

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL
BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 1063 OF 2024

IN THE MATTER OF

"Pollution control board reels in ghost nets" appearing
in the Times of India dated 04.08.2024

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Respondent No.-3

डा. के. मोहम्मद कोया
Dr. K. MOHAMMED KOYA

Department of Fisheries Development Commissioner (FDC)
Fisheries Development Commissioner (FDC)
(Government of India)
Min. of Fisheries, Animal Husbandry & Dairying
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Through



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Place : New Delhi

Date : 13.03.2025

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BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 1063 OF 2024

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04.08.2024

REPLY BY WAY OF AFFIDAVIT ON BEHALF OF RESPONDENT NO.
3DEPARTMENT OF FISHERIES (GOVERNMENT OF INDIA), THROUGH
ITS SECRETARY, DEPARTMENT OF FISHERIES, MINISTRY OF
FISHERIES

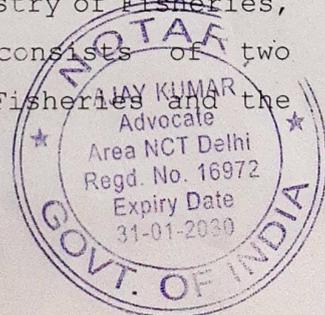
I, Dr. K. Mohammed Koya, S/o. Nallakoya M. K aged about
48 years working as Fisheries Development Commissioner
office at Krishi Bhawan, New Delhi do hereby solemnly
state and affirm as under: -

1. I say that being the Fisheries Development Commissioner officer I am well conversant with the facts surrounding the present Original Application.
2. I say that this Original Application is registered *suo-motu* on the basis of the news item titled "Pollution control board reels in ghost nets" appearing in the Times of India dated 04.08.2024.
3. That the matter relates to the collection and recycling of fishnets which otherwise become "ghost



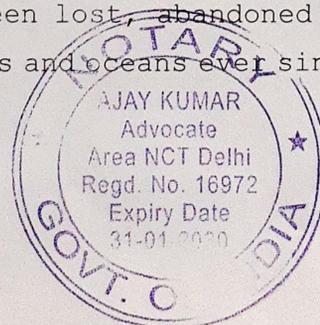
nets". As per the article, these ghost nets are the torn and discarded fishnets that drift underwater, and strangle and kill fish, coral reefs, turtles and other organisms and then they become marine debris.

4. That this Hon'ble Tribunal expresses its concern over violations of the Environment (Protection) Act, 1986, as well as the Coastal Regulation. Zone (CRZ) Notification, 2019, specifically section 2.1.1 of CRZ 1A as the article explains that the HDPE (high-density polyethylene) or nylon fishnets wear out every six months to a year. If torn, the torn bit goes underwater, strangling fish such as anchovies and prawns. This affects fish reproduction and the business of fishermen. Furthermore, marine mammals such as turtles and whales that come up to breathe can get caught in ghost nets. These nets also lead to algal growth if they strangle coral reefs. It also alleges that the bundled-up, torn nets also cause sanitation and health issues, particularly during the monsoon.
5. That the matter taken up on 14.08.2024 by the Hon'ble Tribunal and impleaded the Answering Respondent as Respondent No. 3 and notice has been issued. And Hon'ble Tribunal directed to file response/reply in the form of affidavit.
6. That it is submitted that the Ministry of Fisheries, Animal Husbandry & Dairying consists of two departments: the Department of Fisheries and the



Department of Animal Husbandry & Dairying. The Department of Fisheries was established from the former Department of Animal Husbandry, Dairying & Fisheries, as per the Cabinet Secretariat's Notification No.1/21/21/2018-Cab dated February 5, 2019.

