2</sub> S/SO <sub>2</sub>	0
4	DO	Above 4.0 ppm	8	Nitrite	0

reduction in water exchange, pumping cost etc. In the earlier stages the fishes were supplied in live condition by the fishermen and hence those were maintained in a happa arranged in an adjacent pond of the farmer for feeding with fresh feed to the crab.The feeding chart followed for as per the RGCA is given below:

		M	ud Crab grow ou	ut feed chart by F	RGCA	
SI. No.	Months of culture	% of survival	Days of culture	% of the feed based on the ABW		Average Body Growth range (g)
1	Initial	100	1	15-10		2-2.5
2	2	95	30	10	3 Days once based on the check tray observation decide	30-45
3	3	80-85	60	9	(+/-) in calculated total feed. At least 12 Nos of check trays	70-120
4	4	75	90	8	proposed to placed to avoid over/under feeding.	145-180
5	5	65-70	120	6.5-7		200-280
6	6	60	150	6.50		270-400
7	7	50-55	180	6-5		360-600
8	8	50	210	5-4		430-900
9	9	40-45	240	4		500-1100

The feed utilization was 2,950 Kg. for production of 605.31 Kg. of mudcrab. The Feed Conversion Ratio (FCR) was 1: 4.87 in the demonstration programme over a period of 221 days (7 months and 9 days) against the estimated FCR of 1:6 in the original proposal.

#### Sampling, stock and health assessment

Unlike any other species, stock & growth assessment is a difficult task in mud crab farming mainly because it requires skilled workers to handle the crabs and it cannot be sampled by netting as done in case of shrimp and fishes.

Check trays/Circular rings with nets are used with feed and immersed down in water to get the crabs trapped in the rings. With this, we may not be able to assess the lowest & highest weight actually attained by the crab in the pond or the percentage of varied size of crabs and total stock available in the pond. For sampling, rings and feeding trays were used.

### Harvesting

Timely harvesting is very important to avoid mortality and to get maximum survival. The crab growth was not uniform. There was size variation from 250 gms to 1200 grams during April 2021. Hence it was decided to harvest the bigger crabs first by using rings for as many days until the final harvest so as to reduce the stock for faster growth, hardening the water crabs and to avoid cannibalism. It was also essential to reduce load in the pond for water scarcity and water quality issues.

Buyers were contacted to get quotes, and 5 quotes were received. A committee comprising of 3 officers and the farmer compared the quote and decided to harvest the crabs of exportable size (500 g & above) @around 10-50 Kg daily.

It was also decided that the water crabs and the crabs below 500 g weight shall be released back to the pond

to attain growth. Later, it was understood that most of the crabs of size 350-500 g released back to the pond are stressed due to handling and there are chances of mortality of such crabs. So, it was decided to avoid tying crabs which have not reached exportable size and to release them immediately upon trapped in the ring.

SI.No.	RGCA'S	TABLE OF GROWTH	AND SURVIVAL OF	MUD CRABS
	Months of culture	% of the survival	Days of culture	Average Body Growth range (gm)
1	Initial	100	1	2-2.5
2	2	95	30	30-45
3	3	80-85	60	70-120
4	4	75	90	145-180
5	5	65-70	120	200-280
6	6	60	150	270-400
7	7	50-55	180	360-600
8	8	50	210	430-900
9	9	40-45	240	500-1100

#### Income generated

SI. No.	Nature/ Size of Crab	Quantity (Kg.)	Average Sale Price (Rs./ Kg.)	Total Amount (Rs.)	The Price range of sales (Rs.)
1	XL (Above 750 Gm.)	79.47	1100.69	87,472	1,100-1,120
2	BIG (500-750 Gm)	145.85	900.22	1,31,297	900-920
3	MEDIUM (350- 500 Gm.)	86.6	650.12	56,300	650-670
4	SMALL (Upto 350)	196.6	200.08	39,335	200-00
5	Water Crabs	96.79	181-00	17,519	100-200
	TOTAL	605.31	548.35	3,31,923	100-1,120

SI.No.	Total Income	Total Operational	Net Profit (Rs.)	SHARE ON TO	TAL INCOME (Rs.)
01.110.	(Rs.)	Cost (Rs.)		MPEDA (20%)	FARMER (80%)
1	3,31,923	1,36,285	1,95,638	66,385	2,65,538

#### Profit & share between MPEDA & farmer is given in the following table:

The total amount realized through sale was Rs. 3,31,923. Considering the operational cost of Rs. 1,36,285, the net profit of the crop is Rs. 1,95,638 as shown above. As per the agreement executed by the farmer, 20% of the total income is due to MPEDA and the farmer is eligible for 80 % of the total income realized. Accordingly Rs. 2, 65,538 was handed over to the farmer at the office premise on 9<sup>th</sup> July 2021.

A "Harvest Mela Meeting" was organized on 15<sup>th</sup> June 2021 during harvest of the crop, in which Mr. K. Sivarajan, Deputy Director presented the report of the crab demonstration programme and briefed about the harvest done until then and production and income. Mr. P. Suresh, Joint Director of Fisheries, Guntur congratulated MPEDA for demonstrating successful scientific crab farming and achieving more than 50% survival. Mr. Gali Demudu, Assistant

Director of Fisheries, Nizampatnam, and farmer Mr. Rajasekhar also spoke on the occasion. Earlier, Mr. K.S. Srinivas IAS, Chairman, MPEDA had visited the crab demonstration farm site during March 2021 accompanied by Dr. S. Kandan, Project Director, RGCA who has done health assessment of the crab during the visit.

