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CPF-TURBO PROGRAM -

Pioneering Successful and Profitable Shrimp Aquaculture

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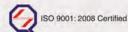
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K. S. Srinivas IAS Chairman

Dear friends,

s you are aware. I have taken charge of the Marine Products Export Development Authority on 13th August, 2018. With the export quantity and export earnings setting up record figures every year, I understand that the marine products sector is vibrant in its various spheres of activities with enthusiasm of the stakeholders and the innovations brought in by them.

Yet, a preliminary study to the sector makes me aware that this sector faces various challenges that act as impediments for exponential growth. MPEDA's focus will be on clearing out such obstacles rooting on the sustainability of resources and through adoption of best practices in production and processing value chains.

The US authorities are extending their Seafood Import Monitoring Programme (SIMP) to shrimp and abalone also by the end of this year. Shrimp, being the principal commodity of exports from India to the US, this development is very important to us. MPEDA has geared up its information dissemination activities among the stakeholders on SIMP.

Traceability is a key factor in marketing a commodity, which along with quality stimulates customer confidence and acceptance. The labelling requirements of most of the markets demand proper traceability at least up to the manufacturer level. However, the trend in developed markets is to trace the value chain up to the ultimate producer. We knew about this approach when the European Union introduced the catch certification system in 2010. The US Government has broadened the scope of traceability requirement to farmed products also under SIMP.

Our farmers and exporters needs to transform according to the changing marketing situation. As we already have a system of catch certification system, compliance to the traceability of wild catch items under SIMP may not pose a big challenge. Moreover, our exporters have been furnishing traceability data to their US counterparts for the wild caught items other than shrimp since January, 2018. However, with the inclusion of shrimp under SIMP from 1st January, 2019, we need to ensure the traceability up to the farm level to comply to the US requirements.

For this to happen, it is important that each farm shall be identifiable through the common database so that the importer as well as US authorities could easily verify and endorse the source of procurement. MPEDA had been doing the enrollment of farms since 2016 and so far have covered over 64,000 farms under the programme. Our efforts to ensure traceability to the fullest extent would be complete only when all the farms in the country have been completely enrolled. This will help to confidently present our traceability network before any buyer in any country.

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Clean Beaches on World Ocean Day

NETFISH Sea Club at St Albert's College, Ernakulam marked this year's World Ocean Day by conducting awareness campaign and cleaning up Vypeen and Fort Kochi beaches in Kochi.

The Conservation Research Group of the college also collaborated with the programme. Mr. A. K. Chaudhary, Director CIFNET, inaugurated the programme. Vice Principal Rev. Fr. John Christopher Vadassery presided over the function held at the college on June 26. Dr. M. L. Joseph, Principal of the college; NETFISH CEO Dr. Joice V. Thomas; State Coordinator Mr. Santhosh N.K., Dr. Ajith Thomas John, HOD of the Research Department of Fisheries and Aquaculture and Dr. Bijoy V. M., spoke on the occasion.

After the inaugural function, the sea club members and staff members set out for the beach clean-up. A team consisted of 40 students guided by 4 teachers of the Sea Club actively cleaned the Vypeen beach in the forenoon and the Fort Kochi beach in the afternoon.

NETFISH CEO and State Coordinator also took part in the event. Around 30 bags of waste materials consisted of plastic bottles, glass bottles, empty cans of soft drinks, slippers, styroform pieces, net pieces, plastic carry bags etc. were collected from the beaches. The collected waste bags were taken to the waste collecting site of Kochi Corporation. Hand gloves, face masks, and caps were provided to the participants for the clean-up drive.







We are not just celebrating a milestone. We are celebrating India's rise as a powerhouse in shrimp production as we watch the Vannamei shrimp, that we fought to introduce, change the industry. We are celebrating countless seafood platters that our farmers brought to dinner tables all over the world. We are celebrating the success saga of our farmers, dealers, employees and partners. Join us, as we set our eyes on scaling newer heights.

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Students cleaning up the Fort Kochi beach



Sea Club members cleaning Vypin beach



Mr. A. K. Chaudhary, Director, CIFNET inaugurates the programme

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'World Environment Day' and 'World Oceans Day' celebrated

Neendakara, Suchitwa Mission of Kollam, Kollam Corporation and Fort Church Kollam cleaned up Thankassery Fisheries Harbour to mark the 'World Environment Day' on June 5. An awareness class on "Beat plastic pollution" was also held.



NETFISH State Coordinator, Mrs. Sangeetha N.R. speaks on the World Environment Day

More than 300 people, including NSS volunteers from S.N. College Kollam, TKM College Kollam and Pakkulam HSS participated in the programme. The harbour cleanup drive was inaugurated by Mr. S. Venugopal, Vice President, Kollam District Panchayat. The plastic waste collected during the clean-up programme was handed over to Suchitwa Saagaram project for shredding. Dr. Arul B. Krishna, Superintendent of Police, Kollam inaugurated the awareness class organized as part of the celebration. Mrs. Sangeetha N. R., State Coordinator NETFISH proposed vote of thanks.

'World Oceans Day' is observed on June 8 worldwide, to spread awareness about the importance of oceans. NETFISH, Neendakara Coastal Police and Alappaad Grama Panchayat jointly organized a clean-up programme at Azheekkal Fishing Harbour on that day. NSS Volunteers, fish workers and other coastal people actively participated in the clean-up mission. The programme also helped to create awareness on the need for keeping sea and coastal area free of plastic wastes. The wastes collected during the event was sent to the plastic shredding unit established

NETFISH, in association with Coastal Police Station rally by the participants to the harbour via Azheekkal beach. Alappad Panchayat President Mrs. P. Seleena inaugurated the programme.

> In Gujarat, a stakeholder's consultation meeting "Moving Towards Sustainable Fishing" was organized at Mangrol Fishing harbour on June 8 to mark 'World Oceans Day'. Officials of Department of Fisheries, MPEDA, CIFT, CMFRI, College of Fisheries and President and members of Boat Associations attended the programme. Mr. Jignesh Visavadia, State Coordinator, NETFISH explained the importance of celebrating 'World Oceans Day'.



Mr. Veljibhai K. Masani, Authority Member, MPEDA inaugurates the stakeholder's consultation meeting at Gujarat

Mr. Veljibhai K. Masani, Authority Member, MPEDA inaugurated the event. A power point presentation on 'the present scenario of marine fish catch and sustainable fishing' was done by Mr. Jitesh Solanki, Assistant Professor, College of Fisheries. Dr. Prajith K. K., Scientist, CIFT explained the use of square mesh cod end in conserving juvenile fishes and he urged the fishers to avoid catching juveniles of fishes and to practice sustainable fishing.

The stakeholders gave their views on sustainable fishing and the possible measures to be taken to protect undersized fishes. All the participants took an oath to conserve the marine resources by avoiding juveniles fishing, implementing 40mm square mesh cod end in trawl and not throwing plastic wastes in to seas. Mr. Kanjibhai Jadav, President, of B. A. Yadav Education and Rural Development Foundation Trust, offered support at Neendakara. The clean-up drive started with a to NETFISH to execute the programme successfully.

Skill Development on Square **Mesh Cod-end Fabrication**



Mr. T. Dola Sankar, Director (M), MPEDA delivering the inaugural address

quare mesh cod-ends in trawl nets spares juveniles of fish varieties, squids, cuttlefish etc. thereby helping sustainable fishing. In addition to this ecological benefit, it also has economic advantage in terms of less fuel consumption when compared to the conventional diamond shaped cod-ends. However, the usage of square mesh nettings in fisheries sector has not yet been effectively implemented till now.



Demonstration of square mesh fabrication at Karwar

As part of the popularization of the square mesh cod ends in trawlers, NETFISH organized skill development training programmes on 'Square mesh cod-end fabrication' at Munambam, Kerala and at Karwar,

Karnataka in June 2018. These sessions were funded by the National Fisheries Development Board (NFDB), Hyderabad. The training at Munambam was carried out with the technical assistance of ICAR- CIFT. Kochi, whereas in Karwar the technical support was rendered by the resource person from Fisheries College, Mangalore. Each training programme was attended by fifty beneficiaries, mostly the net menders. Mr. T. Dola Sankar I.O.F.S., Director (Marketing), MPEDA inaugurated the training programme at Munambam, Kochi on June 19. Mr. K. Sivarajan, Deputy Director (SSP), MPEDA delivered the introductory speech. Mr. Noby P. S., Technical Officer, ICAR- CIFT: Mr. Binu P. J., President, Trawl net Workers Welfare Association, Munambam; NETFISH CEO Dr. Joice V. Thomas and State Coordinator Mr. Santhosh N. K. spoke.

In Karwar, Dr. Senthil Murugan, Senior Scientist, CMFRI, Karwar inaugurated the training programme held on June 29 at the conference hall of CMFRI, Karwar. Dr. S. Shassi, Assistant Director, MPEDA, Mr. Venkatesh Naik, Secretary, SCODWES; Mr. Dilip Chendekar, President, Trawl Boat Union, Baithkol, Karwar and Mr. Riyaz, Programme Manager, SCODWES (Sahyadri Community Development and Women Empowerment Society), spoke.

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Mr. T. Dola Sankar, Director (M), MPEDA inaugurates the training programme at Munambam



Dr. Senthil Murugan, Senior Scientist, CMFRI inaugurates the training at Karwar



Trainees from Karwar with the dignitaries

NETFISH State Coordinator, Mr. Narayana K. A., explained the objectives of organizing square mesh fabrication training to the fishers. After the inaugural session, Dr. Hanumanthappa, Professor, Fishery Engineering Department of the Fisheries College, Mangalore who



Net menders at Munambam engaged in mesh conversion

was also the resource person for the programme, gave a talk on square mesh in brief. He urged the trawl boat owners to use only 35 mm square mesh cod end to save the trawl fishery.

The commonly used diamond mesh can be converted into square mesh by a simple cutting and re-joining technique and with such net material, square mesh cod end can be fabricated. This technique was first demonstrated by the resource person to the trainees. Later on the trainees were provided with diamond shaped net material, scissors, needle and twine to practice and fabricate square mesh cod end. Evaluation of the converted net was done and corrections were given wherever necessary.

Feedback from each of the trainees was collected and participation certificates were issued.

Awareness campaigns on 'Safety at Sea'



Distributing Life jackets to fishing boat operators at Munambam

ea Safety is an area where the sea going fishermen give least attention. In many of the fishing vessels, basic life-saving equipment like life jackets and life floats are absent or inadequately stocked. In the effort to impart awareness on fishers about Sea Safety and Safe Navigation, a series of awareness campaigns were organized by NETFISH in June 2018.



