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 'Suchitwa Sagaram' project for eradication of plastic from sea

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**COVER IMAGE** : Fishing activity in Goan village Beach **PHOTO** : Rejeesh Bhaskaran

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**Dr. A. JAYATHILAK IAS** Chairman

In the Platter

Dear friends,

I am glad to announce that MPEDA has inaugurated a Quality Control Laboratory at Bhubaneswar on 19<sup>th</sup> February 2018, for testing of Chloramphenicol and Nitrofuran metabolites in fish & fishery products with state-of-the art facilities. The laboratory has got the accreditation from National Accreditation Board for Testing and Calibration Laboratories (NABL) and the approval by the Export Inspection Council of India (EIC). The laboratory offers testing for these parameters at rates lower than the market rates by other labs.

Hon'ble Union Commerce and Industry Minister Shri Suresh Prabhu and Hon'ble Chief Minister of Andhra Pradesh, Shri N Chandrababu Naidu has formally launched the MPEDA enrollment cards to the shrimp farmers during the state government's Partnership Summit 2018 event at Vishakhapatanam. The farmers' enrollment cards carry a Unique Identification Number and Quick Response code containing basic information about the enrolled farms. Issuing of enrolment card is one of the key steps for providing an effective traceability system for the farmed seafood. It was a unique initiative by MPEDA to develop a GPS-based database of export-oriented aquaculture farms in the country for their traceability and quality control, an effort that could win the confidence of the end-consumer.

The Globefish reports that aquaculture continues to increase its contribution towards fish food supply with a total harvest of 83.6 MT in 2017. The capture fisheries production was stable at 90.4 MT in 2017 as per Globefish estimates. Given the fact that a significant proportion of the captured fish are utilized for feed production, the aquaculture's contribution in supplementing the human consumption is significantly higher. The report also ranks India as a major seafood exporter in terms of revenue growth propelled by the shrimp exports from the country. India is now placed at 4<sup>th</sup> position among the top seafood exporters.

Market reports also predict an increased production of shrimp from major producers this year which may influence the demand and price structure. In such a situation, it is advisable to look towards value addition for export supplies rather than sending raw frozen material, so that the interest of farmers as well as exporters can be addressed suitably.

Recently, MPEDA has given a provision in its online trade portal "Fish Exchange" a provision for the farmers to register and place their produce for sales before the registered exporters. It also helps to improve the traceability, and economic benefits as middlemen are kept out of the transaction, giving a win-win situation for both farmer and exporter. The farmers will be helped by the field offices of MPEDA as well as the co-ordinators of NaCSA to register them to the "Fish Exchange" portal and to guide them in placing orders. All the farmers and exporters are requested to effectively utilize the Free Trade platforms of Fish Exchange Portal.

Thank you.



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# 

### **MARKETING** NEWS

# US Shrimp imports through December 2017

During December 2017, the US imported 59,782 MT of shrimp, which is 10.7 percent higher than 54,022 MT of imports in December 2016. During December 2017 the maximum quantity of shrimp imported to US from India was 18,980 MT, against the import of 14,315 MT during December

2016. In the calendar year 2017, US imported 6,64,119 MT of shrimp, up 10.04 percent from that of 6,03,542 MT in 2016. In 2017, the maximum quantity of shrimp imported was from India and that amounted to 2,13,963 MT, against 1,53,956 MT in 2016.

U.S. SHRIMP IMPORTS in MT THROUGH DECEMBER 2017				
Country Name	Dec-16	Dec-17	JAN-DEC 2016	JAN-DEC 2017
ARGENTINA	860	1,334	7,732	12,534
AUSTRALIA	12	33	31	103
BANGLADESH	516	105	4,102	1,294
BELIZE	65	0	212	102
BRAZIL	0	0	8	0
BRUNEI	0	0	26	1
BURMA	17	4	174	299
CANADA	84	96	3,922	1,802
CHILE	9	28	120	101
CHINA	3,894	4,011	34,783	46,009
CHINA - HONG KONG	1	6	55	69
COLOMBIA	0	3	44	87
COSTA RICA	4	2	71	75
CYPRUS	0	0	19	0
DENMARK	1	3	83	45
ECUADOR	4,965	5,169	73,128	71,787
EL SALVADOR	2	6	25	31
GHANA	0	0	0	9
GREENLAND	0	0	2	21
GUATEMALA	366	140	2,874	2,818
GUYANA	767	728	8,394	9,289
HAITI	0	0	0	0
HONDURAS	654	969	3,647	5,649
ICELAND	0	0	0	35
INDIA	14,315	18,980	1,53,956	2,13,963
INDONESIA	9,212	10,815	1,17,108	1,18,033
ITALY	0	0	0	16

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# **MARKETING** NEWS

IVORY COAST	0	0	0	0
JAMAICA	0	0	0	0
JAPAN	1	1	2	3
MADAGASCAR	0	0	28	0
MALAYSIA	28	1	260	254
MEXICO	2,188	3,960	25,326	28,539
MOROCCO	0	0	1	0
NETHERLANDS	0	1	0	14
NEW CALEDONIA	0	0	24	18
NEW ZEALAND	0	0	16	0
NICARAGUA	383	388	2,497	1,837
NIGERIA	24	0	124	129
NORWAY	0	0	16	19
OMAN	0	0	0	3
PAKISTAN	35	11	261	229
PANAMA	413	225	3,066	2,623
PERU	727	815	9,511	9,950
PHILIPPINES	271	337	2,158	2,560
PORTUGAL	0	4	26	19
RUSSIAN FEDERATION	0	0	1	0
SAUDI ARABIA	70	0	1,030	0
SENEGAL	0	0	28	11
SINGAPORE	0	0	1	1
SOUTH KOREA	19	12	121	97
SPAIN	0	1	69	82
SRI LANKA	27	3	171	168
SURINAME	47	19	474	379
SWEDEN	0	0	0	6
TAIWAN	14	6	130	172
THAILAND	8,822	6,656	81,152	74,552
UNITED ARAB EMIRATES	14	75	233	383
UNITED KINGDOM	0	0	0	0
VENEZUELA	266	169	2,903	2,076
VIETNAM	4,929	4,666	63,397	55,823
Total	54,022	59,782	6,03,542	6,64,119

SOURCE: NOAA FISHERIES, OFFICE OF SCIENCE & TECHNOLOGY

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# Tremendous response for SAFARI 2 expo in Kochi



Dr. Trilochan Mohapatra, DG, ICAR along with Dr. J. K. Jena, DDG (Fisheries), ICAR and Dr. A. Gopalakrishnan, Director, CMFRI visiting NETFISH stall at SAFARI 2 Expo

ETFISH along with MPEDA Regional Division, Kochi took part in the exhibition organized on the sidelines of the Second International Symposium on 'Societal Application in Fisheries and Aquaculture using Remote Sensing Imagery (SAFARI)' organized by CMFRI at Kochi during January 15-17, 2018. A stall displaying various posters depicting information on marine fisheries sector and different handouts illustrating fishery conservation measures, information on aquaponics, etc. was arranged for the visitors. The expo received tremendous response from the public.

#### ALBERTIAN INTERNATIONAL EDUCATION EXPO 2018

A stall was set up by NETFISH jointly with MPEDA Regional Division, Kochi in the 'Albertian International Education Expo' organized by St. Albert's College, Ernakulam during January 4-6, 2018 at the college campus.

The show turned out to be a good platform for MPEDA and NETFISH to popularise its various activities for the promotion of seafood export. The stall displayed various awareness posters of NETFISH, mostly on hygienic handling of fish and conservation of fishery resources. Brochures and leaflets depicting information on aquaponics, nutritional value of fish, fish handling procedures, fishery conservation measures were kept for distribution among the needy.

Students of the college as well as students from nearby

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General public checking out the posters and leaflets displayed in the MPEDA/NETFISH stall at SAFARI 2 Expo

educational institutes visited the stall and many of them showed keen enthusiasm in gathering information about our activities.



A view of NETFISH-MPEDA stall in the Albertian Expo

# NETFISH at 'Karavali Utsav 2017' held in Karwar



aravali Utsav is a three decades old festival of Karwar district in Karnataka, being organized by District Administration every year. Karavali in Kannada means coastal area. 'Karavali Utsav 2017' was held in Karwar during December 8-10, 2017 at the District Head Quarters in Ravindranath Tagore Beach.

NETFISH put up a stall with the involvement of Gulabi Swasahaya Sangh - a NETFISH trained women self-help group under the member NGO SCODWES. This group produces and sells various value-added fishery products including dry fish products on a small scale. All the members of this group, under the supervision of the field officer of SCODWES, prepared various value-added fishery products and packed them in food grade plastic packets bearing NETFISH and SCODWES logos, prior to the festival.

In the NETFISH stall, the value-added products such as Prawns chutney powder, Croaker chutney powder, Anchovy chutney powder, Mackerel chutney powder and Dried Shark moles, were arranged attractively for sale. A good number of people visited the stall and showed a very positive response towards the fishery products by which a decent income could be generated during the three-day festival. Many of public urged to put up a permanent stall so that they can get the products even after the festival.

Posters containing information on various activities carried out jointly by NETFISH and SCODWES in the state were also displayed in the stall and leaflets on quality management and conservation of fisheries was distributed among the needy.

The value-added fishery products kept for sale in the stall



∧ Public response to the NETFISH stall at Karavali festival

NETFISH documentaries and animation movies in Hindi and Kannada were also shown in the stall, which attracted the crowd. The women self-help group members thanked NETFISH and SCODWES for providing the opportunity to participate in the Karavali festival and to sell their products, which has turned into a great encouragement for them to produce more such products.





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# Highlights of marine fish landings in selected harbours of India during January 2018

# HANUMANTHA RAO, V. V. AFSAL, N. J. NEETHU AND JOICE V. THOMAS

NETFISH-MPEDA

nformation on boat arrivals and fish landings at the major fishing harbours along the east and west coasts of India is recorded by NETFISH as part of MPEDA's catch certification system. NETFISH monitors the marine fish capture along Indian coast by recording the boat arrivals and fish landings at 46 major harbours and landing centres (Table 1) from the 9 maritime states in the country. The data collected are processed to arrive at a species-wise, state-wise, region-wise and harbour-wise evaluation of landings using MS office (excel). This report highlights the marine fish landings at major harbours of India during January 2018.