### Conclusion

It was really a challenging responsibility to get result in adversities and MPEDA RD, Vijayawada has brought out successful results. More than 80 farmers have visited the farm during the progress of demonstration and this will enable a change in the mindset of some of the farmers of the area to follow scientific aquaculture with Best Management Practices and aquaculture of alternate species.



## **Culture of trouts**

Dr. T.R. Gibinkumar, Deputy (Market promotion & Statistics), Kochi-36

The distribution of rainbow trout worldwide attests to its ability to adapt itself to a variety of aquatic environments, including aquaculture conditions. Rainbow trout can be propagated artificially, which is important for its production as food fish. The fish can be fed artificial feed and withstand temperatures of up to 26.6°C for short periods. It also tolerates low dissolved oxygen content of water, is resistant to some fish diseases and grows fast. The optimum thermal regime for the species lies in the range of 12-20°C and the annual precipitation and freshets are important.

#### **1. BASIC REQUIREMENTS FOR TROUT CULTURE**

### 1.1. Site selection for trout culture

A major constraint for expansion of trout culture is the availability of adequate year-round supply of water of required quality. If the water temperature remains in a suitable range for less than 6 months, the growth rate of rainbow trout will be very poor and the farm will not be commercially viable. Another key factor is the land site, where the soil should retain water and be suitable for concrete construction. Slope of the land should be 1-3 percent and should not be very steep, to permit an adequate flow of water by gravitational means. In addition, electricity supply and access by road are very important factors in site selection.

#### 1.2. Water quality and quantity

The primary requirement for trout culture is an abundant supply of clean and cold water. Rainbow trout culture requires a permanent supply of water with a temperature range of 10 to 20°C, and optimum temperature of 15-18°C. The water should be clear, non turbid having more than 25 cm visibility on Seechi disc. The pH value between 6.5 to 8.0 and dissolved oxygen above 8 mg/l is ideal. Calcareous water with total alkalinity as CaCO<sub>3</sub> of 10-400 ppm is preferable. Besides that, mineral content required are Calcium 4-160 ppm, Magnesium for buffer system, Manganese 0-0.01 ppm, Iron (total) 0-0.15 ppm, Phosphorus 0.01-3.0 ppm, Nitrate 0.3 ppm and Zinc 0-0.05 ppm.

Water supply of atleast 5 l/sec is necessary to produce a ton of trout, although less may be sufficient, when temperature decreases. In general the trout production is directly proportional to the water flow rate in the system. The quantity of water required also depends on the water quality, farming system and culture techniques. At water temperatures above 21°C and below 10°C trout stops feeding.

#### 2. BREEDING OF TROUTS

The breeding technology of the rainbow trout involves selection of good quality brooders and their management in the hatchery. The breeding season is normally during November and December. The principal method of trout breeding involves stripping the eggs and milt of the brooders and mixing them either dry or wet (Figs. 1-3). After the hardening of the egg shells these are placed in specially designed hatching trays / troughs.There are four phases in the incubation of eggs (Fig.4) viz., Green eggs, Eyed eggs, Alevins & Swim up fry.



Fig.1: Stripping the eggs of brooders © FAO-2012



Fig.2: Stripping the milt from brooders © FAO-2012



Fig.3: Mixing of eggs and milt © FAO-2012



Fig.4: Phases in the incubation of rainbow trout eggs © FAO-2012

The incubation period has direct relationship with the water temperature. At 5°C it takes 80 days for the eggs to hatch. The most important and sensitive stage in the life history of trouts is the alevin stage. At this stage no feeding is required from outside. The alevins become swim up fry when the yolk sac gets absorbed. At this stage these young-ones are trained on artificial feeding. After rearing the fry to advance fingerling stage (avg wt. 3 gm.) these are distributed to the growers.

### 2.1. Hatchery

Size, capacity and the type of hatchery depend on the quality and quantity of water and demand for fry. Silt-free, clean and cold water are necessary in the hatchery for incubation of eggs and rearing of the fry. Spring water is recommended for rearing alevins up to swim-up stage, as it has warmer temperature than rivers fed by snow and ice melt. Spring water with high dissolved iron content may be avoided or treated to remove the iron before use.

#### 2.2. Hatchery technologies

Atkin's incubation apparatus has been commonly used in the incubation and have compartments and screen trays. The eggs should be shielded from light by covers over the incubators to avoid damage by light. Water flow close to 20 l/min is sufficient to incubate about 1 lakh eggs and the outlet is fixed with a movable pipe

of "L" type to adjust the water depth. This equipment can be made from fiberglass or galvanized sheet. Normally fry are kept 10-12 weeks under controlled conditions with careful feeding and inside the hatchery to protect them against infections and diseases.

After about 75% of the yolk sac is consumed the fry is transferred to a starter unit where it is fed with very small flakes of protein rich starter feed. This is the most critical stage in the life of fish because if there is slight delay in feeding or the feed is not of good quality the young fish will lose its interest in feeding and start dying.