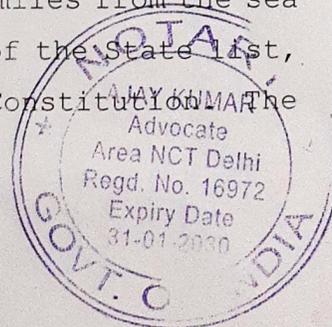
7. That the Department is responsible for matters relating to formulation of policies and schemes pertaining to development of Inland, Marine and Coastal Fisheries and Fishery Institutes including its four subordinate institutions and one autonomous body and one regulatory authority. The Department advises the State Governments /Union Territories (UTs) in formulation of policies and programmes in the field of fisheries.
8. That it is humbly submitted that Abandoned, Lost, or Otherwise Discarded Fishing Gear (ALDFG). is the internationally recognized name for derelict fishing gear (DFG). The United Nations Environment Programme (UNEP) defines ALDFG as the "multitude of nets, lines, traps, and other commercial or recreational fishing equipment that has been lost, abandoned or otherwise discarded in the marine environment". Though accurate data is not available, extrapolated figures suggest that DFG contributes about 10% of the marine debris by volume.
9. That the Fishing gear have been lost, abandoned or otherwise discarded in all seas and oceans ever since



fishing began. The extent and impacts of the problem have increased significantly over the last 50 years with the increasing levels of fishing effort and capacity in the world's oceans and the increasing durability of fishing gear. when aquatic organisms entangle or interact with Abandoned, Lost, or otherwise Discarded Fishing Gear (ALDFG), it leads to their mortality called ghost fishing/ nets. Ghost nets or Abandoned, Lost, or Discarded Fishing Gear (ALDFG) are known to cause entanglement with different types of marine life.

10. That the fishing gears are made of various types of polymers and materials, with different density characteristics. Nylon fishing nets of thin diameters (0.16 mm or below) last only for 6-9 months. Turtles, in particular, are affected by ghost nets due to their tendency to use floating objects for shelter and as foraging stations. ALDFG have negative environmental and economic impacts, including navigational hazards and associated safety issues. The ability of ALDFG to continue to fish (often referred to as "ghost fishing") has impacts on fish stocks and potential impacts on endangered species and benthic environments.

11. That it is most respectfully submitted that that the subject matter of 'Fisheries' within the territorial waters of 12 nautical miles from the sea coast falls under the 'Entry 21' of the State list, under Seventh Schedule of the Constitution. The

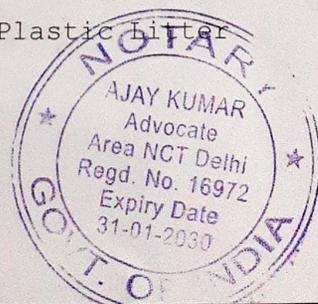


Department of Fisheries in 9 Coastal States namely West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, Gujarat and 4 Union Territories namely Dadra and Nagar Haveli & Daman and Diu, Andaman & Nicobar Islands, Lakshadweep, and Puduchchery are responsible to take necessary steps to review their respective Marine Fisheries Regulation Act (MFRA) with reference to management of Abandoned, Lost, or Discarded Fishing Gear (ALDFG) and amendment thereto if required. The Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India is allocated the matters regarding 'Promotion and development of fishing and fisheries (inland, marine and beyond territorial waters) and its associated activities', under Government of India (Allocation of Business) Rules, 1961. As per the National Policy on Marine Fisheries, 2017 notified by Govt. of India, policy directives are issued for regulatory mechanisms to control pollutants and to ensure that land and sea-based pollution are effectively controlled, the ecosystems are monitored with reference to the plastics (especially, micro-plastic particles) in the sea and ghost fishing, which affecting fish stocks. Copy of the Notification dated 28.04.2017 of Ministry of Agriculture and Farmers Welfare (Department of Animal Husbandry, Dairying and Fisheries) of



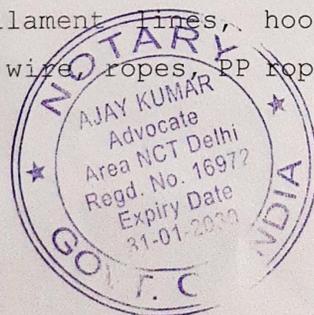
National Policy on Marine Fisheries, 2017 is annexed herewith as **Annexure-I**.