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

SI. No.	State	Fishing harbour
1		Beypore
2		Puthiyappa
3		Thoppumpady
4	Kanala	Munambam
5	Kerala	Sakthikulangara
6		Thottapally
7		Kayamkulam
8		Vizhinjam
9	Karnataka	Mangalore
10		Malpe
11		Gangoli
12		Tadri
13		Karwar
14		Harne
15		New Ferry Wharf
16	Maharashtra	Ratnagiri (Mirkarwada)
17		Sasson Dock

18		Veraval
19	Gujarat	Porbandar
20		Mangrol
21		Digha (Sankarpur)
22		Deshapran
23	West Damas	Namkhana
24	west Bengal	Sultanpur
25		Kakdwip
26		Raidigi
27		Paradeep
28		Balaramgadi
29	Udisha	Bahabalapur
30		Dhamara
31		Kakinada
32	Andhra Pradesh	Machilipatnam
33		Nizampatnam
34		Visakhapatnam
35		Chennai
36		Pazhaiyar
37		Nagapattinam
38		Tuticorin
39	Tantinia	Cuddalore
40	Tamii Nadu	Mandapam
41		Colachel
42		Pondicherry
43		Karaikal
44		Chinnamottom
45	0	Cutbona
46	Goa	Malim

#### **ESTIMATES BASED ON FISH LANDINGS**

A total catch of 86568.64 tons of marine fishery resources was recorded from the 46 landing sites during January 2018, which were comprised of 37443.01 tons (43%) of pelagic finfish resources, 27540.88 tons (32%) of Demersal finfishes, 13732.36 tons (16%) of Molluscans and 7852.39 tons (9%) of Crustacean varieties (Fig 1).

Among the landings of 109 varieties of fish items recorded during the month, the top five contributors, in the chronological order, were Ribbonfish, Indian mackerel, Squid, Japanese threadfin bream and Indian oil sardine (Fig 2), which together formed 40% of the total catch. The Ribbonfish landing recorded during the period was 7526.59 tons (9% of total catch) and it was the species which recorded maximum landing. Besides the above listed 5 fishery items, the other major contributors to the total catch were Cuttlefish and Dusky finned bull's eye, which registered a share of 5062.95 tons and 4995.13 tons respectively. The White snapper was the species which recorded the least quantity during the month (0.30 tons).

The category-wise quantity of various fishery items recorded during January 2018 is given in Table 2. Among pelagic finfish resources, the Ribbonfish recorded the highest landing which was followed by Indian mackerel and Indian oil sardine. In the case of demersal finfishes, the major contributors were Bull's eyes, Japanese threadfin bream and Croakers. The Molluscan stock comprised of Squid, Cuttlefish and Octopus formed 64% of the shellfish landing and the rest 36% were of Crustaceans. Among Crustaceans, Penaeid shrimps were the major contributor, wherein *Karikkadi shrimp* had the highest share (2070.92 tons).







Fish item	Qty. in tons	% of total catch		
Pelagic finfish				
Ribbonfish	7526.59	8.69		
Indian mackerel	7302.18	8.44		
Indian oil sardine	5865.53	6.78		
Tuna	4209.77	4.86		
Seer fish	2346.04	2.71		
Anchovies	2164.94	2.50		
Scads	1318.90	1.52		
Horse mackerel	1254.94	1.45		
Dolphin fish	1154.39	1.33		

#### Table 2: Category-wise Landing of various fishery items during January 2018

Barracuda	896.06	1.04
Trevallys	620.34	0.72
Lesser sardines	606.88	0.70
Bombay duck	558.64	0.65
Herring	245.72	0.28
Queen fishes	207.51	0.24
Leather jacket	190.31	0.22
Mullet	140.88	0.16
Indian thread fish	138.80	0.16
Indian ilisha	104.55	0.12
Cobia	97.10	0.11



Marlins	85.43	0.10
Needle fish	83.30	0.10
Oriental bonito	69.40	0.08
Hilsa	66.94	0.08
Flat needle fish	55.96	0.06
Indian salmon	46.09	0.05
Sail fish	39.60	0.05
Sea bass	29.00	0.03
Silver sillago	9.65	0.01
Rainbow runner	7.09	0.01
Milk fish	0.50	0.00
Total Pelagic	37443.01	43.25
Demersal finfish		
Bull's eye	6908.33	7.98
Japanese threadfin bream	6379.54	7.37
Croakers	3460.80	4.00
Sole fish	2665.51	3.08
Lizard fish	2122.48	2.45
Cat fish	1690.78	1.95
Reef cod	1559.38	1.80
Snapper	1073.13	1.24
Pomfret	682.98	0.79
Moon fish	270.30	0.31
Pony fish	218.28	0.25
Eel	150.98	0.17
Goat fish	146.02	0.17
Rays	100.87	0.12
Tiger perch	22.24	0.03
Emperor bream	20.72	0.02
Glassy perchlet	15.73	0.02
Indian halibut	14.54	0.02
Ghol	14.41	0.02
Parrot fish	7.00	0.01
Whip fin silver biddy	6.85	0.01
Batfish	3.41	0.00

Black tip shark	3.10	0.00
Filefish	2.00	0.00
Yellow fin sea bream	1.55	0.00
Total	27540.88	31.81
Shellfish		
Crustacean		
Penaeid shrimps	7183.60	8.30
Sea crab	625.84	0.72
Mud crab	21.23	0.02
Lobsters	17.22	0.02
Non penaeid shrimp	4.50	0.01
Total Crustacean	7852.39	9.07
Mollusc		
Squid	7181.57	8.30
Cuttlefish	5062.95	5.85
Octopus	1487.84	1.72
Total Mollusc	13732.36	15.86
Total Shellfish	21584.75	24.93
Grand Total	86568.64	100.00

#### **REGION-WISE LANDINGS**

On assessing landing data region-wise, it was found that the South West coast (comprised of 15 selected harbours in Kerala, Karnataka and Goa) registered the maximum quantity, which was to the tune of 37,099.25 tons (43%) and followed by North West region (comprised of 7 selected landing sites in Maharashtra and Gujarat coasts) with 37020.39 tons (43%) (Fig. 3).



The landings from 13 harbours in Tamil Nadu and Andhra Pradesh formed the catch data for the South East region, where a total quantity of 5140.83 tons (only 6% of the total catch) was recorded. The North East region consisting of 10 of the selected landings sites in Odisha and West Bengal recorded a quantity of 7308.17 tons (8%).

In the South West and North East coasts pelagic finfish landing was much higher than the other 2 categories, whereas, in North West, demersal finfish stocks recorded more in quantity than pelagic finfishes and shellfishes (Fig. 4). In South East, the landing was dominated by shellfish resources. Shellfish landing was the lowest in all the regions except South East.

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



Fig. 4. Comparison of category-wise contribution (in tons) of total landings in each region

#### Table 3. Major items landed in each region during January 2018

ltem	Quantity in tons	% of total landings of the region		
South West				
Indian mackerel	5141.47	13.86		
Indian oil sardine	5133.74	13.84		
Japanese Threadfin bream	3502.97	9.44		
Squid	3176.81	8.56		
Cuttlefish	1611.78	4.34		
North West				
Ribbonfish	5342.27	14.43		
Bull's eye- dusky finned	4403.10	11.89		
Squid	3509.19	9.48		
Cuttlefish	2716.96	7.34		
Japanese Threadfin bream	2647.30	7.15		
South East				
Tuna	534.66	10.40		
Cuttlefish	495.43	9.64		
Ribbonfish	375.83	7.31		
White prawn	282.95	5.50		
Squid	279.37	5.43		
North East				
Croaker	1004.58	13.75		
Golden anchovy	597.73	8.18		



Indian oil sardine	563.48	7.71
Ribbo fish	519.72	7.11
Karikkadi shrimp	378.27	5.18

#### **STATE-WISE LANDINGS**

Among the 9 maritime states in the main land of India, the state of Gujarat had recorded the maximum marine fish landing during the month, which was to the tune of 25,846.79 tons forming around 30% of the total catch (Fig. 5). Next to Gujarat, the state of Kerala contributed 18124.18 tons which was around 21% of the total quantity recorded from all the states. Karnataka held the third place with a total landing of 15386.36 tons (18%). The West coast states together formed more than 85% of the total catch. In East coast, the highest landing was reported from West Bengal which was 4755.69 tons (5%). The state which recorded least landing during the month was Andhra Pradesh where merely 2134.53 tons of marine fish catch was recorded.

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





	Quantity	% of total	Indian mackerel	1120.05	31.21
Item in tons	in tons	landings of the state	Indian oil sardine	583.10	16.25
Kerala			Little tunny	408.40	11.38
Japanese	2112.62	11.66	Tuna	361.29	10.07
Threadfin bream			Squid	286.70	7.99
Indian oil sardine	2001.97	11.05	Maharashtra		
Squid	1408.10	7.77	Indian mackerel	984.73	8.81
Cuttlefish	1163.66	6.42	Horse mackerel	965.87	8.64
Indian mackerel	1018.97	5.62	Squid	960.39	8.60
Karnataka		Croaker	904.59	8.10	
Indian mackerel	3002.45	19.51	Ribbon fish	894.27	8.00
Indian oil sardine	2548.67	16.56	Gujarat		
Squid	1482.01	9.63	Ribbonfish	4448.00	17.21
Japanese Threadfin bream	1369.96	8.90	Bull's eye- dusky finned	4403.10	17.04
Bull's eye-dusky	590.63	3.84	Squid	2548.80	9.86
finned			Cuttlefish	2293.90	8.87
Goa					

#### Table 4 .Major items landed in various states during January 2018

Japanese Threadfin bream	2149.50 8.32			
Tamil Nadu				
Cuttlefish	467.71	15.56		
Squid	252.70	8.41		
Tuna	205.17	6.82		
Indian oil sardine	141.49	4.71		
Indian mackerel	120.06	3.99		
Andhra Pradesh				
Tuna	329.49	15.44		
Ribbonfish	286.41	13.42		
White prawn	212.19	9.94		
Brown shrimp	198.87	9.32		
Pink shrimp	186.97	8.76		
Odisha				
Croaker	514.83	20.17		
Golden anchovy	253.42	9.93		
Ribbon fish	243.95	9.56		
Sole fish	184.08	7.21		
Japanese Threadfin bream	170.62	6.68		
West Bengal				
Croaker	489.748	10.30		
Indian oil sardine	479.192	10.08		
Golden anchovy	344.311	7.24		
Bombay duck	327.804 6.89			
Indian mackerel	296.240 6.23			

#### HARBOUR-WISE LANDINGS

The fish landings recorded during the month at the selected harbours along West and East coasts are presented in figures 6 and 7 respectively. Of the 46 harbours, Beypore harbour in Kerala registered the maximum landing of 10888.50 tons (13%) and followed by Veraval harbour in Gujarat with a contribution of 10539.70 tons (12%). Porbandar harbour in Gujarat recording a quantity of 9135.09 tons (11%) and Mangalore harbour in Karnataka with a quantity of 7048.87 tons (8%) held the subsequent positions. Along East coast, the harbour which recorded the highest landing was Deshapran in West Bengal where 1822.31 tons (2%) was landed. Fifteen out of the selected 22 harbours in the West coast recorded more than 1000 tons of catch whereas



only 3 out of 24 harbours of East coast had recorded over 1000 tons of catch. The least quantity of landings was recorded from Vizhinjam harbour (31.14 tons) in Kerala.