After the fry has commenced feeding it is transferred to purpose-built self cleaning type of early- rearing facility. Young rainbow trout should not be reared in earth ponds due to the danger of 'whirling disease'. To prevent imbalance in the unit weight of this biomass, grading atleast once in hatchery and later during on-growing whenever it doubles its weight should be done.

#### 3.TROUT FARMING AND GROW-OUT TECHNOLOGY

Two systems, viz., full farming and partial farming are adopted. In full farming system trout are raised from the young stage to adults and there is a hatchery for breeding and fry production. A partial farming system grows advanced fingerlings to market size fish. A full farming system needs a heavy initial investment. The grow-out trout farm needs feeding tanks, fry growing ponds, feed store, residential and service accommodations.

#### 3.1. Ponds

Culture ponds must have good circulation of water as well as to be easy to clean. The shape of the pond is variable from elongated rectangle type to circular type and irregular type. However, the elongated rectangular type involves low construction cost and efficient use of water and is easy to clean compared to any other type of ponds.

Such a system is called as race way culture. The ponds are generally made of concrete which involves a heavy initial investment and relatively cheaper and simple tanks could be made with galvanized corrugated iron sheet. The iron surface should be periodically painted with bitumen coat to prevent rusting and seepage.

Trout can grow in earthen ponds also by controlling the

turbidity. Raceway ponds are basically of two types: linear type (Fig. 5) with ponds arranged in sequence and lateral type (Fig. 6) with ponds laid out in parallel.



Fig. 5: Linear type



Fig. 6: Parallel (lateral) type

In a linear type the volume of water entering each pond is larger and gives a better use of water within ponds. As the same water is used repeatedly from pond to pond, contamination of disease in initial ponds may directly affect the other connected ponds. Conversely, in a lateral or parallel type the volume of water entering each pond is smaller but a fresh supply of water is always ensured, and there will be no contamination of disease from one pond to another.

It is better to construct the raceway ponds rectangular with 50 cm water depth and sufficient slope of 2-3%. Grow-out ponds for the fry with an area of 10-50 m<sup>2</sup>, and for grow-out/market sizefish pond with an area of 50-150 m<sup>2</sup>, with a length of 5-20 m and 10-50 m, respectively, are considered suitable. In case of earthen ponds water depth must be maintained at about 1 m to reduce the turbidity produced by fish contacting the bottom.

#### 3.2. Stocking density

Stocking density is dependent more on the volume of

water supply, temperature and oxygen concentration in water than the actual size of pond. The recommended rate of stocking is 50-100 fry/m<sup>2</sup> depending on conditions, where harvest size would be 200 g. The weight rather than the numbers should be reduced, if water temperature reaches more than 21°C and the flow rate is not sufficient, and dissolved oxygen is less than 6 mg/l. Ponds with a high degree of aeration can support a stocking density up to five times greater than non-aerated ones.

#### 3.3. Feeding

Trout are carnivorous fish and their digestive system is designed to handle animal protein and they can only digest and make use of a strictly limited variety of vegetable products. Young fish must be fed 7-8 times a day at 60-90 minute intervals. As the fish grow over 10 g feeding frequency can be reduced to 3-4 times a day. Trout needs a supply of high protein content feed in pellet form. Generally, more than 35% crude protein (CP) is necessary for trout and growth of trout has not been satisfactory with feed containing less than 20 percent animal protein. More than 40 percent CP containing feed has been recommended for the newly swim-up young and for broodstock.

The quantity of feed mainly depends on the water temperature and size of fish. If the water temperature is above 18°C, the recommended feed should be reduced to just half of the required amount and above 20°C, better to stop the feeding. The feeding should also be suspended on a cloudy day and when the water is turbid. Feeding @ 4-6 % is necessary for the fingerlings for better growth but due consideration should also be given to the water temperature for following the feeding schedule. At the water temperature range of 10-12°C, feeding schedule of 6% is optimum but when it increases to 15°C, the feeding schedule to be lowered to 4% and beyond 19°C, it should be just 50% of the optimum schedule. The optimum growth rate per month is 80 g.

When the fish reach over 50 g, feeding twice a day is sufficient. However, it must be noted that feed and size of pellets control the growth variation of fish among individuals of the same group. Lights off during nights lowers metabolism and preserves energy in the fish.The pellets and crumbles should be graded into different sizes suitable for the mouth size of the growing trout. Feeding rate varies on the basis of fish size and the water temperature. Young trout(< 30 g) need to be fed 3-10 percent of body weight per day, but 1-2 percent is sufficient for bigger ones. Depending on quality of the diet and temperature rainbow trout can reach marketable size (200-300g) within 12-14 months from free-swimming larvae. A practical feed formula for trout is given below :

Ingredients	Percentage of ingredients	Quantity for preparing 10 kg of feed (kg)
Fish meal	50	5.0
Soya flakes	10	1.0
Groundnut cake	20	2.0
Wheat flour	10	1.0
Linseed oil	9	0.9
Supplevit-M	1	0.1
Choline chloride	0.1	0.01

#### 3.3.1. Flesh colour of rainbow trout

It has been known for a long time that the red colour of the flesh of some salmonid fish is due to the presence of a fat-solvent pigment of the carotenoid group. The fish collect the pigment by eating other animals which have assimilated it from their food.