12. Accordingly, Government of India through Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying and the Directorate General of Shipping (DGS), Ministry of Port Shipping and Waterways has been actively engaged in the global efforts to combat marine plastic pollution particularly from fishing and maritime sectors. India has partnered in international initiatives like Glolitter Partnership Project and follow-up Reglitter Project both of which are jointly implemented by the International Maritime Organization (IMO) and Food and Agriculture Organization of the United Nations (UN-FAO). These projects focus on preventing and reducing Marine Plastic Litter (MPL) from sea-based sources, with an emphasis on addressing abandoned, lost, or discarded fishing gear (ALDFG) and waste from ships.
13. As a Lead Partnering Country (LPC) in the Glolitter Project, Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying and the Directorate General of Shipping (DGS), Ministry of Port Shipping and Waterways has played a key role in the development of its National Action Plan (NAP). (Copy of the National Action Plan on marine plastic litter from sea-based sources is annexed herewith as **Annexure-II**), which outlines strategic measures to reduce Marine Plastic Litter

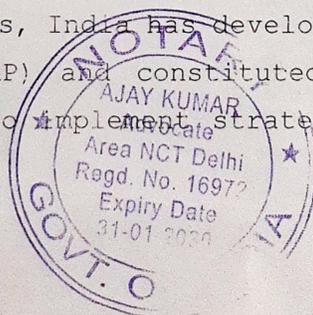


from Sea-based Sources. In this regard, Department of Fisheries have also constituted a National Task Force (NTF) on 26th August 2021 with Joint Secretary (MF), Department of Fisheries as a National Focal Point for the GloLitter Partnership Project and Fishery Survey of India (FSI), Mumbai as a Lead Agency and other line Ministries/Coastal States/Institutions are members. Copy of Order dated 26.08.2021 Constitution of National Task Force on implementation of the IMO-FAO GloLitter Partnerships (GLP) project in India is annexed herewith as **Annexure-III**.

14. During the survey voyages (April 2021 and August 2024), the Fishery Survey of India, under the Department of Fisheries, Government of India, successfully retrieved approximately 5,562 kg of Abandoned, Lost, or Discarded Fishing Gear (ALDFG). Copy of Abandoned, Lost and Otherwise Discarded Fishing Gears (ALDFG)/MPL (Marine Plastic Litter) retrieved in North East coast of India by the Survey vessel MFV Matsya Shikari & Matsya Darshini of Zonal base of Fishery Survey of India, Visakhapatnam during 2021-2024 is annexed herewith as **Annexure-IV**. using the research vessels *MFV Matsya Shikari* and *MFV Matsya Darshini* in the Upper East Coast of India (Off Andhra Pradesh and Off Odisha). The recovered debris included gill nets, monofilament lines, hooks, swivels, nylon twines, steel wire ropes, PP ropes, and bottom trawl material.



15. That under the Glolitter Project, the Department of Fisheries, Government of India is sensitizing various stakeholders like fishermen, fishing industries representatives, office bearers of fishermen cooperative societies and unions, Faculties and students of schools and colleges, Self Help Groups, State Government officials and General public on marine plastic litter including ALDFG through Institutions like Fisheries Survey of India (FSI) and its 6 regional offices, ICAR-Central Marine Fisheries Research Institute, Kochi and its regional offices, ICAR-Central Institute of Fisheries Technology (CIFT), Kochi and its regional offices and State Fisheries Departments of Coastal States/UTs.
16. Hence, the Abandoned, Lost, or otherwise Discarded Fishing Gear (ALDFG) presents significant environmental and economic concerns, particularly due to its contribution to marine pollution and its adverse impact on marine biodiversity through ghost fishing. Recognizing the gravity of this issue, the answering respondent and the Directorate General of Shipping (DGS), Ministry of Port Shipping and Waterways has undertaken regulatory and policy-driven measures in alignment with national and international commitments. As a Lead Partnering Country in global initiatives, India has developed a National Action Plan (NAP) and constituted a National Task Force (NTF) to implement strategic





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कृषि और किसान कल्याण मंत्रालय

(पशुपालन, डेयरी और मत्स्य पालन विभाग)