### ESTIMATES BASED ON BOAT ARRIVAL

A total of 33568 boat arrivals were recorded during January 2018, of which the highest of 4677 boat arrivals was from Veraval harbour. Next to Veraval was the Porbandar harbour where 3106 numbers of boat arrivals had occurred. Only 7 out of the 46 harbours had recorded more than 1000 boat

arrivals during the period, the details of which are given in table 5. Around 78% 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, Ring seiners, Gill netters, Long liners and Traditional crafts.

# Table 5.Fishing harbours which recorded > 1000 boat landings during January 2018

SI. No.	Fishing harbours	State	Number of boat landings
1	Veraval	Gujarat	4677
2	Porbandar	Gujarat	3106
3	Mangrol	Gujarat	2658
4	Mangalore	Karnataka	2092
5	Malpe	Karnataka	2001
6	Harne	Maharashtra	1362
7	Ratnagiri (Mirkarwada)	Maharashtra	1042

#### **COMPARATIVE ANALYSIS**

Table 6 shows the comparison of the data of January 2018 with that of previous months. The total fish catch had increased by more than 3700 tons during January when compared to that of December 2017. The Pelagic finfish continued as the top contributor to the total catch but showed a decrease by 5% in share. The percentage share of Demersal fin fish resources had increased by 4% and the percentage share of shellfish landing increased by 1%. Ribbon fish continued as the topmost contributor during the period and the Indian oil sardine was moved to the fifth position.

The state of Gujarat continued in the top position in terms of landings but the harbour which recorded the maximum catch was Beypore harbour in Kerala. Veraval harbour could attain only the second position next to Beypore in terms of total quantity of fish landing. The total number of boat arrivals recorded had increased in January 2018 by over 1400 boats when compared to that of December 2017.

#### Table 6. Comparative analysis of the data

	November 2017	December 2017	January 2018
Total Catch	1,04,988.48 t	82,849.37 t	86,568.64 t
Landing of Pelagic finfishes	54,485.10 t (52%)	39,510.15 t (48%)	37,443.01 t (43%)
Landing of Demersal finfishes	25,499.46 t (24%)	23,492.34 t (28%)	27,540.88 t (32%)
Landing of Shellfishes	25,003.91 t (24%)	19,846.87 t (24%)	21,584.75 t (25%)
Species recorded highest landing	Indian oil sardine (15%)	Indian oil sardine (10%)	Ribbon fish(9%)
State recorded highest landing	Gujarat (26%)	Gujarat (30%)	Gujarat (30%)
Harbour recorded highest landing	Veraval (13%)	Veraval (13%)	Beypore (13%)
Total Boat Arrivals	36,858	32,115	32,115

\*Percentage of Total Catch

#### **SUMMARY**

In January 2018, a total landing of 86568.64 tons of marine fishery resources were recorded from 46 major fish landing sites of India, wherein pelagic finfishes contributed more quantity than demersal finfishes and shellfish stocks. Considering the total quantity landed, Ribbon fish recorded as the major contributor. Landings from the West coast states together formed more than 85% of the total catch, and the South West coast contributed the maximum share of more than 43%. The state of Gujarat recorded the highest catch among the 9 maritime states. Among the 46 selected harbours, 18 harbours recorded more than 1000 tons of fish landings and the Beypore harbour registered the highest landing. However the highest number of boat arrivals was recorded from the Veraval harbour.



# Sustainability project on Blue Swimming Crab Portunus pelagicus

#### **Dr. G. SANJEEVIRAJ**

Coordinator, BSC FIP programme, Crab Meat Processors Association, India

Protein-rich food materials, especially animal protein are in high demand across the globe. The demand for fish and fishery products, crustaceans from marine and freshwater resources, finfishes from both the environment and molluscan meat from the marine environment are increasing day by day.

Among the crustaceans, shrimps from marine environment constitute a lion's share in both the domestic and global markets. The shrimps from the marine environment and from the aquaculture farm meet the global demand, as well domestic needs.



Blue Swimming Crab landing at Vellappatti fishing village in Tuticorin district

Another major component in the crustacean fishery is shared by crabs. The crabs which are exported come from marine and brackish water environments. The exportable or live brackish water crabs are large crab - scientifically called as *Scylla tranquabaricus* and small crab - *Scylla serrata*. As far as the marine crabs are concerned, several species are available; but only limited number of species alone are edible and among this, the bigger crab like *Portunus pelagicus* - commonly known as Blue Swimming Crab (BSC) is the most preferred in both domestic and global markets. These crabs are landed in large quantities in almost all the fish landing centres on both the coasts of India. They are captured generally by the traditional fishing crafts, now by the Fiberglass Reinforced Plastic or FRP crafts and by the trawlers. The gear engaged for fishing is the set gill net.

#### Blue Swimming Crab - Portunus pelagicus

This species is a free swimming crab and mostly lives in the inshore waters, where the food materials are abundant in nature. The adult grows to a harvestable size (18-22 cm). The fecundity is also high. The crabs migrate to the open sea where the sea water is clear. The eggs will be yellowish initially, as they grow becomes orange/brown in colour. The reproduction takes place by copulation of male and female crabs, as the sexes are separate. During copulation, the male will deposit spermatozoa into spermatheca of the female located on the ventral side. Once the crab berried the eggs turn into brown in colour, wherein fully matured eggs will give black colouration and the fertilized eggs hatch out into microscopic tiny planktonic larvae. These larvae undergo serial developments to become juvenile crabs. The presence of this Blue Swimming Crabs has been noticed in both the coasts of Indian Archipelago.

The country is blessed with about 8,000 km long coastline and the Tamil Nadu has 1,076 km. These BSCs are landed on both the coasts, but large quantity of crabs is landed on the east coast. In the west coast region, the capture of crabs is seasonal. The major landing centres are Gulf of Kutch and Karwar Coast and the average annual landing is about 500-700 metric tons. On the east coast, three major landing centers have been identified; viz. Gulf of Mannar or GOM, Palk Bay or PB and the region above the Palk bay reaching up to West Bengal. Since the GOM and



A Berried crabs



PB coasts are having more number of crab landing fishing villages. The Kakinada coast records only seasonal fishing during the rainy seasons and the average annual landing lies between 80-100 metric tons. The PB zones recorded an average of 500 metric tons. The GOM region's landing



CMPA Field workers collecting data



Fishermen dislodging the crabs from the gill net

centres record large quantity of 2,000-3,000 metric tons annually. The BSCs are captured in large quantities from many fishing villages on both the coasts.

The crabs thus harvested are consumed in the local markets, approximately 20 percent, and the rest 80 percent of the catch is exported to various international markets. A small quantity is used in the form of cut-frozen crabs and the rest quantity is used as pasteurized finished products. Roughly 40 percent of the catch is exported to U.S. As the demand for BSC is increasing globally, the care for its population sustainability, spawning potential, the recruitment of this crab in the marine environment and its ecological environment, etc. need special attention.

# **Crab Meat Processors Association (CMPA), India**

Crab Meat Processors Association, India, with crab exporting companies as its members, has initiated Fishery Improvement Programme (FIP) for Blue Swimming Crab (BSC) in India under the technical and financial assistance from National Fisheries Institute, Crab Council (NFI CC) based in U.S.

Principle 1. Biological Status of the Blue Swimming Crab - the sustainability and spawning potential of BSC

Principle 2. Ecological Status - Environmental conditions and by-catch analysis

Principle 3. Managerial status of BSC fishery - involvement of different stakeholders like fishing community, agents and Industries and administrators like village heads, local and district administrators, State Fisheries Department and State Government.

Mr. Ch. Kishore Kumar, Director, Sandy Bay Seafoods (India) Private Limited and Vice Chairman of MPEDA is serving as President of CMPA.

#### NATIONAL FISHERIES INSTITUTE (NFI) CRAB COUNCIL

The NFI Crab Council is an association focused on crab sustainability. The NFI Crab Council members collectively represent around 85 percent of the total Blue Swimming Crab imported into the U.S. As an association of U.S. seafood companies, the Crab Council recognizes the importance of maintaining successful crab fisheries for international businesses as well as local economies. The NFI Crab Council is comprised of representatives from the blue swimmer crab industry dedicated to initiating and supporting global implementation of standards and practices designed to enhance fishery and industry management based on sound ecological and economic principles. The Council's primary goal is to ensure that blue swimmer crab populations, the ecosystems they depend on and the communities that rely on the fisheries remain viable, productive and stable now and in the future. The Council works to achieve global industry sustainability through education, advocacy and the integrity of its members. The Council was formed in 2009 and is comprised of 17 member companies representing more than 85 percent of the blue swimming crab imported into the U.S.

The NFI Crab Council is seeking to expand its work in developing and funding sustainability initiatives in countries, where Blue Swimmer Crab is harvested and exported. Currently the Council works with Indonesian Association of Crab Producers or APRI formed in 2007 and Philippine Association of Crab Producers, Inc. or PACPI formed in 2009, Vietnam Association of Seafood Exporters and Processors or VASEP Crab Council, formed 2010, Thai Crab Product Group or TCPG formed in 2012, Indian Crab Product Group or ICPG formed in 2012, and Seafood Exporters Association of Sri Lanka or SEASL initiative started in 2013 to fund work based on fisheries improvement plans that were developed and submitted to the Council for approval. During the year 2017, BSC FIP activity has commenced in India under the banner of CMPA.