It is possible to produce a red colour in the flesh of rainbow trout by feeding dried crustaceans, to the fish for a period of about four to five weeks before they are slaughtered. Fresh prawns or prawn and shrimp meal is expensive and is only worthwhile incorporating in the fish food when a correspondingly high price can be obtained for the fish, or when crustacean food can be obtained very cheaply.

#### 3.3.2. Synthetic additives

Carotenoids have been added to the feeds of animals

and poultry to colour the food products derived from them. The natural carotenoid pigment present in most salmonid fish species is a xanthin.

A similar red-coloured carotenoid pigment known as canthaxanthin has been synthesized and is now produced commercially. It has been approved for food colouring use in Europe and Canada. Canthaxanthin fed to rainbow trout at a rate of 190 mg/kg food produces a satisfactory red colour over a period of approximately ten weeks. An alternative natural carotenoid known as astaxanthin is also commercially available.

### 3.3.3. Dietary deficiencies

The commonest cause of dietary trouble in rainbow trout is using a cheap feed, low in animal protein (lacking essential amino acids). Another deficiency which often causes large losses is a lack of thiamine (vitamin - B1). The following symptoms have been attributed to a lack of particular vitamins in the diet of rainbow trout.

**Thiamine (vitamin B1):** Loss of appetite; instability and impaired equilibrium; convulsions before death.

**Riboflavin (vitamin B2):** Loss of appetite; fish seek shade or darkness and swim deep in ponds; vision seems impaired; eye lens may be clouded and eyes bloodshot; the fish become dark in colour.

**Pyridoxine:** Loss of appetite; overactive and nervous reaction; rapid breathing and gasping mouth movements; quivering of the gill covers; fluid collects in the body cavity; the fish are anaemic and the skin on the back may darken

**Biotin:** Loss of appetite; muscular atrophy and convulsive movements, darkening of the skin; sores in the intestine.

**Nicotinic acid:** Loss of appetite; movement becomes spasmodic and jerky; fluid collects in the stomach and intestines.

**Panthothenic acid:** Loss of appetite; fish are generally unhealthy looking; gill filaments may be stuck together and covered with mucus, sores may appear on the body.

Folic acid: Slow growth; the fish are sluggish; anaemia;

colour darkens; the fins, particularly the tail fin, have a broken appearance.

**Inositol:** Poor growth and conversion. Distended stomachs.

**Choline:** Poor growth and conversion. Fatty degeneration of the liver, bleeding in the kidney and intestine.

**Vitamin E:** Poor growth and conversion; darkening of the skin.

#### 3.4. Grading, growth checking and cleaning

All fish do not grow at the same rate, some grow faster, and other remain smaller. Active and bigger fish that become dominant within a group will eat more and grow fast, while the smaller and weaker ones will eat less and grow slowly. This phenomenon is especially prominent in the high-growth-rate fry stage and in its extreme will lead to cannibalism and thus a reductionin the culture population. Thus, it is necessary to periodically thin out and grade the stock to maintain steady growth. The bigger ones should be sorted out from the smaller ones, using agrader to reduce mortality rate. The sorting by body size should be done every one or two months, with the young every fortnight or monthly. Growth checking during the grading is necessary to determine the feeding rate, feed efficiency and condition of health. Pond cleaning is another very important part and frequent pond cleaning is necessary to avoid a disease outbreak.

#### 3.5. Prevention of fish diseases

Pollution of pond water, high water temperature (>23°C), high water turbidity, high cultured stock density, overfeeding, rough handling, nutritional and vitamin deficiency and excessive nitrogen gas in water (>0.4 mg/l) are some of the primary causes of disease outbreak. Daily cleaning of non-consumed feed, excreta and unwanted deposits in the pond is the best way to prevent the outbreak of diseases. The cleanliness is a very important factor in trout farming. The trout should be cleaned and disinfected either with 10% formalin or 4 ppm KMnO<sub>4</sub> solution periodically. The infected fish should be immediately removed from the tank and due care should be taken to consult somefishery expert regarding the disease, if any.

### 3.5.1. Rules for good fish health

1. Buy only fish or eggs with known health status, i.e. has been controlled regularly by a Fish Health Service.

2. Keep an optimal density of fish in the raceways in relation to the available flow.

3. Adequate and timely feeding is essential for good economy and fish health.

4. Keep a good hygiene in the raceways, regular cleaning and disinfection of equipmentsis necessary. Keep separate equipments for separate units.

5. Make sure that the up-stream water source is free of all kind of contaminations (sewage, other fish farms etc.)

6. Avoid unnecessary handling. Treatment and sorting should be made preferably by water transport, or as careful as possible.

7. Regular health control.

8. Parasite control and preventive measures when needed.

9. Adequate treatment of diseased fish

10. All in – All out system. Raceways should be emptied and disinfected before new stock is allowed.

#### References

1.FAO Fisheries Technical Paper. No. 431 Rome, FAO. 2002. Cold water fisheries in the trans-Himalayan countries.