Dr. Joice V. Thomas, CEO, NETFISH talks on sea safety to fishermen

In West Bengal, three training programmes on "Sea

Safety and Navigation" were conducted on June 6, 7 and 14 at Dashmile, Akshaynagar and Deshapran harbour respectively. A total of 110 skippers /drivers of mechanized fishing vessels were trained. Mr. Abhijit Dasgupta, Station Commandant of Coast Guard, Freserganj attended the programme at Dash mile and described on the legal requirements for fishing in Indian waters, conservation of marine fisheries, lifesaving equipment etc.

Inaugurating the programme at Deshapran, Mr. P K Pahari, Special Officer, Deshapran FH highlighted on safety and security during fishing. State Coordinator Mr. Atanu Ray elaborated on safety at sea, importance of registration and licensing of fishing boats, use of different life saving equipment, various communication systems, Rules of the Road, different day time signals and light signals at night for safe navigation etc. All the skippers realized the importance of safe navigation for safe fishing.

NETFISH CEO Dr. Joice V. Thomas led class on basic

life-saving equipment, navigation equipment and navigation signals at the programme conducted on June 13 at Munambam. Mr. P. P. Gireesh Chairman, Fishing Boat Owner's and Operator's Coordination Committee, Munambam, Mr. Sudhas Thayat, President, Munambam Yanthravalkrutha Matsyabandhana Pravarthaka Sangham and Mr. P. X. Stanley, President, Fishing Boat Operators Relief Association too attended the programme. The trainees were made aware on the necessity of life saving equipment in fishing boats and as an encouragement 81 life jackets were distributed to fishing boats in the programme.

A Sea Safety programme was organized for 30 fishers and fish workers at Poombuhar, Tamil Nadu on June 29, in association with MSSRF. The fishers were made aware about the importance of personal safety and

demonstrated the safety instruments and how to handle an emergency situation. The trainees gained the knowledge about the safety equipment and there were requests for NETFISH to provide lifesaving apparatus at subsidized rate.



Sea Safety programme at Dashmile





Fishers taught how to use GPS devices



GPS training at Pudimadaka

NETFISH in association with its member NGO, DFYWA organized a 'GPS (Global Positioning System) handling and troubleshooting training' on June 14 to the boat owners and crew members of Tuna fishing vessels at Pudimadaka fish landing centre, Visakhapatnam.

Mr. P. Hanumantha Rao, State Coordinator, NETFISH explained to the trainees about the use of GPS device in fishing and marking of fishing grounds. Mr. B. Thavudu, Programme Coordinator, DFYWA explained about the significance of handheld GPS in motorized boats, which are going for fishing with very limited quantity of fuel. Marking of fishing grounds with GPS will enable fishers to minimize searching effort which in turn can save fuel and time. Also, the freshness of catch can be maintained as the boats can reach back to the landing centre early.



GPS training at Poombuhar

Mr. Nagaraju from GARMIN Company explained the participants about the different navigational devices used in fishing vessels. The available models of handheld GPS which can be operated with battery were introduced to the Tuna fishing boat owners and a demonstration of operation of GPS devices was also done. The fishermen were given opportunity to operate the devices by themselves and to clear their doubts in marking route and fishing grounds. The training helped the fishers to understand the usefulness of GPS device in fishing.

Another GPS training was conducted on June 28 at Poombuhar, TamilNadu with the assistance of member NGO, MSSRF. A total of 30 participants including boat drivers, boat labours, boat owners and fishers, who were interested in learning new skills, attended the programme.

The trainees were taught about the importance of GPS in safe navigation and they were provided hands on training on GPS handling and its troubleshooting techniques. They were also made aware on the advantages of GPS such as improving the fishing efficiency by reducing fish searching time, diesel consumption and carbon emission level.

Highlights of marine fish landings in selected harbours of India during June 2018

NARAYANA K. A., V. V. AFSAL, N. J. NEETHU AND JOICE V. THOMAS

India's marine fish landings has shown a sign of revival with the annual fish landings in 2017 registering 5.6% growth as against the previous year. As per the report released by CMFRI, the total marine fish landings in India in 2017 was 3.83 million tons. To facilitate the MPEDA's Catch Certification scheme, NETFISH records the marine fish landings and boat arrivals occurring at the major harbours of India. The analysis result of fish landing and boat arrival data obtained for the month of June 2018 is presented in this report.

The harbour Data Collectors stationed at selected major landing sites across the country (see Table 1) had recorded Fish Catch and Boat arrivals information on a daily basis, both from primary and secondary sources. Approximate quantity of various fish species landed in a day at the harbour was obtained by eye estimation. The name, registration number and type of fishing vessels arrived at the harbour were also recorded. These data were further analysed using online applications and MS office (Excel) tools to arrive at species-wise, region-wise, state-wise and harbour-wise estimations. Data from 30 harbours, obtained during the period, was analysed for this report.

Table 1. List of harbours and landing centres selected for data collection

Sl. No.	State	Fishing harbour
1		Beypore
2		Puthiyappa
3		Thoppumpady
4	Kerala	Munambam
5		Thottapally
6		Kayamkulam
7		Vizhinjam
8	Maharashtra	Harne

9		Gujarat
10	Gujarat	Malpe
11		Gangoli
12		Digha (Sankarpur)
13		Deshapran
14	V/ost Dongal	Namkhana
15	West Bengal	Sultanpur
16		Kakdwip
17		Raidigi
18		Paradeep
19	Odisha	Balaramgadi
20	Odisha	Bahabalapur
21		Dhamara
22		Chennai
23		Pazhaiyar
24		Nagapattinam
25		Tuticorin
26	Tamil Nadu	Cuddalore
27		Mandapam
28		Pondicherry
29		Karaikal
30		Chinnamuttom

Evaluation on fish landings

The fish catch data obtained from 30 landing sites during June 2018 totalled to a quantity of 11619.06 tons, which was comprised of 4439.45 tons (38%) of Pelagic finfishes, 2889.96 tons (25%) of Demersal finfishes and 4289.65 tons (37%) of Shellfishes, whereby the Pelagic resources contributing the maximum quantity (Fig. 1).

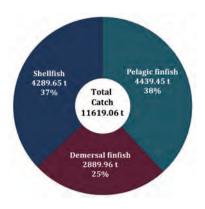


Fig. 1. Category-wise fish landings during June 2018

Anchovy
5%
Indian
mackerel
6%
Cuttle Fish
6%

Fig. 2. Major fishery items landed during June 2018

The total catch was comprised of 94 varieties of marine fishery items, among which the top five contributors in the order of abundance were *Poovalan* Shrimp, Croaker, Cuttlefish, Indian mackerel and Anchovy (Fig. 2). These 5 fishery items together formed 34% of the total catch. The other major fishery items were Sea crab, Bombay duck, Squid and Indian oil sardine, each contributing more than 4% share to the total catch. The Rock lobster, which recorded a quantity of 0.08 tons, was the species which registered least landing during the month.

The quantity of various fishery items recorded during June 2018 is given category-wise in Table 2. Anchovies, Indian mackerel and Bombay duck were the pelagic finfish varieties which recorded the highest landings whereas in the case of demersal finfishes, the major contributors were Croaker, Pomfret and Catfish. Among the Shellfish stock, comprised of Molluscs and Crustaceans, Penaeid shrimps held more than 55% of the share and the major contributors were *Poovalan* shrimp, Cuttlefish and Sea crab.

Table 2. Category-wise landing of various fishery items during June 2018

Fishery item	Quantity in tons	% of Total Catch
Pelagic finfish		
Anchovies	760.11	6.54
Indian mackerel	638.97	5.50
Bombay Duck	517.61	4.45
Indian Oil Sardine	484.14	4.17
Ribbon Fish	381.58	3.28
Scad	363.63	3.13
Tuna	328.19	2.82
Hilsa	226.57	1.95
Trevally	105.34	0.91
Seer Fish	91.74	0.79
Barracuda	74.37	0.64
Dolphin fish	69.35	0.60
Lesser sardines	67.11	0.58
Leather jacket	59.62	0.51
Oriental Bonito	58.20	0.50

Herrings	47.46	0.41
Sail fish	40.00	0.34
Silver sillago	30.65	0.26
Mullet	30.00	0.26
Marlin	19.90	0.17
Horse mackerel	12.30	0.11
Indian salmon	12.28	0.11
Queen fish	10.55	0.09
Sea bass	4.80	0.04
Cobia	3.40	0.03
Indian thread fish	1.60	0.01
Total	4439.45	38.21
Demersal finfish		
Croaker	742.06	6.39
Pomfrets	445.25	3.83
Cat fish	394.63	3.40
Japanese Thread fin bream	338.13	2.91

Snapper	262.27	2.26
Lizard fish	166.20	1.43
Sole fish	163.83	1.41
Pony fishes	70.80	0.61
Eel	55.15	0.47
Bull's eye	51.66	0.44
Goat fish	47.97	0.41
Rays	41.27	0.36
Reef cod	33.49	0.29
Moon fish	22.29	0.19
Emperor Bream	17.32	0.15
Whip fin silver biddy	11.65	0.10
Indian Halibut	8.49	0.07
Parrot fish	7.86	0.07
Long spine sea- bream	6.10	0.05
Spine foot	1.40	0.01
Filefish	1.10	0.01
Trigger fish	0.50	0.00
Guitar fish	0.30	0.00
Yellow fin sea bream	0.25	0.00
Total	2889.96	24.87
Shellfish		
Penaeid Shrimps	2378.89	20.47
Non-penaeid Shrimp	9.20	0.08
Sea Crab	525.99	4.53
Mud Crab	2.86	0.02
Lobster	2.28	0.02
Cuttlefish	676.67	5.82
Octopus	193.14	1.66
Squid	500.64	4.31
Total	4289.65	36.92
Grand Total	11619.06	100.00

Region-wise landings

From the South West coast, landings were reported from 7 harbours along the Kerala coast during the period, which totalled to a quantity of 4044.31 tons,

whereas from the North West coast 644.98 tons of landing was recorded in all from 3 harbours of Gujarat and 1 harbour of Maharashtra (Fig. 3). The South East coast registered a total landing of 2180.38 tons, which was comprised of data from 9 harbours of Tamil Nadu and the North East coast, comprised of 6 harbours of West Bengal and 4 harbours of Odisha, registered the highest catch of 4749.40 tons.

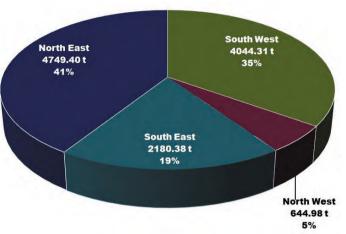


Fig. 3. Region-wise landings recorded during June2018

The five major fishery items which had contributed predominantly to the landings in each region are given in Table 3.