In addition to directly funding sustainability projects overseen by the in-country producer organisations, the Council agreed earlier in 2011 to support phase-out the harvest of undersized/premature crabs in all producing countries through a voluntary policy to include a minimum size of 8 cm carapace width in purchasing specification. Furthermore, develop product specifications that are evident in sustainable fishing practices. In 2017, the processors registered the Crab Meat Processors' Association (CMPA) in which seven active export companies are members.

#### FISHERY IMPROVEMENT PROGRAMME (FIP)

The Fishery Improvement Programme (FIP) a programme

by National Fisheries Institute (NFI) of Crab Council, USA has been initiated almost in all crab exporting nations from 2013. Indonesia has taken up the study from the year 2013, followed by Vietnam, Philippines, Thailand, Sri Lanka and India from the middle of the year 2017. The FIP work has been initiated from the major crab landing centre called Vellappatti in Tuticorin District of Tamil Nadu and followed in all the crab landing centres in India as a whole. At the beginning of the project, the data on crab capture would be taken up in Tamil Nadu. The programme has been started since July 2017 with the appointment of Dr. G. Sanjeeviraj, as Coordinator and two field workers. The team started collecting daily catch composition of BSC from the major and exclusive crab fishing village Vellappatti in Tuticorin district and many fishing villages in Ramanathapuram district.



Delegates from various nations at the Bangkok meeting

The data includes the daily total catch in bio-mass (quantity in kg), numbers of individual crab from the total landing, the number of male and female crabs and their biomass respectively, the male and female sex ratio on the basis of numeric and quantum volume, the percentage of male and female crabs in the entire volume of daily landing, the data on the meristic characters such as carapace length range of individual male and females and their percentage representation and individual weight range of both sexes and the occasional landing of berried crabs which is in very meager quantity (less than 1-2 % of total catch) and the stages of berried eggs, etc.

#### THE RELATED ACTIVITIES

Dr. G. Sanjeeviraj, the coordinator of CMPA was deputed to Sri Lanka to have the background knowledge on FIP from Sri Lankan Crab Export Council Coordinator, Dr. Steve Crech during July 17-23, 2017. Mr. Kishore Kumar, President and Dr. G. Sanjeeviraj, the coordinator of CMPA attended the second meeting of FIP coordinators held at Bangkok during September 29-20, 2017, in which, NFI-CC and WWF-USA representatives besides all coordinators from other Asian

countries participated. The meeting was chaired by Dr. Abdul Ghafar of FIP in charge of NFI CC. Subsequently, a meeting was arranged on November 7, 2017 at the Central Marine Fisheries Research Institute HQ in Kochi to discuss the way forward to FIP with the collaboration of CMFRI, Kochi, Dr. Sunil Mohamed, Molluscan Fisheries Division, Dr. Josileen Jose, Principal Scientist, Dr. Vinod Malayilethu of WWF-India, Dr. Ranjit Suseelan of MSC i/c India, Mr. Kishore Kumar, President, Dr. Sanjeeviraj, Coordinator, Dr. Ajitha Kumar and Mr. Mayilvahanan, members of CMPA, Dr. James David attended the meeting.

#### STAKEHOLDERS MEETING



Participants in the meeting



Stakeholders Meet on January 6, 2018 at Mandapam Regional Center of CMFRI

It was decided to convene a stakeholder's meet at Mandapam Regional Center of CMFRI on January 6, 2018. The first meeting was held at CMFRI HQ. The meeting was arranged to discuss the various modalities to have Best Management Practices (BMP) for BSC capture from the natural environment and how to avoid the capturing of juveniles and young crabs, which are more important for the sustainability of the crab population and spawning potentials. It was also discussed to dislodge the berried crabs immediately from the gears without causing much damage to the egg-bearing crabs. Thus, the spawning potential of BSC could be improved. The forum emphasized that the breeding and nursery grounds of the BSC should be studied and suitable action to be taken to reserve those areas with the help of enforcing authorities such as State Fisheries Department, Revenue Officials and with the help of local fishermen.

The meeting was attended by 13 CMPA members, four Scientists from CMFRI, one WWF-India representative, one MSC-India representative, one faculty member from Tamil Nadu Fisheries University, three Officials from Tamil Nadu State Fisheries Department and 17 fishermen from Mandapam, Pamban, Devipattinam, Karangadu and Thondi regions. It was also decided to have the next meeting on March 26, 2018, to formulate a best Fishery Management Plan (FMP).

#### CONCLUSION

The FIP activities are in full swing in collecting data on BSC on the lines envisaged in MSC and it is a continuous programme to study the sustainability of stock, spawning potential and future recruit to the crab fishery, the impact of environment on crab population and the by-catch analysis, etc. This study would certainly help the stakeholders and the industries reliable on BSC and in the larger interest of Indian National Economy.





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# Community interaction programme on sea safety



ETFISH, MS Swaminathan Research Foundation (MSSRF) and Indian Coast Guard have jointly organized an awareness programme on Sea Safety at Mandapam on January 19, 2018. A total of 102 fishermen actively participated in the mass community interaction event. Mr. Sankar Raju, Commandant (JG), ICGS Mandapam, Mr. V. Vijay Commandant (JG), 79 ACV Squadron, Ms. Shirin Chandran, Deputy Commandant, Dr. Divya Bharathi, Surgeon Lieutenant, ICGS Mandapam, Mr. Isaac Jaya Kumar, Deputy Director, Tamilnadu Fisheries Department, Dr. Vinoth S. Ravindran, SCO, NETFISH, Mr. Kevi Kumar, Project Associate, MSSRF, Mr. Salam, Technical Associate, MSSRF, Mr. Gopinath, Assistant Director (Fisheries), Mandapam, Mr. Sadik, Inspector (Fisheries), Mandapam, Mr. Jyoti Basu and Mr. Rajkumar, Sub Inspector, Coastal Security Group (CSG), Mandapam and Mr. Thangavelu, Fisherman Association Leader were the dignitaries present on the occasion.

Officials from the Coast Guard explained in detail about 'Distress alert and obtaining Coast Guard Assistance at sea,' Importance of Automated Information System (AIS) in fishing vessels,' Issues in using Chinese VHF sets onboard,' Sea safety equipments needed onboard' and 'other security measures,' etc. Demonstration on proper usage of various sea safety equipments was also done in the programme. The fishermen were also briefed upon the importance of keeping the coastline as well

▶ Dr. Vinoth Ravindran, SCO, NETFISH delivering his talk



Demonstration on use of sea safety equipments

as fishing harbours clean by means of proper disposal and sanitation system and they urged to take initiative towards protection and preservation of marine species. Dr. Vinoth S. Ravindran deliberated upon various fishing practices which are leading to depletion of fishing stock

practices which are leading to depletion of fishing stock and about healthy/safe fishing practices. Further, he explained harmful effect of bottom trawling which is leading to extinction of flora and fauna from the sea bed, including endangered species. Mr. Kevi Kumar and Mr. Salam, from MSSRF briefed about the functioning of the PAN India Fisher Friend Mobile Application (FFMA), which is a single window solution for addressing the holistic shore-to-shore needs of the fishing community.

A lecture along with demonstration on Cardiopulmonary



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A view of the programme

resuscitation (CPR) lifesaving technique was given by the station medical team during the programme. A video on Cardiopulmonary resuscitation procedure was also shown to the fishermen for better understanding. Fishermen were encouraged and given an opportunity to carry out the CPR procedure in presence of medical officer, ICGS, Mandapam. Pamphlets emphasizing the checks that fishermen need to carryout prior venturing into the sea, while at sea and post fishing, were distributed to the fishermen on completion of the programme.





# **'Suchitwa Sagaram'** project for eradication of plastic from sea

#### JOICE V. THOMAS, N. R. SANGEETHA AND V. V. AFSAL NETFISH-MPEDA

ETFISH, the extension wing of MPEDA has initiated a project entitled 'Suchitwa Sagaram' for the eradication of plastic wastes from the sea, at Sakthikulangara and Neendakara Fisheries harbours in Kerala in association with Boat Operators Association Kollam. This initiation has come up from the understanding that a large amount of plastic wastes have been accumulated at sea mainly by land runoff through rivers and by other human activities. NETFISH, as part of its extension programmes among fisherfolk, has been imparting awareness about the ill effects of plastic dumping in the sea. Interactions made in this regard with fishermen also provided vital information that plastic wastes are the real menace in sea bottom mainly up to 50-meter depth and it could create a lot of problems during fishing by way of entrapping in fishing nets and entangling with propellers of fishing vessels, etc.



Minister of Fisheries of Kerala, Mrs. J. Mercykutty Amma launching the bag for collecting wastes from sea

As an initiation to remove these plastic wastes from the sea, NETFISH joined hands with Boat Operators Association of Kollam district and decided to start a pilot project on eradication of plastic wastes from the sea, by establishing a plastic shredding unit at Neendakara fishing harbor at Kollam in Kerala. Realizing the importance of the project, other departments such as Department of Fisheries, Harbour Engineering Department, Suchitwa Mission Kerala, Clean Kerala Company and SAF too joined



to this endeavor turning it as a big programme of this kind in the country.



Inauguration of the project by receiving the plastic waste containing bags from the fishers

#### **THE BEGINNING**

NETFISH collected basic information from fisherfolk about the quantity of plastic wastes gathered to the fishing net during bottom trawling. A project proposal was developed by NETFISH which was supported by Boat Operators Association. This project proposal was then discussed with officials of Kerala Suchitwa Mission and sought the financial and technical help for setting up a plastic shredding machine at Sakthikulangara Fishing harbour. As decided, Boat operators made the announcement of the project 'Suchitwa Sagaram' in their 43<sup>rd</sup> Annual body Meeting held on July 22, 2017, at Sakthikulangara. Mrs. J. Mercykutty Amma, Minister for Fisheries was the chief guest of the programme.

A sample bag for collecting plastic wastes by fishermen in sea prepared by NETFISH was also presented in the programme. While discussing with the Minister for assistance to this programme, they immediately took a decision to support this programme by the Department of Fisheries and took a lead role in joining other departments to this project which ultimately made this a big programme. On August 5, 2017, the Minister inaugurated the project by receiving the wastes collected during fishing by boats, in the bags supplied by NETFISH.