2.FAO Fisheries Technical Paper. No. 385. Rome, FAO. 1999. Fish and fisheries at higher altitudes: Asia.

3. State of California Department of Fish and Game, Fish Bulletin No. 107, Trout and Salmon Culture (Hatchery Methods)

4.Handling and Processing Rainbow Trout, Torry Research Station, Torry Advisory Note No. 74, 2001. FAO Corporate Document Repository

5. The State of World Fisheries and Aquaculture, FAO, 2010

6.Website of the Department of Fisheries, Himachal Pradesh



## Training programme on 'Better Management Practices for sustainable aquaculture'

A five day training programme on 'Better Management Practices for sustainable aquaculture'for SC/ST candidates was organized by MPEDA Regional Division, Mangalore at Sheshagiri village in Haveri district from 24<sup>th</sup> to 28<sup>th</sup> August, 2021.



Trainees during the programme

Sheshagiri village is located in Hangal taluk of Haveri district, and is gifted with sufficient cultivable freshwater area suitable for fish farming. There is good opportunity for new entrepreneurs to take up fish farming in the area which will eventually increase the fish production from the state, and in future may help the export production too. The people of the districts are primarily depending on agriculture activities.

As per the data from irrigation department, in Hangal taluk itself there are more than 1000 Ha area of rain fed reservoirs (earthen ponds) which are normally active (filled with water) for 6-7 months (Jun-Jul to Jan-Feb). Farmers are normally taking such reservoirs from DoF on lease basis and these ponds are the source of water for their agriculture activities (paddy and other crops). Most of the farmers are releasing seeds of Indian Major Carps (IMC) to such ponds at the beginning of the season (June or July). Carps are growing naturally in the reservoirs and are harvested at the end of the season (Jan to Feb) and is an alternative income source to farmers apart from the agriculture. The area is resided by many families belonging to SC/ST communities who

are presently engaged in agriculture and can surely opt aquaculture as an alternative income generation source along with present agriculture practices.

Keeping the above factors in mind, MPEDA Manglore Regional Division organized a 5 day training programme exclusively for SC/ST candidates at Sheshagiri village in order to educate the trainees on sustainable farming & diversification of aquaculture. The Programme was attended by 15 participants from SC/ST communities.

The training programme was inaugurated by Mr. Santhosh Koppad, Deputy Director of Fisheries, Haveri district on 24.08.2021. In his inaugural speech, he appreciated MPEDA for conducting such training programmes in the village. He advised the participants to make use of the training & start their business in prawn/fish farming. Mr. S.P. Dunduru, Assistant Director of Fisheries, Hirekerur, Mr. Vinayak Bevinahalli, Assistant Director of Fisheries, Haveriand, Dr. Prakash Pawadi, Assistant Director of Fisheries, Hangal also spoke during the occasion.



Mr. Santhosh Koppad, DD Fisheries, Haveri district inaugurating the training programme

During the five day Programme, various topics related to diversification in aquaculture were discussed by MPEDA officials and resource persons. Dr. Vishnudas

Gunaga, Assistant Director and Mr. S. Arul Raj, Jr. Technical Officer, MPEDA given a detailed technical information on the topics of aquaculture right from the site selection, selection of species, pond preparation, water quality management, feed management, disease management and harvesting.

Also the participants were updated with culture of Scampi, Tilapia, Seabass, and other diversified species. Mr. K.V. Premdev, Deputy Director, MPEDA interacted with the farmers about the schemes specifically for SC/ST farmers and also elaborated about export production and different product forms exported from the country.

Mr. Santhosh Koppad, Deputy Director of Fisheries, Haveri district and Dr. Prakash Pawadi, Assistant Director of Fisheries, Hangal, delivered lectures covering 'Various schemes available with the state fisheries for the benefit of fish farmers and fishermen and potentiality of Haveri district for fish farming'.

On third day of training programme. Mr. T. Arun Kumar, Branch Manager, Karnataka Vikas Grameen Bank, Sheshagiri village took a class on 'Role of Banks in



Mr. Santhosh Koppad, DD, Fisheries, Haveri delivering the lecture



Dr. Prakash Pawadi, AD Fisheries, Hangal delivering guest lecture



Dr.Vishnudas Gunaga, AD, MPEDA taking the technical session



*Mr. Arul Raj, JTO, MPEDA taking technical session* the upliftment of marginal farmers', which was well appreciated by the participants.

A field trip was arranged for trainees on the second day of the training, the trainees were taken to the fish farm belonged to Mr. Kantappa Hittalmani located at Sheshagiri village in Hangal Taluk. Mr. Basavaraj Hittalmani, Farm Caretaker explained the various



Field visit during the training programme



Mr. K.V. Premdev, DD, MPEDA distributing certificates

activities being carried out to the trainees. MPEDA officials clarified the doubts raised by trainees during the field visit.

The five day training programme concluded with the valedictory session on 28.08.21 afternoon. Mr. K. V. Premdev, DD, MPEDA handled the interactive session



Trainees and officials of the programme on the valedictory day

and Mrs. Nayana Harijan, Sarpanch, Gram panchayat, Sheshagiri village chaired valedictory session.