अधिसूचना

नई दिल्ली, 28 अप्रैल, 2017

राष्ट्रीय समुद्री मात्स्यिकी नीति, 2017

फा. सं. 21001/05/2014-एफवाई(आईएनडी) भाग V.— 1.0 प्रस्तावना राष्ट्रीय समुद्री मात्स्यिकी नीति, 2017 (एन.पी.एम.एफ., 2017) का मुख्य लक्ष्य, राष्ट्र की वर्तमान तथा भावी पीढ़ियों हेतु भारत के विशिष्ट आर्थिक क्षेत्र (Exclusive Economic Zone) में उपलब्ध समुद्री मत्स्य संसाधनों का स्वास्थ्य तथा पारिस्थितिकी समग्रता के साथ धारणीय दोहन और निर्यात सुनिश्चित करना है। एन.पी.एम.एफ., 2017 की समग्र कार्यनीति सात स्तंभों अर्थात् धारणीय विकास, मछुआरों का सामाजिक-आर्थिक उत्थान, भागीदारी, सहायता का सिद्धांत, पीढ़ीगत समानांतर सहभागिता, लैंगिक न्याय तथा सावधानीपूर्ण दृष्टिकोण पर आधारित है। ये सात स्तंभ देश के समुद्री मात्स्यिकी सेक्टर के विकास लिए की गई परिकल्पना को पूरा करने में विभिन्न पणधारियों के कार्यों का मार्ग दर्शन करेगी। इस नीति के मूल के मछुआरों की समपन्नता होगी, तथा कार्रवाईयां “लोक विश्वास सिद्धांत” पर आधारित होंगी।

ज्ञातव्य है कि भारत को उपलब्ध विशिष्ट आर्थिक क्षेत्र 2.02 मिलियन वर्ग कि.मी. में फैला हुआ है, जिसकी तटरेखा 8118 किमी लम्बी है तथा इसके अंतर्गत विविध समुद्री संसाधन वाले द्वीपों के दो प्रमुख समूह भी आते हैं;

यह समझते हुए कि उपरोक्त के दृष्टिकोण समुद्री मात्स्यिकी संपत्ति की वार्षिक दोहन योग्य क्षमता लगभग 4.412 मिलियन मीट्रिक टन अनुमानित है;

यह कि अनुमानतः 4.0 मिलियन व्यक्ति अपनी आजीविका के लिए समुद्री मात्स्यिकी संसाधनों पर निर्भर करते हैं;

यह कि समुद्री मात्स्यिकी लगभग 65,000 करोड़ रुपए (2014-15) की कीमत की आर्थिक संपत्ति का योगदान करती है;

और यह भी दृष्टिगत रखते हुए कि समुद्री मात्स्यिकी खाद्य पोषण, रोजगार तथा आय सृजन का महत्वपूर्ण स्रोत है;

साथ ही, यह कि समुद्री मात्स्यिकी से होने वाली आय का देश की निर्यात आय में तथा अंतर्राष्ट्रीय व्यापार में बहुत बड़ा योगदान है;

यह जानते हुए कि देश की समुद्री मात्स्यिकी अत्यधिक विविध है परन्तु मुख्य रूप से इसमें छोटे पैमाने के तथा पारंपरिक मछुआरे शामिल हैं;

आगे यह समझते हुए कि समुद्री मात्स्यिकी सेक्टर गैर-सरकारी तथा सरकारी एजेंसियों सहित बहुत सारे अन्य पणधारियों द्वारा सेवित है;

यह स्वीकार्य करते हुए कि राष्ट्र के समुद्री जैविक संसाधन समुद्री मछली पालन सहित धारणीय पद्धतियों से उत्पादन को बढ़ाने के लिए व्यापक संभावनाएं प्रस्तुत करते हैं;

यह जानते हुए कि समुद्री मत्स्य पालन संसाधन सीमित होने के कारण समाप्त भी हो सकते हैं और इस कारण अधिदोहन के अधीन हैं।

यह भी समझते हुए कि ऐसे अधिदोहन से जैव-विविधता की हानि होगी तथा हमारी भावी पीढ़ियों के लिए संसाधनों की उपलब्धता में कमी आएगी;

यह भी ध्यान में रखते हुए कि देश समुद्री जीवित संसाधनों के सतत उपयोग के लिए अंतरराष्ट्रीय समझौतों और व्यवस्था के लिए प्रतिबद्ध है;

राष्ट्रीय समुद्री मात्स्यिकी नीति, 2017 देश के समुद्री मात्स्यिकी सेक्टर के लिए निम्नलिखित परिकल्पना, ध्येय तथा कार्यनीति की सिफारिशें करती हैं।

विज्ञान (परिकल्पना)