The Harbour Engineering Department allocated a place in the Neendakara harbour for operating a unit managed by the Suchitwa Mission for segregation of the collected waste for shredding and recycling. Funding from various departments was flown to this project and the official inauguration of the shredding unit was conducted on November 20, 2017, at Neendakara Fisheries harbour.

#### AGENCIES INVOLVED IN THE PROGRAMME

Along with NETFISH and Boat Operators Association Kollam, the initial partners of this project, various departments listed below were also joined and the role and duties of the partners of this programme are given in the table below (Table 1).

SI. No.	Department /Agencies	Role in the Suchitwa Sagaram project
1	Suchitwa Mission, Kerala	Financial support for the establishment of plastic shredding unit at Neendakara fisheries harbour and training to members of SAF
2	Clean Kerala Company	Technical support before and after the establishment of the shredding unit
3	Harbour Engineering Department (HED)	Providing area and electrical connection for installation of Plastic shredding unit at Neendakara fisheries harbour
4	Society for Assistance to Fisherwomen (SAF), Department of Fisheries, Kerala	Running of the shredding unit including manpower, salary to the workers, electricity charges, etc.
5	Boat Operators Association, Kollam District	a. Overall monitoring and running of the project b. Bringing and collection of plastic from sea c. Deployment of sufficient manpower to look after the programme
6	NETFISH-MPEDA	Supply of eco-friendly bags for waste collection, awareness stickers to fishing boats & conducting awareness training for fishers

#### **RUNNING OF THE PROJECT**

This project was run by Department of Fisheries by engaging lady workers from Society for Assistance for Fisherwomen (SAF). A total of 30 workers were involved in this project for collecting the bags from fishing vessels, sorting/segregation of plastic wastes, washing, drying and shredding (see Figures).

Various collection centers have been started in and around the harbour to collect the bags reached the harbour. Besides, other Panchayaths in the coastal belt were also been asked to join to this endeavor by supplying plastic wastes so that the entire capacity of the machine is fulfilled. Shredding unit is controlled by HED by engaging one coordinator at the site. Adequate training programmes were given to the workers on handling of wastes, sorting and shredding by Department of Fisheries and Clean Kerala Mission.

NETFISH provided 2000 eco-friendly sacks for this programme which were supplied at a rate of 2 numbers each to every fishing vessels, to collect the plastic material that comes across the sea while fishing. Around 30-40 bags each weighing about 40-50 kg are landed daily at Sakthikulangara harbour. The machinery components established in this project are given below (Table 2). The shredded plastic will be used for suitable activities including road construction and initially HED will utilize the material in the roadworks they undertake.

SI.No.	ltem	Purpose
1	Shredding machine of capacity 1 ton/day	To shred the plastic wastes
2	Sharpening machine	To sharpen the blade of the shredding machine
3	Hydraulic Bailing machine	To keep the plastic bottles separately from the plastic wastes collected. This will be given to other parties for recycling.





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- 1. Receiving waste containing bags from boats. 2. Workers carrying the bags in trolleys to segregating area.
- 3. Segregation of wastes 4. Washing the plastic wastes. 5. Cleaned and dried wastes brought at shredding unit.
- 6. Loading the plastic wastes into the shredding machine. 7. Shredded plastic product.
- 8. Stored in sacks for further use.

#### **FUTURE EXPANSION**

This project is expected to be expanded by introducing Effluent Treatment Plant, washing and drying machine, tube-well, overhead tank and sump, non-plastic waste digester, etc. for the smooth running of the programme. As decided, this project is also to be extended to the other coastal Panchayaths and facilities are being made to collect plastic wastes from land in order to meet the capacity of the shredding machine. Meetings were conducted to initiate the steps to include other regions to this project and training programmes have also been conducted in this regard. While expanding this programme, plastic wastes from all nearby coastal Panchayaths will be collected for this unit. This project will surely be a grant success as the first plastic eradication unit to clean the sea from plastic.



Official inauguration of the plastic shredding unit at Neendakara harbour by Dr. T. M. Thomas Issac, Finance Minister of Kerala



# **Upgraded Quality Control Laboratory** of MPEDA in Bhubaneswar to boost exports



Mr. Kalikesh Narayan Singh Deo, Hon'ble MP and Authority Member of MPEDA inaugurates the dedication of QC Lab, Bhubaneswar in presence of Dr. A. Jayathilak IAS, Chairman, MPEDA and other dignitaries

Seafood exports from Odisha have noticed a steady increase over the years even after encountering several teething problems. Introduction of *L. vannamei* during 2011 has accelerated growth of shrimp production and export in Odisha. Production of antibiotic-free quality shrimp is a concern at this point of time and MPEDA has taken a timely step for strengthening of its QC lab at Bhubaneswar by adding one more tandem mass spectrometry coupled to liquid chromatography (LC/MS/MS) machine. The lab has got NABL accreditation and EIC approval in the meantime for analysis of two required parameters i.e. CAP and NF and is ready for receiving commercial samples.

In context of the above, a programme on dedicating the MPEDA QC Lab, Bhubaneswar for the benefit of the industry and a Buyer-Seller Meet was organized on February 19, 2018 at Bhubaneswar for providing a platform for the exporters, farmers including aqua society farmers, hatchery operators, officials from concerned depts., etc. to interact on the current issues and come out with suitable solutions for further progress in scaling up of seafood exports in the State by inviting appropriate dignitaries.

The programme commenced with the dedication of the upgraded MPEDA Quality Contorl Lab by Dr. A. Jayathilak IAS, Chairman, MPEDA in the presence of dignitaries and guests. In his inaugural address, the Chairman said the country has poised to cross six billion dollars worth of seafood exports for the first time and this had been possible because both farmers and exporters have paid a lot of attention to quality. There is a sustained demand from the industry to have a laboratory with most modern equipment to identify antibiotic residues. The lab is the fifth of this kind in the country and is developing facilities for validation of parameters other than Chloramphenicol and Nitrofuran, presently being tested for the samples submitted by farmers, processors and exporters as part of their quality assurance for residue-free raw material for processing and exporting.

Mr. Gagan Kumar Dhal IAS, Agriculture Production Commissioner, Govt. of Odisha said the long-standing demand of the seafood exporters of Odisha is fulfilled by the establishment of such sophisticated laboratory by MPEDA.

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A view of the participants

Mr. L. N. Gupta, Addl. Chief Secretary, MSME, Odisha thanked MPEDA for setting up of the Quality Control Lab for the timely benefit of exporters. He said the state had recorded 20 fold growth in exports and was recognized as the Champion State of export by the Ministry of Commerce and Industry during 2016-17. The export policy would facilitate to increase the total exports from the state to the tune of Rs. 1 lakh crore.

Mr. Kalikesh Narayan Singh Deo, MP and Authority member of MPEDA noted that to increase the production of export quality such a world-class sophisticated Lab was need of the hour.



Dr. A. Jayathilak IAS, Chairman, MPEDA dedicating the upgraded MPEDA Quality Control lab in Bhuvaneswar

Mr. B. K. Sahoo, Authority Member, MPEDA, Mr. V. Padmanabham, National President, SEAI, Mr. Tara Ranjan Patnaik, National Vice President, SEAI, Dr. Kamlesh Mishra, President, SEAI (Odisha region), Mr. Pratap Ranjan Rout, Joint Director of fisheries, representing Secretary, Fisheries and ARD, Govt. of Odisha, Dr. J. K. Sundaray, Director, CIFA, Bhubaneswar, Mr. S.K. Jena, OAS, Director, Export Promotion and Marketing, Odisha, Mr. B. Sreekumar, Secretary, MPEDA, Dr. M.K. Ram Mohan, Joint Director (Marketing), MPEDA, Mr. K.V. Premdev, Deputy Director (MP), MPEDA, Mr. K. Sanmukha Rao, CEO, NaCSA, Kakinada, Ms. K. Mishra, Assistant Director, EIA, Bhubaneswar attended the function organized in the conference hall of Utkal Chamber of Commerce and Industry, Nayapalli, Bhubaneswar located opposite to the QC Lab.

Officials from Regional Division, Bhubaneswar, Sub Regional Division, Bhubaneswar, Sub Regional Division, Balasore, exporters, lead aquafarmers, farmer representatives of Aqua Farmers Welfare Societies from various coastal districts, hatchery operators/owners, officials from State Fisheries Department, EP & M, etc. also attended the programme. Mr. B. Sreekumar, Secretary, MPEDA welcomed all the dignitaries and participants. He said that QC lab at Bhubaneswar is accredited under ISO/IEC17025 standards by the NABL and this laboratory is approved by the EIC of India and also ISO 9001: 2008 certified.

Mr. Tara Ranjan Patnaik, National Vice President, SEAI

and CMD of M/s Falcon Marine Exports, Bhubaneswar requested all farmers need to have CAA registration and MPEDA enrolment to fulfill the legal requirements.

Among the dignitaries, Mr. V. Padmanabham, National President, SEAI, Dr. Kamlesh Mishra, President, SEAI (Odisha region), Mr. B. K. Sahoo, Authority Member of MPEDA and Mr. Pratap Ranjan Rout, Joint Director of Fisheries, Govt. of Odisha spoke at the occasion. Lab in-charge briefed the guests on the different components of the lab and functions of the instruments.

Dr. M.K. Ram Mohan, Joint Director (Marketing), MPEDA proposed the vote of thanks.

#### **BUYER-SELLER MEET**

Mr. B. Sreekumar, Secretary MPEDA welcomed the participants to Buyer-Seller Meet. He explained the purpose of arranging such a meet to provide a platform for both the exporters and farmers to have one-to-one dialogue and contract. This would enable both the buyers to procure assured the supply of quality material from aqua clusters maintaining BMPs and the farmers as sellers for a right and assured price for their produce. Mr. U. C. Mohapatra, Deputy Director, Regional Division, MPEDA, Bhubaneswar co-ordinated the programme. The farmers have raised some doubts on price fluctuation, quality of inputs and raw material, supply of ice, etc. Mr. Ajaya Dash, an experienced exporter and Dr. Kamalesh Mishra, President, SEAI (O) among other exporters interacted and explained to the queries. It was generally expressed to insist on PCR tested quality seed from an approved hatchery, a good feed, good management practice which would prevent the occurrence of disease and thereby avoid the use of medicine and chemicals for the production of quality and antibiotic free shrimps. Mr. Tambada N. Vishnu, Assistant Director (AE), MPEDA, Bhubaneswar proposed the vote of thanks.