Mrs. Nayana Harijan thanked MPEDA for conducting such informative training programmes for the benefit of the SC/ST communities and distributed the certificates to the trainees in the valedictory section.

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



Mr. Johnson D' Cruz handling technical session

PEDA Regional Division, Kochi organized training programme on "Eco-friendly and Sustainable Aquaculture through Species Diversification" at Erumapetty Gramapanchayat in Thrissur district from 14-16 September 2021 as a part of its aquaculture extension programmes.

The training programme was mainly aimed to benefit new farmers to promote sustainable and



Mr. Basanth Lal, President Erumapetty Grama Panchayat inaugurating the training

diversified aquaculture production by adopting Better Management Practices (BMPs). 15 farmers from Thrissur district participated in the programme. The training programme was inaugurated by Mr. Basanth Lal, President, Erumapetty Gramapanchayat. Mrs. Bindhu Gireesh, Vice president Erumapetty Gramapanchayat, ward members Mr. Saji P. M., Mr. Jose M. K., officials from panchayat and MPEDA RD Kochi attended the inaugural function.

The trainees were taught about the different aquaculture practices suitable for the locality. Culture aspects like stock assessment, feed & water quality management, health - disease management, PHT sampling, harvesting methods, post harvest management, marketing aspects related to species like Scampi, Seabass, Tilapia etc. were covered in the training programme.

Presentations on MPEDA schemes, issues related to use of banned antibiotics, and recent trends in aquaculture were also included in the programme. The technical sessions were handled by officials of MPEDA RD Kochi including Mr. Johnson D' Cruz, Deputy Director, Dr. Jayagopal P., Assistant Director, Mr. Bijimon P., JTO, and Mrs. Beena, Fisheries Vocational Higher Secondary School teacher (retired) and Mrs. Stephy Xavier, Project Coordinator, Dept. of Fisheries, Thrissur.

A valedictory function was organised on the last day in which stipend and training certificates were distributed in presence of Panchayat officials.



## NaCSA organized awareness programme on the harmful impacts of single use plastics

ne day awareness programme on the harmful impacts of single use plastic & plastic waste management was conducted in the M/s. B. R Ambedkar Aqua Farmers Welfare Society, Thalarevu on 8<sup>th</sup> October 2021.

The programme was attended by Mr. M. Bala Subramanyam, High School Teacher, Mr. V. Nagababu, FDO, Thalarevu, NaCSA staff and the farmers of M/s B. R Ambedkar Aqua Farmers Welfare Society. Mr. D. Ekka, Deputy CEO, NaCSA inaugurated the programme and a brief account on the purpose of awareness programme was given.

Mr. Bala Subramanyam and Mr. Nagababu explained the harmful impact of single use plastic and how it is harmful for human beings and environment.

They have also explained how to recycle and reuse the plastic for reducing the impact to the environment.Awareness programme concluded with the vote of thanks of



Mr. Chandrasekhar, RCO, NaCSA. As part of the awareness programme cloth bag was distributed among the society farmers and guests.

## Safe Seafood

Screen the presence of Antibiotics in seafood with Bioeasy ELISA Test Kit



Incubation time of FIVE minutes

Results can be analyzed by open software designed for ELISA





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## Mediterranean Shrimps

### **Recipe Card**

Indian Vannamei Shrimps	: 450gm
Flour	: 10 gm
Paprika	: One teaspoon
Crushed black peppercorn	: One teaspoon
Salt to taste	
Coriander Powder	: One teaspoon
Cayenne Pepper	: One teaspoon
Sugar	: One teaspoon
Butter	: One tablespoo
Olive oil	: Two tablespoo
Sliced Shallots	: One cup
Chopped garlic	: Two tablespoo
Sliced Red and Green Bell Pepper	: One cup
Peeled and Diced Tomato	: One cup
Chicken Broth	: 100ml
Sherry	: 50 ml
Lime	: 1 no.s
Chopped Parsley	: One tablespoo

#### Instructions

Pat the cleaned Indian Vannamei shrimps dry.

Mix in crushed black pepper, salt, sugar, paprika, flour, coriander powder and cayenne.

Add the shrimps and coat well.

In a skillet, melt olive oil and butter over medium heat.

Add shallots, garlic and cook until fragrant.

Add bell peppers and cook for another four minutes

Add the shrimps and cook for a minute.

Add sherry, chicken broth, diced tomatoes, lemon juice, salt and mix well.

Cook until the shrimps turn orange in colour.

Add the chopped parsley and serve with cooked rice.

Prep time: 20 minutes

Cooking time: 20 minutes

Serves 4



Scan the QR code to watch the recipe in Youtube



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## MPEDA –NETFISH organised hands on training programmes on value addition of cephalopods

Worth Rs. 6467.29 Crore to China in 2020-21, of which cuttlefish was the major item with an export quantity of 4,895 MT worth Rs. 99.88 Crore. Major fishing harbours in West Bengal contributed 2,696 MT of cuttlefish and 1,472 MT of Squid during the said year. Sizeable quantity of cephalopods (about 50 MT) are landed daily in different fish landing centres and fishing harbours of the state, and mainly exported to China in whole block frozen form for value addition.

It would be appropriate if this raw material is processed to value added products in India itself, which will open up export opportunities to markets such as European Union and USA, and earns better unit price than raw material exports.