Table 3. Major items landed in each region during
June 2018

Item	Quantity in tons	% of total landings of the region	
South West			
<i>Poovalan</i> shrimp	1175.56	29.07	
Anchovy	444.48	10.99	
Indian mackerel	358.35	8.86	
Indian oil sardine	228.40	5.65	
Layang scad	223.10	5.52	
North West			
Ribbon fish	127.35	19.74	
Indian mackerel	121.60	18.85	
Cat fish	99.90	15.49	
Croaker	61.70	9.57	
Squid	35.50	5.50	

South East			
Cuttlefish	433.44	19.88	
Squid	191.85	8.80	
Indian oil sardine	117.45	5.39	
Indian mackerel	111.17	5.10	
Indian scad	98.08	4.50	
North East			
Bombay duck	505.75	10.65	
Croaker	402.10	8.47	
Sea crab	285.90	6.02	
Croaker	247.63	5.21	
Hilsa	217.97	4.59	

State-wise landings

Kerala reported the highest marine fish landing during June 2018, which was to the tune of 4044.31 tons, forming 35% of the total catch (Fig. 4). This was followed by West Bengal, where 3548.55 tons (31%) were recorded.

No landings were reported from Karnataka and Goa because of the fishing ban which began on June 1, whereas in Andhra Pradesh no landing was reported as the fishers went on strike soon after lifting of fishing ban on June 15.

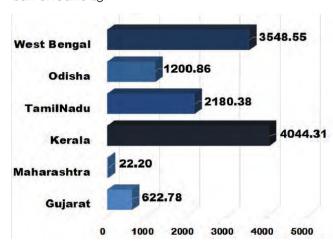


Fig. 4. State-wise fish landings (in tons) during June 2018

The major five fishery items which had contributed significantly to the landings in each state during June are given in Table 4.

Table 4. Major items landed in various states during June 2018

Item	Quantity in tons	% of total landings of the state		
Kerala				
Poovalan shrimp	1175.56	29.07		
Anchovy	444.48	10.99		
Indian mackerel	358.35	8.86		
Indian oil sardine	228.40	5.65		
Layang scad	223.10	5.52		
Maharashtra				
Squid	5.60	25.23		
<i>Karikkadi</i> shrimp	2.50	11.26		
Scad	2.20	9.91		
White sardine	2.00	9.01		
Pink shrimp	1.80	8.11		
Gujarat				
Ribbon fish	127.35	20.45		
Indian mackerel	121.60	19.53		
Cat fish	99.90	16.04		
Croaker	61.70	9.91		
Squid	35.50	5.70		

Tamil Nadu			
Cuttlefish	433.44	19.88	
Squid	191.85	8.80	
Indian oil sardine	117.45	5.39	
Indian mackerel	111.17	5.10	
Indian scad	98.08	4.50	
Odisha			
Croaker	247.63	20.62	
Cat fish	124.13	10.34	
<i>Karikkadi</i> shrimp	122.78	10.22	
Sea crab	113.35	9.44	
Brown shrimp	77.46	6.45	
West Bengal			
Bombay duck	505.75	14.25	
Croaker	402.10	11.33	
Sea crab	285.90	8.06	
Hilsa	217.97	6.14	
Silver pomfret	184.42	5.20	

Harbour-wise landings

Figures 5 and 6 represent the fish landings recorded during the month at the selected harbours along West and East coasts of India respectively. Of the 30 harbours, Kayamkulam harbour registered the maximum landing of 1909.00 tons (16%) and it was followed by Deshapran harbour with a contribution of 1726.53 tons (15%). The least quantity of landings was recorded from Tuticorin harbour (17.84 tons).

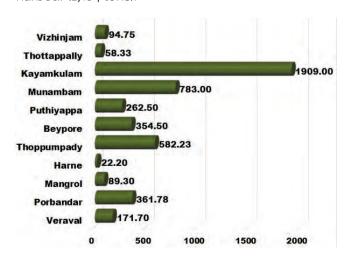


Fig. 5. Landings (in tons) at harbours along west coast during June 2018

Appraisal of boat arrivals

A total of 6564 numbers of boat arrivals were recorded during June 2018, of which the highest number was

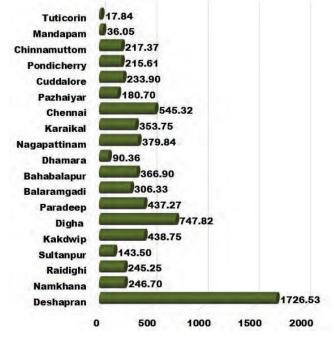


Fig. 6. Landings (in tons) at harbours along east coast during June 2018

registered at Deshapran harbour (561 nos.). The Porbandar harbour with 503 numbers of boat arrivals held the next position. About 70% of the fishing vessels which landed their catch at the harbours belonged to the category of Trawlers and the remaining landings were by Purse seiners, Gill netters, Long liners and Traditional crafts.

Comparative analysis

Table 5 presents the comparison of the data of June 2018 with that of previous months. The total fish catch had decreased over the months and the reason for the decline in catch can be attributed to fishing ban prevailed in East and West coasts during the period. On analysing the catch compositions, it is observed that during June the percentage share of Shellfish stocks has increased substantially to 37% and thus holding the second position, next to Pelagic finfish. The Pelagic finfish stock, though contributed the highest share, had registered a small decline in the percentage share and the share of Demersal finfishes had declined by 10% in comparison to that of previous month. In June, *Poovalan* shrimp, for the first time, registered as the topmost contributor among the

various fishery items landed from the selected harbours. The highest landing during the month was recorded from Kerala whereas no landing was reported from Karnataka in view of fishing ban. The Kayamkulam harbour had accomplished the topmost position in terms of quantity of fish landed. The total number of boat arrivals recorded had decreased further in June when compared to that of earlier months.

Summary

In June 2018, a total landing of 11619.06 tons of marine fishery resources were recorded from the 30 major fishing harbours of India, wherein pelagic finfishes and shellfish stocks contributed more quantity than demersal finfishes. Considering the fishery item-wise landings, *Poovalan* shrimp was the major contributor during the month. Though 60% of the total catch during the period was recorded from the East coast, the West coast state Kerala registered the highest landing and the Kayamkulam harbour which recorded the highest quantity also belongs to the state. In terms of number of boats arrived at the harbour, the Deshapran harbour in West Bengal registered the maximum boat arrivals.

Table 5. Comparative analysis of the data

	April 2018	May 2018	June 2018
Total Catch	52,184.40 t	32,153.82 t	11619.06 t
Landing of Pelagic finfishes	20,374.36 t (39%)	13,330.59 t (41%)	4439.45 t (38%)
Landing of Demersal finfishes	17,128.26 t (33%)	11,185.97 t (35%)	2889.96 t (25%)
Landing of Shellfishes	14,681.78 t (28%)	7,637.26 t (24%)	4289.65 t (37%)
Species recorded highest landing	Squid (10%)	Japanese thread fin bream(17%)	<i>Poovalan</i> shrimp (11%)
State recorded highest landing	Kerala (30%)	Karnataka (35%)	Kerala (35%)
Harbour recorded highest landing	Beypore (21%)	Mangalore (18%)	Kayamkulam (16%)
Total Boat Arrivals	21,677	15,538	6,564

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Highlights of marine fish landings in selected harbours of India during July 2018

SANTOSH N.K., V.V. AFSAL, N.J. NEETHU AND JOICE V. THOMAS NETFISH-MPEDA

o facilitate the MPEDA's Catch Certification scheme, NETFISH records the marine fish landings and boat arrivals occurring at the major harbours of India. The analysis result of fish landing and boat arrival data obtained for the month of July 2018 is presented in this report.

Data Collection & Analysis

The Harbour Data Collectors stationed at selected major landing sites across the country (see Table 1) recorded fish catch and boat arrivals information daily, both from primary and secondary sources. Approximate quantity of various fish species landed in a day at the harbour was obtained by personal estimation with sight. The name, registration number and type of fishing vessels arrived at the harbour were also recorded. These data were further analysed using online applications and MS office (Excel) tools to arrive at species-wise, region-wise, state-wise and harbour-wise estimations. Data from 26 harbours belonging to 5 maritime states, obtained during the month, was analysed for this report.

Table 1. List of harbours and landing centres selected for data collection

Sl. No.	State	Fishing harbour
1		Deshapran
2		Namkhana
3	VV/act Dansel	Raidighi
4	West Bengal	Sultanpur
5		Kakdwip
6		Digha
7		Paradeep
8		Balaramgadi
9	Odisha	Bahabalapur
10		Dhamara

11		Visakhapatnam
12		Nizampatnam
13	Andhra Pradesh	Kakinada
14		Machilipatnam
15		Nagapattinam
16		Karaikal
17		Chennai
18	Tamil Nadu	Pazhaiyar
19		Cuddalore
20		Pondicherry
21		Chinnamuttom
22		Mandapam
23		Tuticorin
24	17 1.	Thoppumpady
25	Kerala	Kayamkulam
26		Vizhinjam

Evaluation on fish landings

The fish catch data obtained from 26 landing sites during July 2018 totalled to 23957.27 tons, which was comprised of 11037.42 tons (46%) of Pelagic finfishes, 4685.39 tons (20%) of Demersal finfishes and 8234.46 tons (34%) of Shellfishes, whereby the Pelagic resources contributing the maximum quantity (Fig. 1).

The total catch was comprised of 96 varieties of marine fishery items, among which the top five contributors in the chronological order were Indian mackerel, Croaker, Cuttlefish, Squid and Hilsa (Fig. 2). These 5 fishery items together formed 32% of the total catch. The other major fishery items were Sea crab and Bombay duck, each contributing more than 1000 tons to the total catch. The Pigmy Devil Ray, which recorded a quantity of 0.10 tons, was the species which registered least landing during the month.

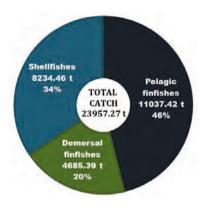


Fig. 1. Category-wise fish landings during July 2018

The quantity of various fishery items recorded during July 2018 is given category-wise in Table 2. Indian mackerel, Anchovies and Hilsa were the pelagic finfish varieties which recorded the highest landings whereas in the case of demersal finfishes,

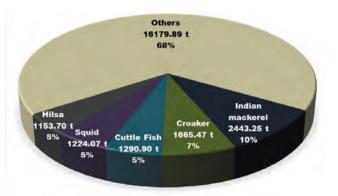


Fig. 2. Major fishery items landed during July 2018

the major contributors were Croaker and Pomfret. Among the Shellfish stock, comprised of Molluscs and Crustaceans, Penaeid shrimps held around 55% of the share but the major contributors were Cuttlefish, Squid and Sea crab.