Mr. L N Gupta, IAS, Additional Chief Secretary, MSME Dept, Odisha felicitating during the function on dedication of QC Lab, Bhubaneswar





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# Training on on-board handling of sashimi grade tuna



▲ NETFISH State Coordinator demonstrating the degutting procedure

'Sashimi', meaning raw fish, is a traditional Japanese dish made from thin slices of premium quality raw fish. Tunas, having red meat, are particularly considered as the most popular sashimi fish. Only those fish that are handled and packed fresh are suitable for exporting to sashimi markets and such genuine premium quality fish will fetch a good price in the export market. Awareness cum hands on training to fishers, especially the fishing crew members who are involved in tuna long lining, on the on-board handling methods and processing of tuna for sashimi is one of the focus areas of NETFISH.

On January 18 and January 30, 2018, NETFISH along with its member NGO, DFYWA, organized two training programmes on 'On-board handling of Tuna fish' at Pudimadaka, Visakhapatnam, which were proved beneficial for 24 active fishermen from the region. Mr. Hanumantha Rao, State Coordinator, NETFISH explained to the trainees about the production of sashimi grade tuna through proper hygienic handling methods followed onboard. The essential tools such as gloves, hammer, spike, monofilament nylon or stainless steel wire, drop blood knife, sharp knife, brush, coring tool, etc. were familiarized to the trainees. Then hands on training on killing, spiking, bleeding, de-gilling, degutting, chilling in slurry ice, preservation and storage was given to the fishers during the programme.



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# MPEDA launches GPS based database of export oriented Aquaculture farms



Launching of unique GPS-based database of export-oriented aquaculture farms at Partnership Summit 2018 at Visakhapatnam

PEDA has launched a unique initiative to develop GPS-based database of export-oriented aquaculture farms for their traceability as well as to secure interests of end-consumer. This unique system would ensure that shrimp and other exportable varieties of fish are free from any trace of banned and unwanted substances.

As per the scheme, MPEDA shall enrol all the farms engaged in production of shrimp, shellfish and other exportable varieties of fish by providing the farmers cards carrying a Unique Farm Identification Number and Quick Response Code containing basic information about the farms.

On February 25, 2018, Mr. Suresh Prabhu, Union Commerce



A view of the audience

and Industry Minister, distributed the cards to enrolled aquaculture farmers, in the presence of Mr. N. Chandrababu Naidu, Chief Minister of Andhra Pradesh, Mr. K. Hari Babu, Member of Parliament, AP and other dignitaries.



Dr. A. Jayathilak IAS, Chairman, MPEDA with farmers and MPEDA/NaCSA officials

Dr. A. Jayathilak IAS, Chairman, MPEDA said the enrolment shall help identify each farm/hatchery unit for extending the assistance schemes as well as for their traceability. The produce from the enrolled units can be traced back from farm to end-consumer in case of detection of unwanted or unauthorised substances in the produce.

Pre-harvest test or PHT to screen banned antibiotics such



as Chloramphenicol and Nitrofuran will be linked with the

Unique ID. PHT certificate is compulsory for the exports of

aquaculture shrimp to the European Unions.

Distribution of the cards to enrolled aquaculture farmers

Dr. Jayathilak also noted that such a measure would go a long way in addressing concerns of U.S., Japan, and the EU for stringent quality controls over exports of seafood and check traces of banned antibiotics in consignments. The new system would capture traceability information at all levels of the value chain and electronically coding the key information for display in the cartons/packs by way of QR code or bar code. It will enable the endconsumer to access the information up to the farm/hatchery level.

MPEDA has already collected GPS data for 65,595 farms covering 148,321 hectares under shrimp culture. Enrolment has been completed for 54,165 farms out of 100,000 farms covering 195,994 hectares.

The validity of the card or enrolment will be for five years or the valid lease period, whichever is less. The cards will be printed in English and a relevant vernacular language.





# Training Programme on 'Eco Sustainable and Development Scopes in Aquaculture'



🖊 Mr. P. Brahmeswar Rao, Assistant Director, Regional Division, Vijayawada speaking at the training programme

Regional Division of MPEDA in Vijayawada organized a 3-day general training programme 'Eco Sustainable and Development Scopes in Aquaculture' at Kammanamolu village, Nagayalanka Mandal, Krishna District. The main objective of the training during January 23-25, 2018 was to educate the farmers on eco sustainable and development scopes in aquaculture with special emphasis on diversification in aquaculture species. 20 participants including five female participants attended the programme.

The programme was inaugurated by Mr. Kokkiligadda Venkatadri, Panchayath President, Kammanamolu village. During the training programme, Mr. B. Narasimha Rao, Assistant Director, Mr. P. Brahmeswar Rao, Assistant Director, Regional Division, Vijayawada, Mr. V. Ratna Prakash, Project Assistant (Fisheries), KVK, Kanuru, Mr. P. Suresh, Assistant Director of Fisheries, Avanigadda, Mr. J. Venkata Ramana, Regional Coordinator, NaCSA, Mr. G. Sreenivasulu, Field Supervisor, Regional Division, Vijayawada took classes on various topics such as pond preparation, water and soil quality management, selection of quality seed, feed management, use of probiotics in shrimp farming, bio security measures, diversification in aquaculture and its potentiality in Andhra Pradesh, abuse of antibiotics in shrimp farming, harvest and post-harvest quality management and significance of pre-harvest test and health care. On the last day, doubts shared by participants were clarified by the faculty members.

Mr. Kokkiligadda Venkatadri delivered the valedictory speech and he appreciated MPEDA to conduct such a training programme for the benefit of farmers and requested MPEDA to conduct more and more programmes in future. Certificates and stipend were distributed to the participants in the presence of Panchayat President and ADF. Mr. G. Sreenivasulu proposed a vote of thanks.



# Farmers meet on present status of shrimp farming in Nellore



Mr. Archiman Lahiri, Deputy Director, Regional Division, Vijayawada during the technical session

PEDA Satellite Centre, Nellore conducted a farmers' meet on 'Present status of shrimp farming in Nellore' on January 24, 2018 at Sree Chamundeswari Devi Kalyana Mandapam, Gangapattinam Village in Nellore District.

The main theme for the meet was to update the latest technological advancement in the field of shrimp farming and also to discuss the issues and need for diversification to meet the growing demand of fish and fishery products both for domestic consumption as well as for export. The programme was attended by 125 participants mainly from Gangapattinam Village.

Mr. Archiman Lahiri, Deputy Director, Regional Division,



A view of the gathering during the farmers meet

Vijayawada welcomed the dignitaries and participants. During his welcome address, he emphasized the dedicated efforts taken by MPEDA to produce the best guality shrimp from the country. He also mentioned that the EU and the US had now very stringent monitoring of aquaculture products and the farmers should be very careful while using any unknown inputs during hatchery and farming operation.

The farmers meet was inaugurated by Mr. P. Hanumantha Rao, President, Sree Chamundeswari Devi Aguafarmers Club, Gangapattinam and a veteran of shrimp farming. In his address, he emphasized the responsibility of aqua labs to guide the farmers to go for a sustainable farming operation. He emphasized that some sort of regulation and financial support from the government should be drawn so that only qualified lab technicians are operating the lab and providing reliable test reports.

Mr. P. Shabeer Khan, Secretary, AP State Prawn Farmers Association, Nellore, in his felicitation address appreciated the steps taken by MPEDA to create awareness among the farmers to produce antibiotic-free shrimp so as to take India as a topper in quality shrimp production. He mentioned that the price oscillations are seriously affecting the farmers especially the small-scale farmers and it is to be sorted out by a series of buyer-seller interactions and open discussions.



The Authority member and Chief guest Mr. S. Suresh Reddy was present during the technical session. During his felicitation address, he pointed out that all the hatcheries should be more alert to maintain the bio-security measures and to follow Standard Operating Procedures (SOP) so as to produce and supply only quality shrimp seed to the aqua farmers. He added that the aqua farmers should be more observant on spurious aquaculture inputs in the market which may later cause serious harm to our shrimp export business. all farmers should come forward to enroll their farm with MPEDA (if not done so far) so as to support the big challenge of producing antibiotic/chemical free shrimps for export. He also highlighted that farmers should be very vigilant in the use of aquaculture inputs as the major importing countries are increased their sampling percentage. He also invited the wholehearted support and intervention of aqua-farmers and hatchery association to bring India as a topper in good quality shrimp production and export.



Mr. P. Brahmeswara Rao, Assistant Director, Regional Division, Vijayawada presented the topic: 'Major Challenges in Shrimp Export from India.' He indicated that the rejections from importing countries are mainly due to potential seafood safety hazards or antibiotics issues. But farmers should also careful on temporary suspension/ ban of Indian shrimps by the importing countries and in this context there should not be any compromise on sanitary and phytosanitary (SPS) measures in trade perspective where no pests or disease-causing agent which may cause human health concern is entering into the importing country.

*Mr. P. Hanumantha Rao, President, Sree Chamundeswari Devi* Aquafarmers club, Gangapattinam inaugurating the farmers meet

Dr. P. Hari Babu, Professor, Associate Dean, College of Fisheries, Muthukur, Nellore lead the talk during the technical session. He had given a detailed interactive class on Disease Management and Bio-security in Aquaculture where all the technical and management aspects for a successful crop were discussed. Mr. Archiman Lahiri, in his presentation emphasized the importance of farm enrollment and traceability of cultured shrimp. He also mentioned that



 $\bigwedge$  addressing the gathering

Hence for a sustainable shrimp export, we should always opt for a disease-free seed to be reared in a biosecure environment without using any spurious chemical or antibiotics and should be processed and exported by following Standard Operating Procedures and as per the standards of the importing country.

Mr. P. Sreenivasa Rao, Assistant Project Manager, RGCA-MPEDA during his presentation explained in detail regarding the steps taken by RGCA for introducing several exportoriented aquaculture species for diversification. He also emphasized the scope and potential of crab farming as *Scylla serrata* as a candidate species.