With an aim to develop skills for preparation of value added products from cephalopods such as Cuttlefish Whole Cleaned (CFWC), Cuttlefish Fillet (CFF), Cuttlefish Tentacles (CFTN), Squid Whole Cleaned (SQWC), Squid Tentacles (SQTN), Squid Rings (SQRG), Stuffed Squid, tray packed products etc., MPEDA-NETFISH has organized six hands-on training programmes during August 2021 in Kolkatta. Workers of 6 EU approved processing establishments from West Bengal were trained on pre-processing /peeling and processing of cephalopods to produce different value-added products from Cephalopods. A total of 147 workers, supervisors, Technologists, Management staffs etc. were trained through these programmes. A team consisting of NETFISH state coordinators of West Bengal & Gujarat and 3 trained supervisors from Veraval, Gujarat served as trainers.

The hands-on training programme comprised of preprocessing activities, different treatment process, processing, freezing (Blast freezing /Individual Quick Freezing) and final packing. After the hands-on training programme, technical sessions were conducted with



A view of the trainees



Mr. Archiman Lahiri, DD MPEDA, Kolkata hands over certificate to the processing plant



Hands - on training

## QUALITY FRONT



Technical session during the training

the managerial staff, technologists and supervisors for better technical understanding and necessary documentation of export to EU countries.

It is expected that the training programme will serve as a turning point for value addition of Cephalopods for exports to EU & USA. The enthusiasm generated



Tray packing

by the training programme saw an increase in the cephalopod rates in Digha mohana, the largest marine fish auction market in India, benefitting the fishers. After the training programme, an exporter also got an export order from EU, based on which they have started their production. Other exporters are also preparing to produce and export value added cephalopod products.

## MPEDA opens 16<sup>th</sup> ELISA Lab at Haroa, West Bengal

The farmed shrimps meant for export to EU are mandated to undergo Pre Harvest Testing (PHT) in the ELISA Laboratories set up by MPEDA. The raw material is screened for the presence of banned antibiotic residues such as Nitrofurans and Chloramphenicol. MPEDA has set up 16 ELISA Laboratories for this Pre Harvest Testing certification programme in the farming clusters of coastal states right from Gujarat to West Bengal.

Responding to the demands from the aqua farmers of North 24 Parganas district in West Bengal, MPEDA has opened its 16<sup>th</sup> ELISA Laboratory at Haroa on10<sup>th</sup> September 2021. The laboratory is expected to cater to the antibiotic testing needs of aqua farmers in entire North 24 Parganas district. The lab was formally inaugurated by Mr. K.S. Srinivas IAS, Chairman, MPEDA, in presence of Mr. I.P.R. Mohan Raju, President, Prawn Farmers Association of India, Hyderabad and Mr. Rajarshi Banerjee, Member, MPEDA and President, Seafood Exporters of India, West Bengal region, Mr. Apurba Saha, Director, M/s. Blue Sea Aquaculture Pvt. Ltd., Mr. S. G. Dwivedi, Joint Director, EIA, Kolkata.

The function was attended by Dr. M. Karthikeyan, Director, MPEDA, Dr. Ram Mohan M.K., Joint Director (QC), MPEDA, Mr. Anil Kumar P., Joint Director (Marketing), MPEDA, Mr. G. Mahesh, Deputy Director (Lab), Mr. Archiman Lahiri, Deputy Director, MPEDA, Regional Division, Kolkata, farmers, and other MPEDA officials.

## QUALITY FRONT

In his felicitation address, Mr. I. P. R. Mohan Raju appreciated the initiative taken by the Chairman to open an ELISA lab at Haroa and told that this will help the exporters to check the quality of shrimps grown by farmers thereby reducing the antibiotic rejections instances.

Mr. Rajarshi Banerjee recalled the request placed by him to Chairman, MPEDA on the need for the ELISA laboratory and said that it will go a long way in sourcing quality raw material from the region. Mr. Apurba Saha thanked MPEDA for the much awaited initiative for opening up of the Lab. Mr. S. G Dwivedi emphasized on the need of ELISA testing for securing quality raw material and first step towards esurient of quality. He has also added that analysts play a key role in bringing out proper analytical services for the labs.

Chairman, MPEDA while inaugurating the ELISA Screening Lab and emphasized on the need to contain the detection of antibiotic residues in farmed shrimp consignments in markets such as EU, USA and Japan for enhancing our market share by ensuring the quality. He urged the farmers to utilize the laboratory services at its maximum so that they will get a better sales value by ensuring



the quality and traceability of the produce. Chairman, MPEDA also expressed delight over the positive approach expressed by famers of the district to withhold the species Black Tiger.

Earlier, Dr. M. Karthikeyan delivered the introductory remarks and welcomed the participants, which was followed by a district synopsis on North 24 Parganas on fisheries aspect and a video footage of laboratory facilities. Mr. Archiman Lahiri gave a brief presentation on the fisheries profile of the North 24 Parganas district and also proposed the vote of thanks.



### **NEWS SPECTRUM**

## India seeks to develop seaweed and shrimp sectors

ndia's Central government is looking forward to developing a sustainable seaweed cultivation sector, as well as stepping up a shrimp ranching initiative, according to Jatindra Nath Swain, country's fisheries secretary.