Table 2. Category-wise landing of various fishery items during July 2018

Fishery item	Quantity in tons %	% of Total Catch
Pelagic Finfishes		
Indian Mackerel	2443.25	10.20
Anchovies	1306.57	5.45
Hilsa	1153.70	4.82
Bombay Duck	1036.07	4.32
Tunas	977.96	4.08
Indian Oil Sardine	898.29	3.75
Ribbon Fish	855.73	3.57
Scad	755.96	3.16
Seer Fish	330.77	1.38
Lesser Sardines	291.51	1.22
Tardoore	267.58	1.12
Barracuda	199.51	0.83
Trevallys	100.37	0.42
Queen Fish	90.01	0.38
Mullet	73.67	0.31
Silver Sillago	57.68	0.24
Leather Jacket	47.34	0.20
Indian Salmon	41.95	0.18
Horse Mackerel	37.76	0.16
Sea Bass	23.52	0.10

	-	
Marlin	18.71	0.08
Wolf Herring	18.08	0.08
Black King Fish	6.03	0.03
Dolphin Fish	4.58	0.02
Sail Fish	0.50	0.00
Indian Thread Fish	0.35	0.00
Total	11037.42	46.07
Demersal Finfishes		
Croaker	1687.52	7.04
Pomfrets	1106.65	4.62
Cat Fish	471.63	1.97
Sole Fish	301.40	1.26
Japanese Thread Fin Bream	229.25	0.96
Eel	160.53	0.67
Lizard Fish	156.10	0.65
Pony Fish	152.10	0.63
Snapper	118.65	0.50
Rays	74.62	0.31
Goat Fish	66.01	0.28
Parrot Fish	38.44	0.16
Reef Cod	23.28	0.10

Whip Fin Silver Biddy	21.70	0.09	
Spine Foot	19.80	0.08	
Indian Halibut	18.81	0.08	
Emperor Bream	14.94	0.06	
Moon Fish	10.88	0.05	
Bull's Eye	9.15	0.04	
Guitar Fish	1.70	0.01	
Yellow Fin Sea Bream	1.65	0.01	
Filefish	0.40	0.00	
Ghol	0.20	0.00	
Total	4685.39	19.56	
Shellfish			
Crustaceans			
Penaeid Shrimps	4490.34	18.74	
Sea Crab	1115.36	4.66	
Lobster	3.78	0.02	
Mud Crab	2.06	0.01	
Non-Penaeid Shrimps	0.30	0.00	
Total crustaceans	5611.85	23.42	
Molluscs			
Squid	1224.07	5.11	
Cuttlefish	1290.90	5.39	
Octopus	107.64	0.45	
Total Molluscs	2622.61	10.95	
Total Shellfish	8234.46	34.37	
Grand Total	23957.27	100.00	

Region-wise landings

From the South West coast, landings were reported only from three harbours in Kerala during the period, which totalled to a quantity of 3646.94 tons whereas from the North East coast 13128.39 tons of landing was recorded from six harbours of West Bengal and four harbours of Odisha (Fig. 3). The South East coast registered a total landing of 7181.95 tons which was comprised of data from nine harbours of Tamil Nadu and four harbours of Andhra Pradesh.

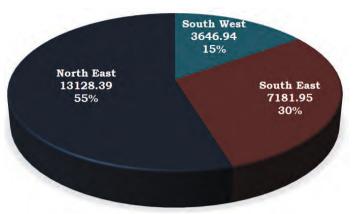


Fig. 3. Region-wise landings recorded during July 2018

The five major fishery items which had contributed predominantly to the landings in each region are given in Table 3.

Table 3. Major items landed in each region during
July 2018

Item	Quantity in tons	% of total landings of the region	
South West			
Indian mackerel	1671.00	45.82	
Shrimp (<i>Poovalan</i>)	605.00	16.59	
Indian Scad	424.10	11.63	
Squid	309.65	8.49	
Anchovy	297.79	8.17	
South East			
Cuttlefish	974.38	13.57	
Tuna	699.01	9.73	
Squid	561.55	7.82	
White Prawn	392.19	5.46	
Brown Shrimp	337.13	4.69	
North East			
Croaker	1599.97	12.19	
Hilsa	1153.70	8.79	
Bombay Duck	1036.07	7.89	
Sea Crab	813.33	6.20	
Shrimp (<i>Karikkadi</i>)	666.30	5.08	

State-wise landings

In July, the maximum landing was recorded from West Bengal, which was to the tune of 10795.15 tons, forming 45% of total catch (Fig. 4). This was followed by Tamil Andhra Pradesh Nadu with 4499.25 tons and then by Kerala with 3646.94 tons. Landings were not reported from Karnataka, Goa, Maharashtra and Gujarat because of fishing ban period that was on there.

The major five fishery items which had contributed significantly to the landings in each state during July are given in Table 4.

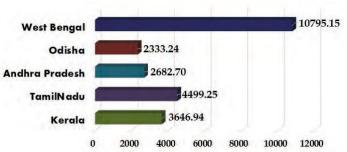


Fig.4. State- wise fish landings (in tons) during July 2018

Table 4. Major items landed in various states during July 2018

Item	Quantity in tons	% of total landings of the state
Kerala	Quantity in tons	7. Of total tailuings of the state
Indian mackerel	1671.00	45.82
Shrimp (<i>Poovalan</i>)	605.00	16.59
Indian Scad	424.10	11.63
Squid	309.65	8.49
Anchovy	297.79	8.17
Andhra Pradesh	_3///3	<u> </u>
Tuna	459.04	17.11
White Prawn	303.65	11.32
Brown Shrimp	248.74	9.27
Tiger Prawn	186.25	6.94
Pink Shrimp	176.73	6.59
Tamil Nadu		
Cuttlefish	819.30	18.21
Squid	429.88	9.55
Indian Oil Sardine	293.22	6.52
Indian Scad	243.56	5.41
Tuna	239.97	5.33
Odisha		
Croaker	536.06	22.97
Shrimp (Karikkadi)	270.18	11.58
Tuna	164.55	7.05
Indian Oil Sardine	155.22	6.65
Sea Crab	136.30	5.84
West Bengal		
Hilsa	1100.36	10.19

Croaker	1063.91	9.86
Bombay Duck	995.60	9.22
Sea Crab	677.03	6.27
Ribbon Fish	520.69	4.82

Harbour-wise landings

Figures 5 represents the fish landings recorded during the month at the selected harbours during the period. Of the 26 harbours, Deshaparan Harbour in West Bengal registered the maximum landing of 4877.87 tons (20%) and it was followed by Kayamkulam Harbour with a landing of 2743.00 tons (11%). The least quantity of landings was recorded from Thoppumpady Harbour (2.90 tons).

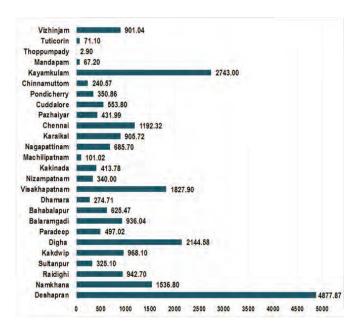


Fig. 5. Landings (in tons) recorded at harbours during July 2018

Appraisal of boat arrivals

A total of 11564 numbers of boat arrivals were recorded during July 2018, of which the highest number was registered at Deshapran Harbour (1395 nos.). The Sankarpur Harbour at Digha with 804 numbers of boat arrivals held the next position. About 70% of the fishing vessels, which landed their catch at the harbours, belonged to the category of trawlers and the remaining landings were by purse seiners, gill netters, long liners and traditional crafts.

Comparative analysis

Table 5 presents the comparison of the data of July 2018 with that of previous months. The total fish catch had increased in July by over 12000 tons than that of June. On analysing the catch compositions, the Pelagic finfish share was found to have increased by 8% during July whereas the percentage share of Demersal finfish and Shellfish has decreased correspondingly. Indian Mackerel had registered as the topmost contributor among the various fishery items landed during the period and the landings of *Poovalan* shrimp and Japanese Thread fin bream were much less than 1000 tons. West Bengal recorded the highest landing during the month and Kerala was in the third position. The Deshapran Harbour secured the topmost position among the harbours in terms of quantity of fish landed. The total number of boat arrivals recorded had increased in July when compared to that of previous month.

Table 5. Comparative analysis of the data

	May 2018	June 2018	July 2018
Total Catch	32,153.82 t	11619.06 t	23957.27 t
Landing of Pelagic finfishes	13,330.59 t (41%)	4439.45 t (38%)	11037.42 t (46%)
Landing of Demersal finfishes	11,185.97 t (35%)	2889.96 t (25%)	4685.39 t (20%)
Landing of Shellfishes	7,637.26 t (24%)	4289.65 t (37%)	8234.45 t (34%)
Species recorded highest landing	Japanese thread fin bream (17%)	Poovalan shrimp (11%)	Indian Mackerel (10%)
State recorded highest landing	Karnataka (35%)	Kerala (35%)	West Bengal (45%)
Harbour recorded highest landing	Mangalore (18%)	Kayamkulam (16%)	Deshapran (20%)
Total Boat Arrivals	15,538	6,564	11,564

*Percentage of total catch

Summary

In July 2018, a total landing of 23957.27 tons of marine fishery resources was recorded from the 26 major fishing harbours of India, wherein pelagic finfishes and shellfish stocks contributed more quantity than demersal finfishes and shellfishes. Considering the fishery item-wise landings,

Indian Mackerel was the major contributor during the month. About 85% of the total catch recorded during the period was from the East coast due to the fishing ban in force in the West coast. Hence, West Bengal recorded maximum landing during the period, with the Deshparan Harbour in West Bengal registered the highest landing as well as highest boat arrivals.

Hands on training on 'Value addition of fishery products'



Trainees with the prepared fish cutlets and fish balls

NETFISH, in association with District Fishermen's Youth Welfare Association (DFYWA) a member NGO, organised a hands-on training programme for the fisherwomen of Mangamaripeta, Visakhapatnam on June 29.

The theme of the programme was "Value Addition of Fishery Products". Active fisherwomen, fish traders and raw fish vendors who are members of Small Fish Producers Society were the beneficiaries of the programme.

Mr. Arjillidasu, Executive Secretary of DFYWA and Mr. P. Hanumantha Rao, State Coordinator NETFISH explained to the participants the need of hands-on training to produce ready-to-eat fishery products, which are having high demand in markets.

Mr. M. Shaji, Deputy Director, Regional Division, MPEDA Visakhapatnam, stressed on the importance of hygiene and sanitation while preparing the products. Introducing the participants to the high demand in international domestic markets for ready-to-eat fishery products, he suggested branding their product as Mangamaripeta fishery products.

After the introductory session, the various ingredients, its proportions and the procedure of making fish cutlets and fish balls were demonstrated to the trainees.

Afterwards, the fisherwomen actively involved in the process and came up with final products. The trainees were also made aware of the economic benefits, by calculating the cost of raw materials and the value of finished products.