The last session was handled by Mr. T. Nanda Kishore, Regional coordinator, NaCSA. He emphasized the need for society formation and their prospects for sustainable shrimp farming. He also mentioned on various schemes and supports rendered by NaCSA through their field managers. The farmers meet was concluded by the vote of thanks by Dr. K. Ganesh, Assistant Director, MPEDA Satellite Centre, Nellore.



# Training on eco-friendly, sustainable aquaculture organized at Chikodi in Belgaum



evelopment and operations of Aquaculture in Belgaum district of Karnataka is very infant phase except a few have been made attempted on a smaller scale.

Belgaum district is bestowed with three major riverine system along with agricultural crops such as sugarcane and millet. As cultivation of sugarcane is one of the major cash crops by many more period, the soil becomes acidity and low saline in nature by usage of inorganic fertilizers and organic chemicals such as pesticides and insecticides.

As such these agricultural land cannot be utilized for raising any other agricultural crop except aquaculture. In view of the above, a three-day training program on 'Eco- friendly and sustainable aquaculture' was organized at Chikodi in Belgaum District in Karnataka during January 3 - 5, 2018.

A total of 19 farmers nominated by the Assistant Director of Fisheries in Chikodi attended the training programme.

Mr. Vijayakumar C. Yaragal, Deputy Director engaged a class on site selection and construction of ponds. He emphasized the importance of reservoirs system in *L. vannamei* shrimp Mr. Vijayakumar C Yaragal, Deputy Director, MPEDA addressing the participants

aquaculture, HCCAP to be followed and value added marine products.

Mr.Sanjay Arkare, Assistant Director of Fisheries, Chikodi detailed the present status and potential of fisheries operations in Chikodi, Rajbag, Athani Taluk of Belgaum district. Mr. G. Ramar, Junior Technical officer of this division discussed pond preparation, water quality, usage of various probiotics in shrimp aquaculture, seed stocking, feed and feed management and harvesting.

A visit was arranged to a fish farm located 25 km away from Chikodi. The farm was stocked with Pangasius where trainees were briefed on farm operation of Indian major carp and exotic species in India. A video film was projected on the various cultivable species such as sea bass, mangrove mud crab and tilapia.

Mr. G. T. Nayak, Deputy Director of Fisheries and Mr. Vasanth Hedge, Senior Assistant Director of Fisheries, Belgaum attended the valedictory function. The training program was concluded by the distribution of training participation certificates by the Chief guests.



# Training on "Eco-Friendly Shrimp Farming" for farmers in Baad Village in Karwar



A view of trainees during field visit

3 - day training programme was organized in Dr. Ambedkar Bhavan hall at Baad village in Karwar, Uttarakannada in Karnataka. The training as per the request from the Karwar City Municipal Council was attended by 20 participants from Baad, Nandangadda, Karwar of Uttar kannada district

Mr. Devanand Kanekar, President of SC/ST community, Karwar inaugurated the programme. Site selection, pond design, construction, biological aspects, seed stocking to harvesting, biosecurity & best management practices in shrimp farming, diversification - crab culture, sea bass culture, tilapia culture, economics & financial schemes were



Distribution of certificate and stipend to participants

discussed during the training. Mr. S. M. Shirodkar, Jr. Tech Officer, Mr. Vijayakumar Yaligar, Deputy Director, MPEDA and Mr. Vekatraman Hegde, Deputy Director, Mr. Sripad Kulkarni, AFDO from State fishery department engaged the classes.

A field visit was organized on January 18 for the trainees to the shrimp farms in Kanasgiri, Kadwad, Madibag villages for observing practical methods & interaction with the farm operators/ technicians.

Mrs. Leelabai Thanekar Vice-President, City Municipal Council, Karwar was the Chief Guest at the valedictory function on January 19<sup>th</sup>. She appreciated MPEDA's effort to conduct such a training programme for SC /ST at their doorstep. She advised the trainees to come forward to form society or club to take up aquaculture. Mr. Vijayakumar Yaragal, Deputy Director, MPEDA also assured all support from MPEDA.

Mr. Vithal Lanjekar and Mrs. Roopa Hulsawr thanked MPEDA on behalf of the farmers and said that the training helped them learn new techniques/developments in aquaculture. Certificates and stipend were distributed to trainees. The 3-day training programme came to an end with vote of thanks proposed by Mr. S. M. Shirodkar, Junior Technical Officer MPEDA.



# Farmers of Athani in Belgavi gets equipped for sustainable aquaculture



thani in Belgavi district of Karnataka is known for unfertile, low saline land where ample water source are available. Keeping this in view, Dept of fisheries in Chikodi has requested for a training programme for the interested farmers.

Based on the request, MPEDA Sub Regional Division, Karwar has conducted a training programme on eco-friendly and sustainable aquaculture for farmers of Athani.



A view of Trainees

The three-day training programme was conducted at MICE computer institute Hall from February 15 to 17.

Mr. G. Ramar and Mr. S. M. Shirodkar, Junior Technical officers of MPEDA & State fishery officials of Chikodi engaged classes on seed selection, stocking, water quality, feed management, harvesting of shrimps, aquaculture

carp culture / poly culture in reservoir, etc. Video film was projected on the various cultivable species such as seabass, mangrove mud crab and tilapia.

diversification such as tilapia culture, seabas farming,



Mr. Sanjay Arkeri ,AFDO, Fisheries Department, Chikodi distributes certificate and stipend to trainees

A visit was arranged to a fish farm & reservoir where trainees were briefed on farm operation of Indian major carp and exotic species in India.

Mr. Sanjay Arkeri, Asst. Director of Fisheries Chikodi was the chief guest. Mr. Suresh Pandave and other participants have expressed their gratitude to the MPEDA for conducting such training program as it is enriched their knowledge on Aquaculture. Certificates & stipends were distributed to all the 17 trainees. Mr. S. M. Shirodkar, Junior Technical Officer, MPEDA proposed a vote of thanks.



# Training imparted on BMPs in shrimp culture, species diversification in Aquaculture



Which is a species of the training and a species of the training and species of the training programme was conducted by MPEDA Regional Division, Bhubaneswar. "Adoption of BMP's in Aquaculture and species Diversification in Aquaculture" was the theme of the training at Red Cross Society Hall, Kharinasi village, Kendrapara District on February 6 to 8, 2018.



🔥 Mr. S. Durga Rao, FS taking class and Farmers view

Mr. U. C. Mohapatra, Deputy Director inaugurated the programme. He advised the trainees to learn advanced technology and produce better aquaculture product for export.

The trainees were introduced to Aquaculture, types of farming system, latest developments and trends, schemes and services of MPEDA as well as biological aspects of tiger shrimp, *L.vannamei*, antibiotics issues, etc. on the first day.

In the following day, Mr. Naresh Tambada, Asst. Director took classes on site selection, construction of shrimp ponds, enrolment of Aquaculture farms with MPEDA and economics of shrimp farming, etc.

Mr. S. Durga Rao, Field supervisor has explained pond preparation, water quality management and soil management, feed & feeding management, seed selection through PCR screened stress test, acclimatization, stocking, disease control methods, bio-security measures, etc. Trainees were made aware of diversification in aquaculture viz, mud crab culture, tilapia culture. The farmers were provided with a book on "Better Management Practices for Sustainable Aquaculture." Leaflets on adverse effects of banned antibiotics in aquaculture, pond data record books, etc. were also distributed among them.

Mr. Shitanath Behera, Addl. Asst Fisheries Officer from Dept. of Fisheries, Kendrapara was the chief guest at the valedictory session. He briefed on the State Govt. schemes for aquaculture, registration with CAA, etc. Certificates & stipend were distributed to the trainees.

Mr. Narayan Haldar, lead farmer thanked MPEDA for organizing the programme. 20 SC/ST shrimp farmers participated in the training programme. Discussion was also arranged for trainees to interact with MPEDA/ State Fisheries officials to summaries technical aspects taught during three days.

Mr. Suresh Mohanty, Lascar, Regional Division, Bhubaneswar proposed a vote of thanks.



# **Over-fishing to hit** capture fisheries globally: FAO

Capture fisheries from the sea and inland waters are estimated to stay flat or decline globally due to overfishing, says a report published by the Food and Agriculture Organization (FAO) of the United Nations. The 2016 edition of 'The State of World Fisheries and Aquaculture' by FAO in February reports that capture fishery production is projected to increase by just 1% through the year 2025 as most of the sea are fully fished and therefore have no potential for increasing production. Declining catch and higher cost of fishing due to increase in input cost are likely to push millions of fisherfolk into misery in countries like India. Fisheries and aquaculture remain important sources of food, nutrition, income and livelihood's for hundreds of millions of people around the world.

World per capita fish supply reached a new record high of 20 kg in 2014, thanks to vigorous growth in aquaculture, which now provides half of all fish for human consumption, and to a slight improvement in the state of certain fish stocks due to improved fisheries management, the report

adds. Global total capture fishery production in 2014 was 93.4 million ton, of which 81.5 million ton came from marine waters and 11.9 million ton from inland waters.

The total number of fishing vessels in the world in 2014 is estimated at about 4.6 million, very close to the figure for 2012. The fleet in Asia was the largest, consisting of 3.5 million vessels and accounting for 75% of the global fleet. FAO reports that starting from 1950, global catches without anchoveta rose until 1988 when they exceeded 78 million ton. Subsequently, catches leveled off, albeit with some fluctuations, also perhaps reflecting a marked reduction in distant-water fishing activities following the dissolution of the Soviet Union.

From 2003 to 2009, total catches remained exceptionally stable, with interannual variations never exceeding 1% in absolute amount. Finally, from 2010 there was slight growth every year until a new maximum was reached in 2014, with global catches excluding anchoveta at 78.4 million ton.



# An app for fishermen to catch customers directly

Equipping fishermen to sell their catch online without depending middlemen, the Central Marine Fisheries Research Institute has come out with a multi vendor e-commerce website and a mobile app.

The app "marinefishsales" was developed under the National Innovations on Climate Resilient Agriculture (NICRA) project of the CMFRI aimed at improving the income of the coastal community.

"Initially, the services will be available in Ernakulam district and later extended to the other parts in accordance with the success of the initiative," said Mr. P. U. Zacharia, Principal Investigator of the NICRA project. The payment is available only on cash-on-delivery mode and the profit could be shared directly among the fishermen and



farmers groups by not allowing middlemen share their profits. The portal is an interface of multi vendors and consumers with CMFRI performing the administrative role between them.