At a time when climate change is increasingly posing a major threat to human life across the globe, cultivating seaweed, will help to boost the economy and reduce the impact of climate crisis as well, he said. He was speaking at an interactive meeting with scientists from the Central Marine Fisheries Research Institute (CMFRI), held at

its headquarters in Kochi.

"An additional livelihood option, seaweed farming will play a major role in the socio-economic upliftment of traditional fishermen during this difficult time," the secretary said. He asked the CMFRI to set up a seedbank of seaweeds."Marine scientists should come up with ways for capacity development to enhance seaweed cultivation on largescale," Swain said, adding that the Pradhan Mantri Matsya Sampada Yojana (PMMSY) has a special thrust for the promotion of seaweed farming.

He was on a visit to Kerala to understand the issues and challenges being faced by the sector after taking over the portfolio four months ago. Apart from those in the Kochi headquarters, CMFRI scientists from various regional research stations across the country also attended the meeting. Elaborating on the country's ambitious plan in the marine fisheries sector, the Fisheries secretary said that India aims to double its seafood exports in the next five years."We are hopeful of achieving this target by exploring innovative ways to increase the production that will certainly upscale the country's per capita income," he said.

Technological development is crucial in this regard especially for areas such as seed production and

other hatchery infrastructure for diversified mariculture activities, he said.

Emphasising the need to promote better livelihood options to support traditional fishermen, he said that strengthening of aquaculture and marine fisheries by utilising the technological advancements would help them fetch good income and improve their living standard.

"The government is in supportive of promoting the cage fish farming, which is also an alternative source of income, in a big way that would help the traditional fishermen

to double their income", Mr Swain said and lauded the efforts of CMFRI to give a major boost to this practice across the coastal states.

He added that stocking green tiger shrimp post-larvae into parts of the sea also has great potential, following CMFRI's successful adoption on the project in Palk Bay. Flagging his concern on resource depletion and ecosystem degradation, he urged scientists to focus on ways to promote responsible fishing and to adopt appropriate mechanisms to improve sustainable fishing.

www.thefishsite.com



## NEWS SPECTRUM

## Sikkim declares 'Katley' as state fish

he Sikkim government has declared 'Copper Mahseer' locally named 'Katley' as the state fish, an official of the Fisheries department said. The official said the state government has declared Neolissochilus hexagonolepis commonly known as Copper Mahseer and locally named as 'Katley' as a state fish to highlight the importance of the fish and to give emphasis to its conservation measures.

"In Sikkim, Katley is found in varied altitudes covering entire state predominantly confined in Teesta and Rangit rivers and their tributaries. In the year 1992, ICAR-National Bureau of Fish Genetic Resources (ICAR-NBFGR), Lucknow had categorized Katley fish as endangered species. Later on, in the year 2014 the fish was also categorized as endangered by the IUCN (International Union for Conservation of Nature)," said Additional Director of the Directorate of Fisheries, C.SRai.

The fish has high market value and is highly preferred by the public in the state. The official said the Sikkim



government has also declared the reservoirs of the state to be open for fishing activities. License shall be issued by the Directorate of Fisheries to the interested individual fishermen or fishermen co-operative societies or SHGs for fishing in the reservoirs in accordance with the existing provisions under the Sikkim Fisheries Rules, 1990, he said. The reservoirs are in Chungthang in North Sikkim, Legshep in West Sikkim along with Dikchu and Ror.

www.economictimes.indiatimes.com



## India seeks curbs at WTO on fishing in distant waters

ndia has pitched for reduction in fishing capacity of countries that fish in distant waters or in the territorial waters of other countries, in a bid to balance overfishing subsidy restrictions with the special needs of developing and least-developed countries.

New Delhi has submitted a proposal at the World Trade Organization (WTO), stating that developing countries not engaged in distant water fishing should be exempt from overfishing subsidy prohibitions for 25 years, and only those that have overexploited the environment should bear the cost of managing the problem.

India made its submission at the ongoing negotiations to finalise disciplines to eliminate subsidies for illegal, unreported and unregulated (IUU) fishing, and prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing, ahead of a key ministerial conference of the WTO later this year.

However, New Delhi has retained the exception in the chair's text for artisanal and low-income fishers, but said it should be without the time and geographic limit contained in the chair's text.

"India's proposal supports the "polluter pays" approach, by targeting distant water fishing nations in the bulk of prohibitions for subsidies related to overfishing." the official said. As per the proposal, overfishing would be self-determined by a member or by Regional Fishery Management Organisation for waters under their respective jurisdictions. This is in contrast to the hybrid approach in the chair's text that presumed certain types of subsidies to be contributing to overfishing, such as subsidies for vessel construction, fuel, income support, if no measures are in place to maintain stocks at healthy levels.

www.economictimes.indiatimes.com



## MPEDA IN SOCIAL MEDIA

### SOCIAL MEDIA REPORT: SEPTEMBER



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## MPEDA IN SOCIAL MEDIA

### SOCIAL MEDIA REPORT: SEPTEMBER

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FOLLOWERS - 3,029	Accounts Reached	3,549 >
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