Trainees invloved in the preparation of the products



Harvest Demonstration of GIFT Culture



Mr. U. C. Mohapatra, Deputy Director, RD Bhubaneswar with Mr. Biswal, the farmer of the demonstration farm and other officials with GIFT Tilapia harvested from MPEDA demonstration programme

he Genetically Improved Farmed Tilapia (GIFT) is one of the best things that happened to fish farmers in recent times. This is considered as global fish as it holds immense potential for export and farmers can easily adopt it for commercial culture production.

As part of promoting the cultivation of GIFT, the Regional Division of MPEDA, Bhubaneswar organized a demonstration programme on its culture. The demonstration programme was aimed at popularising the scientific culture technology established by Rajiv Gandhi Centre for Aquaculture, the R&D arm of MPEDA.

After a successful first crop in the farm of Mr. Saurav Kumar Biswal at Tulang village of Jagatsinghpur district, the second demonstration crop was taken in the same pond during 2017-18 as per the scheme guidelines. The farmer has got approval for GIFT culture from State Fisheries Department.

The fresh water fish farm of Mr. Biswal, which has a total area of 6.8 acres and was just 30 kms away from Jagatsingpur, offered ideal conditions for the demonstration programme. It also had good road accessibility, electrification with own 25 KVA transformer, one 7.5 KVA DG set, aerators and pumps. On the top of it, Mr. Biswal had solid experience

in carp culture too. The existing facilities have won the farm the approval as multiplication unit for supply of Jayanti rohu by CIFA, Bhubaneswar.

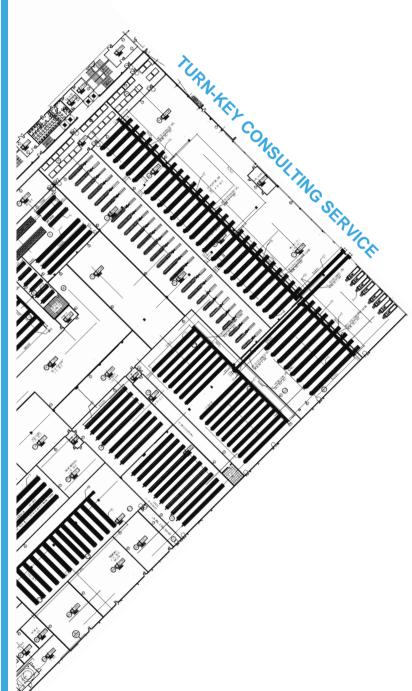
As many as 36 fresh water ponds in different districts of Odisha are stocked with GIFT seeds from RGCA by the State Fisheries Department, with assistance from World Fish. After the successful completion of the last demonstration crop, Mr. Biswal stood a good chance of being selected by World Fish as their consultant to the farms stocked with seed.

Additional Infrastructure and Pond Preparation

Bio security measures like crab/cattle fencing and bird fencing were repaired. Two 1 HP paddle wheel aerators were installed in the pond with proper positioning. Arrangements were made for bring water from the adjacent canal to the demonstration pond from the pump house. Prior to fencing work, dressing and grass cutting of all dykes was undertaken. Eight hapas were placed in the pond after pond preparation and maintaining water depth. The farm has proper facilities for feed storage and provisions for administration in two stories. Kits for water quality monitoring, balance, scale, registers, pond data record book etc were provided by MPEDA.



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Mr. U. C. Mohapatra, Deputy Director, MPEDA, Bhubaneswar welcomes the gathering

The pond was prepared by drying, ploughing two times, liming, and water filling through filtration. The pH (6.70) was corrected by adding 480 kgs lime. Water filling was done up to 4 feet after thorough screening by 60 and 80 mesh nets. Chlorination with 300 kgs bleaching powder was done for eradicating unwanted live organisms. De-chlorination using aerators was also done and left thus for three days. Plankton bloom was developed by application of fermented organic manure like 25 kg of de-oiled rice bran, 12 kg of jaggery and 500 gms of yeast. Water depth was raised to 5 feet and parameters for DO, pH, transparency, temperature, ammonia, and alkalinity were checked. The pond was ready during the second week of September 2017 for stocking.

Stocking

The pond measuring 1.00 ha WSA of Mr. Biswal was stocked with 16000 all male GIFT seeds of size 2-3 cms procured from RGCA, Vijayawada. They were brought in after a long 20 hour drive and was with proper packing in 46 poly bags. The seeds were stocked in 8 hapas on September 17 forenoon after proper acclimatization. Very good transit survival of 99.5% was observed. The seeds were kept in 8 hapas in the same pond for 23 days and then released to the pond on October 09. This nursery rearing has shown 92% survival with 10 gms average body weight.

Pond management and feeding

Pond management and feeding adhered to the guidelines laid out by the RGCA. Initially the fishes in hapa were fed with pelletized 32% high protein *L. vannamei* shrimp feed for the entire nursery period. Feed was given six times a day from morning to evening by broadcasting. Fish growth and health were regularly monitored.

The fishes were then released in the pond and fed with IB floating pellet feed of 2 mm size initially having 26 % protein and then 3mm size with 30 % protein and then with 4 mm size 24 – 26 % protein feed. Feed was given

two times daily till the fish grew up to 100 gms and the average body growth of 2-3 gms daily was noticed, after which it was increased to 4 gms/day. Feeding in the grow out pond was made twice a day – at 06.00 am and then at 05.00 pm. Pond monitoring was done by technical officers of MPEDA Regional Division, Bhubaneswar regularly, fish health and growth were checked once in every 15 days and the daily ration of feed was estimated accordingly depending on ABW. Total quantity of feed used for the entire crop was 10.81 MT.

There was a problem of plankton maintenance during initial days after stocking for which application of dolomite and additional doses of organic fermented slurry was applied. Since feeding plays an important role in balancing fish growth rate, feeding was made as per the table given below.

Average Body Weight	Quantity of feed (% of ABW)
10 gms	6.0
50 gms	2.5
200 gms	1.3
500 gms	0.90
700 gms	0.80

Water quality, pond bottom condition and fish health were regularly checked by the visiting officers. There was no incidence of disease in the fishes during the entire crop period, but fish samples were forwarded to Central Pathology Lab of RGCA at Sirkali, Tamil Nadu. There was growth difference initially, which was made up during the crop period.

The demonstration pond was visited by nearby fish/GIFT farmers, trainees and officers of Fisheries Department, World Fish representatives, Assistant Project Manager, RGCA etc.

Training on GIFT Culture

As part of the demonstration scheme, a hands-on 3-day training programme was organized on the farm site from February 21 to 23, 2018 for 20 farmers. Many of these farmers had stocked GIFT seeds with assistance from Fisheries Department.

Mr. P. Srinivas Rao, Assistant Project Manager, GIFT hatchery, RGCA, Vijayawada and technical officers of Regional Division, MPEDA, Bhubaneswar, took classes on new scientific culture practices. The practical sessions were led by Mr. Srinivas Rao. The trainees were provided



with literature and pamphlets on GIFT culture. On the concluding day, the trainees were given stipend and certificates were given away during a small valedictory function, which was attended by District Fisheries Officer, Jagatsinghpur, World Fish Odisha Chief Dr. Arun Padhiar and scientists from CIFRI, Kolkata.

Inaugural Harvest

After a culture period of nearing 8 months under the active guidance of the technical officers of MPEDA, Bhubaneswar, an inaugural harvest was organized on April 25. Mr. S. P. Bhoi, Deputy Director of Fisheries, Ganjam Zone, Berhampur; Dr. Anantharaj, Scientist, CIFA, Bhubaneswar; Mr. S. P. Mohapatra, AGM, NABARD, Jagatsinghpur; Mr. A. K. Pattnaik, LDM, Jagatsinghpur; Mr. Prasant Pattnaik, AFO, Jagatsinghpur and Mr. Bisoi, AFO, Word Fish, Cuttack, were presented as guests. The guests and nearly 50 fish/shrimp/GIFT farmers of the area witnessed the harvest. The harvest was followed by a meeting on the demonstration programme.



Mr. S .P. Mohapatra, AGM NABARD, Jagatsingpur addressing the participants

The details of the demonstration were explained by Mr. Umesh Chandra Mohapatra, Deputy Director, MPEDA,



Mr. S. P. Bhoi, DDF(Ganjam Zone), Berhampur addressing the farmers

Bhubaneswar. Mr. Biswal was thanked for his support and cooperation for achievement of such targeted production of more than 10 tons of fish from 1 ha area. Mr. Mohapatra advised the visiting farmers to follow the procedures adopted for GIFT production in the demonstration and try in their ponds. He assured all sorts of technical help from MPEDA. Besides he appreciated the interest shown by Mr. Biswal with his experience from the last crop demonstration to be appointed as consultant to World Fish for propagating the technology to 36 farmers in different districts in the state.

A leaflet containing brief description on the procedures adopted, expected production, precautions taken, training programme during the demonstration with economics was released by the guests and participants.

Dr. Ananthraj, Scientist, CIFA, Bhubaneswar was a guest at the programme. He presented a brief overview on the history of GIFT culture production, countries involved, breeding behaviour, concept of hormone application and higher production with improved variety and techniques, nursery etc. He requested the farmers to consult, MPEDA/CIFA on GIFT culture. GIFT being an export commodity, he suggested the fish farmers to change mindset and adopt

GIFT for more business besides supply to local market. The harvest function was attended and felicitated by Mr. S P Bhoi, Deputy Director of Fisheries, Ganjam Zone, Berhampur, Mr. S P Mohapatra, AGM, NABARD, Jagatsinghpur, Mr. A K Pattnaik, Lead District Manager, Jagatsinghpur, Mr. Bisoi, Additional Fisheries Officer,

A view of GIFT harvest

World Fish, Cuttack, and Mr. Prasant Pattnaik, Additional Fisheries Officer, Jagatsinghpur. Mr. S Durga Rao, Field supervisor, MPEDA, Bhubaneswar, also spoke.

Mr. Biswal narrated his experience on the demonstration and thanked the organizers for selecting his pond. He also appreciated the timely guidance by Mr. Durga Rao, MPEDA. It was generally expressed that more areas with higher production rate with available technology would boost GIFT production in near future. Seafood exporters are to be motivated for export of GIFT products and there must be continuous fish supply to local market also. Steps taken by State Fisheries Dept. for establishing a GIFT hatchery in their complex at Kausalyagagnga, Bhubaneswar has to be speeded up for adequate supply of GIFT seeds to farmers in time.