> Fishermen and fish farmers who want to sell their catch and fish online may form SHGs and register with the platform. Various fishermen SHGs can register as vendors based on their products to sale and update their stock availability.

> Trial sales were also conducted after the CMFRI provided training to the fish farmers and fishermen to familiarise with e-commerce website and mobile app, he said.

> Mr. Rojith Girindran, Research Associate of NICRA Project, who developed the website and mobile app, said each registered fish vendors would be provided with unique login credentials through which they could update their product details. The online sales through the web portal and mobile app will be operational within two weeks.





# CMFRI to train 5,000 fishermen in open sea cage farming

Setting a stage for the Blue Revolution, the Central Marine Fisheries Research Institute (CMFRI) has kick-started a major project for boosting the open sea cage farming in Indian waters.

CMFRI started the first phase of the project to train the fishermen in all the maritime States on open sea cage farming so as to bolster the mariculture activities in the wake of a stagnation experiencing in the capture fishery. The project envisages providing effective training to 5,000 fishermen across the country with a financial support of nearly ₹1 crore from the National Fisheries Development Board.

According to CMFRI Director Mr. A. Gopalakrishnan, the cage fish farming technology has proved 70 times more productive than the normal methods of the fish farming in ponds. Conventional pond culture of marine fishes produce an average 0.5 kg/m3 (5000 kg/ha), whereas cage farming offers a production of 35 kg/m3.

Referring to the scarcity of the fish seed required for boosting the cage fish farming, he said CMFRI has already

commenced the works to establish a brood bank of high value marine fishes suitable to the cage farming with a financial support of ₹9 crore from the NFDB.

Deputy Director of Fisheries Mr. S. Mahesh, who inaugurated the training programme, said the State Fisheries Department had formulated plans to extend the cage fish farming in Kerala sea waters along with the technical support of the CMFRI.

CMFRI's mariculture division is coordinating the training programme. Imelda Joseph, head of the division said the country should turn to mariculture such as open sea cage farming to meet the growing demand for fish. It is presumed that by 2030, fish consumption in developing and developed countries is expected to increase by 57 percent and 4 percent respectively.

The species such as cobia, seabass, groupers, snappers, mullet, lobster and pearl spot are highly suitable for cage farming in sea waters. It is expected that the sea cage farming will get a major boost once the National Mariculture Policy is notified and comes in force in the country in near future, she added.

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# Tilapia attracts fish farmers in Odisha



Genetically improved farmed Tilapia (GIFT) fish variety is gaining popularity among fish farmers in the state. The freshwater fish species, which is rich in protein, ensures good returns as a result of which more farmers are now attracted towards its farming.

Stat government's fisheries department in technical collaboration with WorldFish organization has started the programme to promote Tilapia fish farming in Odisha. The project has been started with an aim to give a boost to fish production and increase farmers' income and officials have claimed the efforts are yielding desired results.

Almost five months back, the project was started on a pilot basis in Nischintakoili in Cuttack district. Two farmers in Ishani Berhampur village in Nischintakoili had taken up cultivation of Tilapia fish variety in ponds spread over 80 decimel of land.

"The farmers were provided fishlings weighing 0.14gram each for farming and in five months duration each fish has grown to 850 grams. Both the farmers have earned bumper profits," said Trilochan Swain, an official of WorldFish. After knowing about the success stories of these two farmers, over 30 farmers in seven districts have taken up Tilapia fish farming. According to officials, the variety of Tilapia is a high yielding, short duration and easy to farm. The species is disease resistant so low risk is involved in its farming.

An acre of pond yields around 3000 kilograms of Tilapia variety. "The total cost of production for farming Tilapia in an acre of pond comes to Rs1.80 lakh while the farmed fish is sold for Rs 3 lakh. The farmer makes a profit of Rs 1.20 lakh per acre. Besides, as the fishes mature in four to five months, farmers can harvest at least two crops per year," said project manager Mr. Arun Padiyar.

The profit earned from Tilapia fish farming is significantly higher than earnings from present varieties of farmed fish. The fish variety has turned a hit among customers also as it nutritious, juicy with a single bone. "We are trying to create awareness about the fish variety among farmers by highlighting its advantages. The lucrative returns will definitely attract more farmers to take up Tilapia farming," said Mr. Padiyar.

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# **Tripartite agreement signed for distribution of fish dryer**



Exchange of MoA for fish dryer distribution to Mushroom Cultivators Self Help Group, Kasaragod

ICAR-Central Institute of Fisheries Technology (ICAR-CIFT), Cochin has signed a Memorandum of Agreement with Krishi Vigyan Kendra (KVK), ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod and Mushroom Cultivators Self Help Group, Kasaragod on February 1, 2018 at ICAR-CIFT to distribute an electrical dryer of 10 kg capacity to Mushroom Cultivators Self Help Group, Kasaragod.

The dryer can be used for the preservation and value addition of fish and fishery products and other agricultural commodities. The agreement was signed in the presence of Dr. R. Chandrababu, Vice Chancellor, Kerala Agricultural University, Thrissur Kerala, Dr. C. N. Ravishankar, Director, ICAR-CIFT, Cochin, Dr. Suseela Mathew, Principal Scientist and Head, Biochemistry and Nutrition Division, ICAR-CIFT, Cochin, Dr. Manoj P. Samuel, Principal Scientist and Head, Engineering Division, ICAR-CIFT, Cochin, Dr. T. S. Manojkumar, Principal Scientist, KVK, ICAR-CPCRI, Kasaragod and Mr. Panduranga, Mushroom Cultivators Self Help Group, Kasaragod.





Trainees with the Director and faculty

# Training on antibiotics residue screening conducted at ICAR-CIFT

Antibiotics residues in food products (Aquaculture, dairy, poultry etc.) are a great concern for importers and consumers due to its adverse effect on human health. Therefore, its regulation, monitoring and screening are very essential for the safety of the consumers. In this

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perspective, a training was organised by Food Safety and Standard Authority of India (FSSAI) along with ICAR-CIFT, Cochin and RIKILT University, The Netherlands at ICAR-CIFT, Cochin during 26 February – 2 March, 2018. A total of 10 participants from ICAR-CIFT, EIA and State

Departments of Kerala were trained on antibiotic residue analysis using microbiological methods. Dr. Mariel Pikkemaat and Mrs, Wilma Driessen were the expert trainers. The training was structured with theory and practical sessions as well as hand-on practices.

The training focused mainly on screening of antibiotic residues by microbial plates technique using specific bacterial strain. The antibiotic groups under consideration were Macrolides and  $\beta$ -lactams (Micrococcus luteus ATCC 9341), Tetracyclines (Bacillus cerecus ATCC 11778), Quinolones Yersinia ruckeri NCIM 13282), Sulfonamides (Bacillus pumilus CN 607) and Aminoglycosides (Bacillus subtilis BGA). The sample matrixes used during the training was chicken (farmed) and fish (wild caught). The course included standards calculation and preparation, spiked sample preparation and results interpretation interalia other routine programmes which was interesting.

The participants were taught about the inoculum preparation, media preparation etc. Performing the assay was a great challenge because occasionally the results were misleading. A slight variation in the pH, inoculum volume, buffer quantity etc. may affect the sensitivity of the test. Sometimes presence of antibiotic in the spike control sample affected the results of the assay and needed to be cross checked.

Food safety regulation for residues on animal products, identification, confirmation and quantification of antibiotics were also discussed in detail during the course. Validation (EU Decision 2002/657) and accreditation were also covered. Theoretical aspects such as quality control, ruggedness testing and other alternative methods and their limitation were discussed. The trainees observed that the programme was very much useful and the knowledge gained will be helpful for the future work.



# Marine natural product to treat thyroid disorders soon

At a time when the healthcare industry is increasingly becoming dependent on marine-derived bio-active compounds for various diseases, the Central Marine Fisheries Research Institute (CMFRI) will soon launch a natural product obtained from the sea to treat thyroid disorder. CMFRI has already developed nutraceutical products for diabetes, arthritis and cholesterol from marine organisms such as seaweeds and green mussel.

At the valedictory function of the three-week long Winter School organised by CMFRI to train young researchers in extracting medicines from marine organisms, Dr. A. Gopalakrishnan, director, CMFRI said the marine nutraceutical product being developed by the institute for thyroid dysfunction is in the final stage of clinical trial. "The product will be commercialised after the successful completion of the clinical experiment", he said.In addition, CMFRI will develop more such natural products including cosmeceuticals from the marine organisms, Dr. Gopalakrishnan added. "CMFRI will seek the possibilities of interaction with the industry to commercialise the natural marine products developed in the laboratories of the Institute," he said.

"High-value bioactive metabolites from the marine

organisms are attracting attention because of the growing demand for new compounds of 'marine natural' origin, having potential applications in pharmaceutical fields. The functional foods, enriched with natural ingredients have been proved to be beneficial for human health", he said. "CMFRI is the pioneering marine research institute in India to work in the frontier area of bioactive molecule discovery from marine organisms as promising therapeutic agents against various diseases. The four nutraceutical products developed by CMFRI in the past garnered a huge demand in the healthcare market," Dr. Gopalakrishnan said.

The 21-day long Winter School was conducted by the Marine Biotechnology Division of the CMFRI to train 23 scientists and teachers on recent advances in bioactive compounds from marine organisms and developing highvalue products for better health management. Eminent scientists and experts from different corners of the world who have expertise in the field of marine natural product chemistry delivered lectures in the area of marine bioactive compounds and conducted practical classes.

Dr. T. K. Srinivasa Gopal, former director of the Central Institute of Fisheries Technology (CIFT) was the chief

guest at the valedictory function of the Winter School. The rich diversity of flora and fauna in the marine and coastal habitats of the Indian subcontinent is still an untapped reservoir of bioactive compounds with valuable pharmaceutical and biomedical use, he said.

"Even as these groups of marine organism are underutilised, the average proportion of bioactive compounds among the new compounds is declining during the last decade. Various medicinal and biomedical products from marine organisms have myriad benefits for human health. Hence, they form attractive options for the food and pharmaceutical industry," he said.Dr. P. Vijayagopal, head of the Marine Biotechnology Division and Dr. Kajal Chakraborty, course director of the Winter School spoke on the occasion.



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