Result of the programme

Atotal amount of Rs. 571,130 was spent in the demonstration programme towards cost of pond preparation, repair of bio security measures, all male seeds, transportation, formulated pellet feed, fuel, water testing kit, labour charges etc. 75% of the total expenditure was met by MPEDA as per the scheme for the second crop. A total production of 9,928 kgs of fish was estimated with 85% survival and 730 gms average weight from the crop valued at Rs. 943,160 at a price of as Rs. 95/- per kg, Net profit was calculated as Rs. 372,030 from 1 ha pond. A brief economics of the crop is given below:



Expenditure			
Sl. No.	Item	Amount (Rs.)	
1	Pond preparation	17,280	
2	Bio Security	-	
3	Cost all male GIFT seeds (16000 Nos)	41,350	
4	Seed transportation cost	20,460	
5	Hapa for nursery – 8 Nos	-	
6	Floating pellet feed 11,915 Kgs (FCR 1:1.2) including transport	419,720	
7	Labour charges	56,000	
8	Fuel and electricity charges	7,820	
9	Miscelleneous expenses	8,500	
TOTAL		571,130	
Income			
1	Total production(9928 kgs) at survival rate of 85 % (730 gm average weight) @ Rs.95/- per kg	943,160	
2	Net profit from 1.0 ha during 2 nd crop demonstration	372,030	

Exploring Aquaculture Potential of Kanyakumari



Mr. C. Wilson, Deputy Director, MPEDA, Nagapattinam inaugurates the training programme

anyakumari is unique in its geography. It is at the tip of the Indian peninsula and locked with the Western Ghats on all sides. The land is blessed with many fresh water bodies, like canals, ponds, tanks, lakes and reservoirs, which are ideal for inland fish culture. But the potential of aquaculture in Kanyakumari remains much less exploited.

As part of exploring the possibilities of improving this scope, a three day general training programme on Eco-Friendly and Sustainable Diversified Aquaculture was organised by the Regional Division, MPEDA, Nagapattinam at the office of Assistant Director of Fisheries, Nagercoil from June 26 to 28. A total of 20 farmers from Kanyakumari District participated in the training programme.

The three day training programme was inaugurated by Mr. C. Wilson, Deputy Director, MPEDA, Nagapattinam in the presence of Mr. T. Natarajan, Assistant Director of Fisheries, Nagercoil, Mr. K. Reji Mathew, Assistant Director, MPEDA, Nagapattinam and Mr. Ramaswamy, Retd. Assistant Director, MPEDA.

Mr. C. Wilson initiated the training with a session on role of MPEDA in the development of aquaculture, site selection, development of farms and the need of

diversification of species in aquaculture.

Mr. Reji Mathew, who took a session on hatchery and seed production, selection of seed, packaging and transportation. The first day was concluded with a class on selection of species and different aquaculture practices in India and aquaculture pond preparation and stocking of seeds by Mr. Ramaswamy, Retd. Assistant Director, MPEDA.

A field trip was arranged to the RGCA Cage Culture



A view of the participants

Unit at Muttom on the second day of training. Mr. Damodaran, Project Manager, RGCA took the lead in taking the trainees to the sea cage farm deployed at Muttom coast. Decked in safety gears, the excitement

of the trainees was visible even as they sat in the fibre boat, ready to explore cage farming. It was an absolutely new experience for many of them. The HDPE cages were stocked with brood stock of Cobia, Pompano and grow out farming of Cobia. Mr. Damodaran explained to the trainees the technology, farming practices, species, feeds, types of cages, mooring and its maintenance, marketing and the relevance and scope of cage farming in aquaculture to the trainees.

The third day of the training started with a presentation on culture of Tilapia, Sea bass and other species by

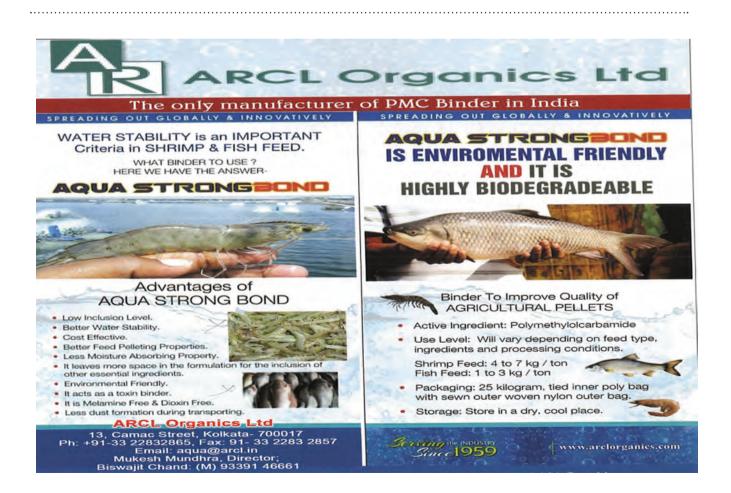


Mr. K. Reji Mathew, Assistant Director, MPEDA speaking on the session



A view of the programme

Mr. Geo Christy Eapen, Project-in-Charge, RGCA. Mr. T. Natarajan, Assistant Director of Fisheries, Nagercoil briefed the trainees on the State Government schemes and assistance provided in aquaculture. A class on harvesting and marketing of Aquaculture products was taken by Mr. K. Reji Mathew, Assistant Director. A general interaction round on aquaculture led by Mr. C. Wilson, Deputy Director was held after that followed by valedictory function, where certificates and stipends were distributed to 20 trainees. The training ended with Mr. K. Reji Mathew, Assistant Director addressing the gathering.



Awareness campaign on banned antibiotics



Mr. Pulaparthy Ramanjeneyulu, Bhimavaram MLA inauguraing the awareness programme

day's awareness campaign against the use of banned antibiotics in aquaculture was organised at Dirusumurru village, Bhimavaram Mandal West Godavari district on July 27. This was organised by the Sub Regional Division of MPEDA, Bhimavaram.

The main objective of the campaign was to create awareness on against the use of banned antibiotics in aquaculture and distributions of farm enrolment smart cards to the farmers.

Mr. Pulaparthy Ramanjeneyulu, Member of Legislative Assembly, Bhimavaram, inaugurated the programme, in which 125 farmers and officials attended. He also distributed enrolment cards to the farmers.

During his address, Dr. P. Sreenivasulu, Assistant Director, MPEDA, Bhimavaram, explained about explained about EU rejections due to antibiotics presence. Everyone in the industry should work hand to hand against the use of banned antibiotics and the farm enrolment should be completed by the end of August, he said.

Highlighting the importance of traceability, he said there was a need of elimination of antibiotics in aquaculture to save this industry for future generation. The economy is boosted along the coastal area because of the aquaculture activities and this should be safeguarded to ensure sustainable development.

Dr. Sreenivasulu also spoke on the importance of

water quality and other input testing and need for establishment sophisticated aquaculture testing laboratory Bhimavaram. He has also welcomed the right step taken by MPEDA for proposed aqua Lab in Bhimavaram, while assuring all support on behalf of the Government of Andhra Pradesh towards MPEDA.

Kolla Nageswar Rao,

AMC Chairman, Bhimavaram and MPEDA farmer talked about reasons for shrimp price reduction and EU rejection on antibiotics. He has requested all aqua farmers to enrol with MPEDA for betterment of the shrimp export. He told the gathering that he would allot land in Bhimavaram Agricultural Market Yard for construction of MPEDA integrated office complex building.

Dr. Phani Prakash, Deputy Director of Fisheries, Department of Fisheries, Bhimavaram, stressed on the need to participate in MPEDA enrolment programme in connection with SIMP. He also explained about the aqua zone and fisheries department schemes for development of aquaculture.

Mr. Bala Krishna, a progressive shrimp farmer and Mr. K. Anjaiah, Trainee Field Supervisor (GIS), MPEDA, Bhimavaram, spoke.

An interactive session was held at the end of the meeting, where farmers got chances to clear their doubts from the officials.

On July 26, a similar programme was held at the Agriculture Market Yard, Palakollu, West Godavari District, where 103 farmers, traders aqua technicians and officials participated.

Speaking on the occasion, Mr. P. Anil Kumar, Joint

Director, MPEDA, Vijayawada presented the statistics of seafood export products to US, EU, SEA during the 2017 -2018 and explained the reasons for rejections in EU and USA. He has explained about the MPEDA Fish Exchange Portal as a tool to sell farm produce keeping away the middlemen and introduction of SIMP programme by USA.



Mr. P. Anil Kumar, Joint Director, MPEDA addressing the farmers

Dr. Phani Prakash, Deputy Director of Fisheries, Department of Fisheries, Bhimavaram; Dr. P. Sreenivasulu, Assistant Director, MPEDA, Bhimavaram; Mr. G. Gandhi Bhagavan Raju, AMC, Chairman, Palakollu; Mr. Junga Das, Secretary, Andhra Pradesh Aqua Dealers Welfare Association; Mr. B. Chinna Babu, Secretary, Aqua farmer's Welfare Association, Palakollu; Mr. P. Prasad, Asst. Director, Dept of Fisheries, West Godavari District and Mr. K.Ramanjaneyulu, Junior Technical Officer, MPEDA, Bhimavaram; attended the meeting.

Mr. Junga Das said that almost 95% of the dealers were from agrarian back ground. So the chances of using banned would be very minimum and hence the menace could be ruled out by working together. Mr. Chinna Babu suggested formation of a forum under the MPEDA to have more focussed campaign on the antibiotics issue.



Mr. P. Ramanjeneyulu, Hon'ble Member of Legislative Assembly, Bhimavaram distributing farm enrolment smart card to the farmer





Training Programme on Sustainable Shrimp Farming in Honnavar



Mr. Nagaraj, Assistant Director of Fisheries, Honnavar delivers guest lecture

n response to a request placed by the village panchayat of Karki and neighbouring villages, MPEDA organised a three-day training programme on "Sustainable Shrimp Farming and Diversification in Aquaculture" at the Panchayat Hall at Karki village, Honnawar, Uttar Kannada district from July 24 to 26.

The training programme was inaugurated by Mr. Srikant Moger, President, Karki Gram Panchayat. He suggested that the participants in the programme could do planning for crop, arrange proper finance and practice ecofriendly aquaculture for sustainability.

The training

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Inauguration Function

programme covered topics like site selection and construction of ponds, pond preparation, seed stocking, seed and feed management, water quality

management, banned antibiotics in aquaculture farms, harvesting techniques, bio-security in *L.vannamei* farming and diversification of aquaculture on mud crab, Tilapia, seabass etc.

Mr. Vijayakumar Yaragal, Deputy Director; Mr. G. Ramar and Mr. S. M. Shirodkar, Junior Technical Officers led the

training sessions. A special lecture on Hatchery Seed Technology was delivered by Mr. Hebbar, Manager, M/s. Anugraha Hatchery, while lectures on Aqua society formation and BMPs in Cluster shrimp farming were delivered by Mr. Rabi Gouda and Mr. Savim, officials with National Centre for Sustainable Aquaculture (NaCSa). Mr. S. M. Shirodkar, Junior Technical Officer, spoke.

The sessions included on GPS survey, importance of UID farm enrolments, and the new financial assistance schemes of MPEDA. An overview about the State



A field visit to the Shrimp hatchery

government's schemes were given by Mr. C. Nagraj, Assistant Director, Fisheries, Honnawar.

Afer the interactive session and the trainees were taken for a field visit to the farms of Mr. Vasudev Bendoor, M/s. West Coast, M/s. Skyline hatchery and

others in Baad, Kumta villages. The field visits provided first hand information to the participants on *L.Vannamei* shrimp farming activities like sampling, cast netting, water parameters test. Participants were given certificates and stipend on successful completion of the programme.





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Training on "Better Management Practices for Sustainable Aquaculture"



Dr. P. Sreenivasulu, Assistant Director, MPEDA, Sub Regional Division, Bhimavaram distributing the certificates and stipend to the trainees

he Sub Regional Division of MPEDA, Bhimavaram organized a five-day training programme on "Better Management Practices for Sustainable aquaculture" for SC/ST beneficiaries at Gondi village, Narasapuram Mandal, West Godavari District from July 23 to 27.

A total of 20 participants attended the programme meant to create awareness on ways of better management to ensure sustainable aquaculture. Mr. M. Anjaneyulu, Sarpanch of Gondi village, inaugurated the programme.

Mr. L. K. Patnaik, Field Supervisor, led the class on BMPs, schemes and services of MPEDA, and diversification of aquaculture, while Mr. K. Ramanjaneyulu, Junior Technical Officer, led the class on disease management and feed management in shrimp culture. Mr. A. Venkata Ramana, Field Manger, National Centre for Sustainable Aquaculture (NaCSA) talked the formation of Aqua Ssociety and its benefits and

introduced m-krishi apps in shrimp culture.

On the concluding day, Dr. P. Sreenivasulu talked about farm enrolment, Fish Exchange portal and antibiotic issues in aquaculture. He has also distributed the certificates and stipend to the trainees. A group discussion on price of the materials in international market, in which the participants actively took park, marked the conclusion of the programme.



A view of the training class





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Network to develop ornamental fish breeding launched

In a major effort to develop the ornamental fish industry, an all India network project on ornamental fish breeding and culture, a collaborative research project involving seven fisheries research institutes has been launched. The joint research initiative is mainly aimed at developing adequate technologies in breeding, seed production and culture of freshwater and marine ornamental species and helping maintain the sustainability of the industry.

Speaking on the occasion, J K Jena, Deputy Director General of ICAR, stressed on the need for having a strong linkage between researchers and industry partners in the ornamental fish sector to utilise the potential resources available in India. The network research project would address the issues being faced by the ornamental fish industry.

Though the potential for the development of ornamental fish trade in India is immense, proper mechanism is yet to be established to boost both the overseas and domestic

trade of the varieties. The Government has identified this sector as one of the thrust areas for development to augment exports. In India, marine ornamental fish species diversity is rich in the reef area of Andaman and Nicobar Islands, Lakshadweep Islands, Gulf of Mannar and Gulf of Kutch. The freshwater ornamental fish resources are rich in the rivers and streams of the Western Ghats and North East India, he said.

The project envisages scores of objectives including the development of ornamental fish villages with strong marketing ties, A Gopalakrishnan, CMFRI Director said. The Central Institute of Freshwater Aquaculture (CIFA) in Bhubaneshwar, Central Inland Fisheries Research Institute (CIFRI) in Barrackpore; National Bureau of Fish Genetic Resources (NBFGR); Lucknow, Central Institute of Brackishwater Aquaculture (CIBA), Chennai; Central Institute of Fisheries Education (CIFE); Mumbai and Directorate of Coldwater Fishery Research (DCFR) in Bhimtal, Uttarakhand are the other research institutes involved in the network project.

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MSC study finds seafood consumers care about sustainability, but price still a factor

A study commissioned by the Marine Stewardship Council (MSC) has found that seafood consumers want sustainability claims in supermarkets independently verified.

Research agency GlobeScan surveyed over 25,000 consumers in 22 countries. Of those surveyed, 72% said that they want independent verification of sustainability claims in supermarkets. That's a jump from MSC's 2016 survey, in which 68% of people surveyed said that they want independent verification.

The researchers found that most seafood consumers agree that "in order to save the oceans we need to consume seafood from sustainable sources." However, the researchers also found that consumers are putting price before sustainability when purchasing seafood.

"This survey shows that consumers really do care

about the oceans, but with so much confusion about how consumers can help, it's more important than ever to cut through the clutter and deliver an easy way for people to choose sustainable seafood," Richard Stobart, head of marketing for the Marine Stewardship Council, said in a press release.

"With a rising consumer focus on price, and the finding that worldwide more than half of consumers report eating seafood weekly, it is critically important that they have a range of clearly labelled sustainable options at the right price point.

We're pleased to see that trust in the blue MSC label remains very high and our focus continues to be to drive understanding of the label." According to the study, 69% trust the blue MSC label and understanding of MSC's label is increasing as well. From 2016 to 2018 the number of people who understand the label jumped from 32% to 37%.

- www.seafoodnews.com

World's fish consumption unsustainable, UN

A third of the world's oceans are overfished and fish consumption is at an all-time high, raising fears over the sustainability of a key source of protein for millions around the world, the United Nations warned in a report on Monday (July 9).

Overfishing is particularly bad in parts of the developing world where many people already struggle to get enough nutritious food to eat, the UN Food and Agriculture Organisation (FAO) report said.

"There's too much pressure on marine resources and we need significantly more commitments from governments to improve the state of their fisheries," said Mr. Manuel Barange, Director of the FAO Fisheries and Aquaculture Department.

"We predict that Africa will have to import fish in the future," he told the Thomson Reuters Foundation, adding that shortages could lead to higher prices, disproportionately affecting the poor.

Mr. Barange said Africa had great potential for aquaculture, but needed support in terms of finance, feed and supply of fish.

Fish farming or aquaculture - the fastest growing agricultural sector for the past 40 years - has been largely responsible for making more fish available, said the report.

As catches from the open sea continue to dwindle, more countries are turning to fish farms.

In Algeria, the government is encouraging farmers in the Sahara desert to grow fish to increase their income and boost fish production.

Critics say it can damage the environment and put disease and invasive species into the wild, but Mr. Barange said the solution was to have "proper regulation, legislation and monitoring and control".

Traditional fishing nations are also promoting the potential of fisheries to improve nutrition and end hunger.

Globally, the percentage of stocks fished at unsustainable levels increased to 33.1% in 2015, from 31.4% in 2013 and 10% in 1974.

Fish consumption reached an all-time high of 20.2kg per person from 9kg in 1961, said the report, and further rises are expected as health-conscious consumers turn to fish.

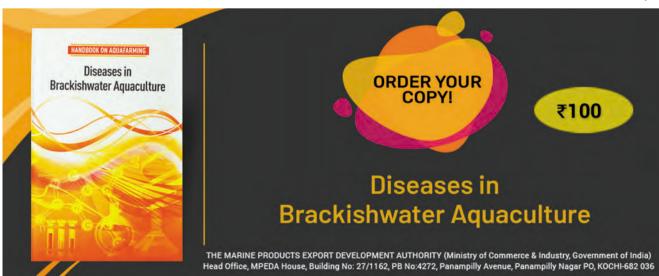
Currently, 3.2 billion people rely on fish for almost 20% of their animal protein intake.

Ms. Shakuntala Thilsted, research programme leader at international non-profit WorldFish, said reducing losses and waste would go a long way towards making fisheries sustainable, with an estimated 35% of catches thrown away.

"Fish heads, fish bones are (the) parts that are most nutritious. Why aren't we using innovative solutions to turn this into nutritious, palatable food?" she said.

..... - www.straitstimes.com





CIFT test kits for detection of formalin and ammonia contamination in fish, all set for commercial level production



Dr. Ravishankar C. N., Director, ICAR-CIFT handing over the MOU to Mr. Vishnu Warke, Director, HiMedia Laboratories

CIFTest, the rapid detection kit developed by the ICAR-Central Institute of Fisheries Technology, Cochin to detect the presence of chemical preservatives formalin and ammonia in fish is set for commercial production. The technology has been licensed to the Mumbaibased HiMedia Laboratories Pvt. Ltd., and the formal exchange of the MoU was held at a simple function at ICAR-CIFT, Cochin on 4th July, 2018. Dr. Ravishankar, C. N., Director, ICAR- CIFT said that the Institute has been in the forefront of technology development for the harvest and post harvest fisheries sectors.

The development of the detection kit was in response to the felt needs of the ordinary fish consumer to detect contaminants and allay their apprehensions. Mr. Vishnu Warke, Director, HiMedia Laboratories said that the company which had its presence in over 175 countries and has the wherewithal to produce sufficient quantities of the product that will be made available to public very soon at affordable rates.

He reiterated the commitment of the company to provide their products to the Indian and export market at affordable prices. Mrs. S. J. Laly and Mrs. E. R. Priya, Scientists of ICAR-CIFT who developed the rapid detection kits in record time, were felicitated during the function. Dr. A. A. Zynudheen, Head, Quality Assurance and Management Division welcomed the gathering and Dr. George Ninan, In-charge, Institute Technology Management Unit offered vote of thanks.





ICAR-CIFT refrigeration enabled mobile fish vending kiosk to aid in backwater tourism

A unit of the refrigeration enabled fish vending kiosk Resorts, Kumarakom on 13 July, 2018. The kiosk is first

of its kind as it is intended for the tourists in houseboats.

The fresh backwater fishes will be displayed in the kiosk, with the provisions for real-time cutting, cleaning and cooking operations. The inauguration of the unit was done by Dr. C.N. Ravishankar, Director, ICAR-CIFT in presence of representatives of Kumarakom Grama Panchayath and hotel management. In his brief, Dr.



developed by ICAR-CIFT was launched at M/s. Paradise

Ravishankar emphasized on the potential of fisheries



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sector and its impact on health and livelihood of people. Dr. Manoj P. Samuel, Principal Scientist and Head, Division of Engineering, ICAR-CIFT, explained the working of the refrigeration enabled mobile fish vending kiosk and its benefits to fisher folks and entrepreneurs. He also briefed on the activities of ICAR-CIFT in general and its association with public.

The mobile refrigeration enabled fish vending kiosk was developed by ICAR-CIFT to improve

the unhygienic handling and marketing practices of fresh fish. The special feature of the kiosk is its fish storage cum display facility and a well-insulated refrigeration system. In this unit, a consumer can see the fishes directly through transparent cover and select according to their choice of purchase. Under ideal operating conditions, the unit can extend the shelf life of fish for 4 to 5 days and increase marginal benefit to fish vendors.

- CIFT



ICAR-CIBA celebrated National Fish Farmers Day on 10 July, 2018 with the costal fishers of Puducherry

ICAR-CIBA celebrated the National Fish Farmers Day on 10th July, 2018 with the costal fishers of the Puducherry. Scientist of CIBA, sensitized fishers and other villagers from the coastal areas of Puducherry on the food production, employment and income generation using cost-effective and environmentally sustainable models of fish farming such as farming of fishes in cages, polyculture and Integrated Multi-Trophic Aquaculture (IMTA), in the vast stretches of brackish water resources available in the region.

Thiru K. Deivasigamani, Additional Director of Fisheries, Puducherry presided over the interaction and stated that under the World Bank funded Fisheries Management for Department of Fisheries Sustainable Livelihoods (FIMSUL) project, co-management and governance systems at village, district and state levels are being planned to enhance the livelihood security and resilience of fishers in the region. However, the fishers were of the view that the rivers are getting polluted mainly due to the disposal of domestic wastes in to the water bodies and misuse of private tourism operators.

They pleaded that the rivers which were rich in fishery resources ought to be cleaned and protected from pollution to continue their fishing livelihood and take up suitable aquaculture production systems. Dr. S. Vasanthakumar, Additional Director of Agriculture and Head, KVK, Puducherry expressed that the aim of the project is to enhance the production and income levels of the fishers by adopting the viable technologies developed by ICAR institutions such as

CIBA. Farmer to Farmer communication has cited as the better fit extension strategy to transfer farming innovations among the farmers with technological support from institutions. In this context, Mr. Premkumar, a fisher entrepreneur partner from Vennangupattu in Kancheepuram district of Tamil Nadu, shared his experience in the cage farming of seabass with the technological support of CIBA, and highlighted the profitability of the venture. Dr. M. Kailasam, Principal Scientist & Scientist-in-Charge, Fin Fish Culture Division of CIBA explained the initiatives of CIBA in the east and west coasts of the country in enhancing the livelihood security and fish production from the least utilized brackish water resources.

Thiru Thirumoolan, Fisheries Subject Matter Specialist at KVK Puducherry accounted the fishery resources of the region and importance of adopting aquaculture technologies in enhancing the fish production and income of fishers. Dr. J. Shyama Dayal, Principal Scientist, CIBA, narrated the zero-stocking approach in Mud crab farming taken up by CIBA in Nagayalenka in Andhra Pradesh for the livelihood development of downtrodden. About 120 fishers, officials from the fisheries department, MSSRF field personnel and scientists participated in the discussion. Earlier Dr. C. V. Sairam, Scientist-in Charge, Social Sciences Division of CIBA in his welcome address highlighted the importance of Fish Farmers Day. Dr. M. Kumaran and Dr. Deboral Vimala, Principal Scientists, CIBA coordinated the programme, and provided solutions for the queries raised by the fishers.

- ICAR-CIBA



Two scientists find new species of stingray along India's east coast

A new species of stingray, now named Indian Ocean blue-spotted maskray, was identified along the Indian coast. Stingrays are flat bodied marine organisms with a venomous tail spine or stinger.

While Australian scientists discovered a new stingray species in the southern part of Indian Ocean in 2015, this is the first time since 1973 that a species from the same family has been discovered by Indian scientists. The new species has been spotted in the Bay of Bengal, along Andhra Pradesh and Tamil Nadu coasts, Lakshadweep Sea and Tanzania coast. The findings were published in an Elsevier Masson research paper.

Pavan-Kumar and Rajan Kumar, both from fish genetics and biotechnology division, ICAR-Central Institute of Fisheries Education (CIFE), Mumbai, along with two scientists from Taiwan and New Caledonia, identified the species through DNA barcoding. They were assisted by the Central Marine Fisheries Research Institute (CMFRI).

"This species was initially described as the blue-spotted mask ray (Neotrygon kuhlii) but after observing the molecular level variation and holotypes from different countries, we concluded that this was a different species. Since it was present in Indian waters, we named it as Neotrygon indica," said Annam Pavan-Kumar, senior scientist, CIFE and lead author of the study.

"The holotype size of the species we studied and submitted to the Zoological Survey of India was at subadult stage 16.6 cm length and 24 cm width. However, their size varies as per their age."

He added that prior to this discovery such species were generally identified by using morphological characters only and under the same family a different

species was identified 45 years ago.

Scientists from CMFRI Mumbai said that there is very little research for diversity studies of Indian marine fauna.

"We don't know how many species are out there without names along the country's coastline," said Akhilesh K. V., Scientist CMFRI.

"The blue-spotted maskray consists of up to 11 lineages representing separate species. Nine of these species have already been described and two (Indian Ocean maskray and Ryukyu maskray) remain undescribed. Here, the Indian Ocean maskray is described as a new species," reads the paper.

A two-member team of scientists Annam

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Seafood consumers want sustainability claims in supermarkets to be verified

Research agency GlobeScan surveyed over 25,000 consumers in 22 countries. Of those surveyed, 72% said that they want independent verification of sustainability claims in supermarkets. That's a jump from MSC's 2016 survey, in which 68% of people surveyed said that they want independent verification.

The researchers found that most seafood consumers agree that "in order to save the oceans we need to consume seafood from sustainable sources." However, the researchers also found that consumers are putting price before sustainability when purchasing seafood.

"This survey shows that consumers really do care about the oceans, but with so much confusion about how consumers can help, it's more important than ever to cut through the clutter and deliver an easy way for people to choose sustainable seafood," Richard Stobart, head of marketing for the Marine Stewardship Council, said in a press release. "With a rising consumer focus on price, and the finding that worldwide more than half of consumers report eating seafood weekly, it is critically important that they have a range of clearly labelled sustainable options at the right price point. We're pleased to see that trust in the blue MSC label remains very high and our focus continues to be to drive understanding of the label."

According to the study, 69% trust the blue MSC label. And understanding of MSC's label is increasing as well. From 2016 to 2018 the number of people who understand the label jumped from 32% to 37%.

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Training Programme on Fabrication of Improved Fishing Gear

Verval Research Centre of ICAR-Central Institute of Fisheries Technology offered a three-day Training programme on gear fabrication, net mending and repair during 28-31 July, 2017 to fisherman of Saurashtra region. The programme was funded by National Fisheries Development Board (NFDB), Hyderabad. In the introductory session, Dr. Toms C. Joseph, Scientist in-charge of the Centre reminded the need of training programmes for improving the skill and efficiency of the fishermen and also added that such training programmes will help to introduce the recent technological advancement happening in the sector to the fisherman. Dr. K. K. Prajith, Scientist and Course Director for the programme detailed the scope, objective, schedule and structure of the training

programme. Dr. A.K. Jha, Scientist and Mr. Vinay Kumar Vase, Scientist in-charge, Veraval RC of ICAR-CMFRI offered felicitations.

Twenty five fishermen from various Fishermen Societies of Veraval participated in the Programme which consisted of sessions on responsible fishing techniques, basics of fishing gear fabrication, bycatch reduction devices, fabrication of improved gillnets, square mesh cod end fabrication etc. handled by experts. Practical demonstrations were done by Mr. H.V. Pungera and Mr. J.B. Malmadi, Technical Officers. In the concluding ceremony held on 31 July, 2018 the Scientist In-charge of the Centre distributed certificates to the participants.

ICAR Foundation Day promotes Start-ups in Aquaculture Sector

Start up initiatives in farming sector are aimed to infuse innovations and entrepreneurship in farming to make it more lucrative and boost its technical efficiency. In this direction, ICAR-CIBA has organized a Brainstorming workshop on "Start-up India programme on aquaculture sector" as part of the 90th ICAR Foundation Day as ICAR Industry Day on 16th July 2018.

The unique component of the workshop is that selected outgoing students from Fisheries Colleges of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu were invited to present their draft projects related to start-ups in aquaculture sector before a panel of experts drawn from industry, promotional agencies like MPEDA, NFDB, MSME, CII, FICCI, Investors, Startups, Farmers, Professors and Scientists for their review and suggestions.

The proposals included cost effective feed for freshwater aquaculture, value added products and its labelling, certification and marketing avenues, aquaculture vaccines, seaweed technologies, probiotics, online delivery system using IoT and Android, genetically improved ornamental fish, live fish marketing system and integrated aquaculture system.

The panellists gave their views on the projects, sensitized them the application procedures and financial support offered by the banks, funding agencies and clarified the technical doubts regarding the start-up entities presented. Subsequently, officials from NFDB, MSME and MEDA explained the details of various schemes offered by them for the promotion of start-up enterprises in the aquaculture sector.

The workshop was presided by Dr. S.V. Alavandi Director i/c, CIBA Chennai and he quoted the industry's estimates, that aquaculture production of shrimp may exceed 6 lakh tons in the coming year. Hence there is wide scope for establishing start-ups in hatchery, farming and feed sector of aquaculture sector he expressed.

He further informed that during the International Conference - Braqcon 2019 to be held at ICAR-CIBA Chennai during January 2019, another mega-event on start-up will be organised for evolving strategies for sustainable development of start-ups in aquaculture. Mr. Ruban Hobday, Additional Director, FICCI, Chennai was the Chief Guest and he assured that FICCI will give the best possible support for the start-ups in aquaculture sector. About 70 participants including officials from State Fisheries Departments, Development Agencies like NFDB, MPEDA, MSME, CII, FICCI, Investors, Start-ups, Professors and students from State Fisheries Universities attended the workshop and participated in the panel discussions. The meeting was co-ordinated by Dr. T. Ravisankar OIC, ITMU and Dr. P.K. Patil, Co-PI ITMU and scientists/ officials from ITMU and Social Science Division. - ICAR-CIBA

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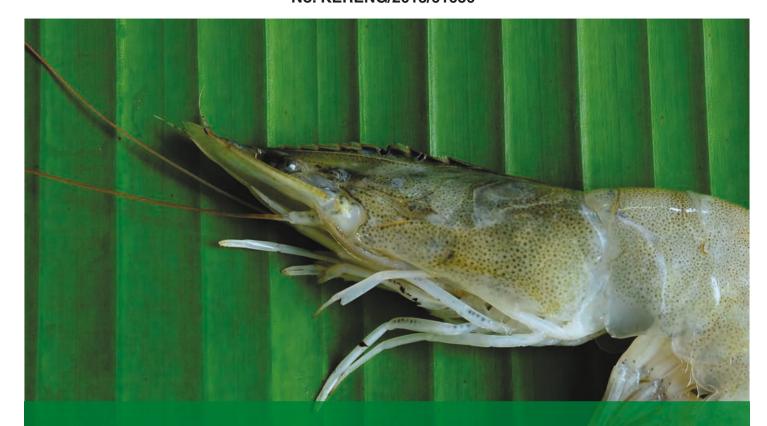




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