“एक स्वस्थ तथा जीवंत समुद्री मात्स्यिकी सेक्टर जो वर्तमान तथा भविष्य की पीढ़ियों की आवश्यकताओं को पूरा करे।”

मिशन (ध्येय)

“संसाधनों की धारणीयता को सभी कार्रवाईयों के दृष्टिगत रखते हुए नीतिगत रूपरेखा राष्ट्रीय, सामाजिक तथा आर्थिक लक्ष्यों तथा मछुआरा समुदाय के कल्याण के कार्य को पूरा करेगी और इसका उद्देश्य अगले दस वर्षों के दौरान देश में समुद्री मात्स्यिकी के समन्वयन तथा प्रबंधन को मार्गदर्शित करना है।”

कार्यनीति (Strategy)

भारत में समुद्री मात्स्यिकी सेक्टर- एक रूपरेखा

2.0 भारतीय विकासात्मक आयोजनाओं में काफी पूर्व से ही मात्स्यिकी सेक्टर तथा विशेष रूप से समुद्री मात्स्यिकी सेक्टर की क्षमता को प्रमुख स्थान दिया गया है और तभी से इस सेक्टर को विकास के एक महत्वपूर्ण कार्यनीति के रूप में विकसित करने के लिए व्यापक प्रयासों को कार्यान्वित किया गया है। राष्ट्र की आबादी हेतु खाद्य तथा पोषणिक आवश्यकताओं को पूरा करने के प्रमुख उद्देश्य के अलावा मात्स्यिकी सेक्टर व्यापार तथा वाणिज्य में एक महत्वपूर्ण भूमिका निभाती है तथा इस प्रक्रिया में तटवर्ती समुदायों के लिए रोजगार तथा आजीविका को बढ़ावा मिलता है।

3.0 पचास के दशक में पूर्ण रूप से पारंपरिक गतिविधि के रूप में प्रारंभ होकर मात्स्यिकी अब एक वाणिज्यिक उद्यम के रूप में परिवर्तित हो चुका है। 1976 में विशिष्ट आर्थिक क्षेत्र (ईईजेड) घोषित होने के पश्चात् भारत को उपलब्ध समुद्री क्षेत्र 2.02 मिलियन वर्ग किमी होने का अनुमान है। विशिष्ट आर्थिक क्षेत्र पर संपूर्ण अधिकार के साथ-साथ भारत ने इस क्षेत्र में समुद्री जीवित संसाधनों के संरक्षण विकास तथा इष्टतम दोहन का उत्तरदायित्व भी स्वीकार किया है। 2011 में भारत सरकार द्वारा गठित कार्य समूह (Expert Working Group) ने भारतीय ईईजेड की संभावित उत्पादन क्षमता 4.412

मिलियन मीट्रिक टन (एमएमटी) होने का अनुमान लगाया। यह अनुमान वर्ष 2000 में गठित कार्य समूह (Expert Working Group) द्वारा किए गए पूर्व के अनुमान (3.934 एमएमटी) से 12.2% अधिक है। पेलाजिक संसाधन जैसे ऑइल सार्डिन, रिबनफिश, भारतीय मैकरेल, इत्यादि 2.128 एमएमटी (48.2%); डिमर्सल संसाधन जैसे पेनाईड तथा नॉन पेनाईड प्रान, सीफैलोपोड, पर्सेस, क्रोकर्स इत्यादि 2.067 एमएमटी (46.8%) हैं तथा महासागरीय संसाधन जैसे येलोफिन टून, स्किपजैक टूना, बिगआई टूना, बिलफिश, पेलाजिक शार्क, बाराकुडा, डॉलफिन मछली तथा वाहू 0.27 एमएमटी (4.9 प्रतिशत) हैं। भारतीय ईईजेड में अनुमानित उत्पादन क्षमता का गहराई-वार वितरण इस प्रकार है: 100 मी. गहराई तक 3.821 एमएमटी (86.6 प्रतिशत), 100-200 मीटर तक की गहराई तक 0.259 एमएमटी (5.8 प्रतिशत) तथा 200-500 मीटर की गहराई में 0.115 एमएमटी (2.6 प्रतिशत), शेष 0.217 एमएमटी (4.9 प्रतिशत) महासागरीय जल में मौजूद है। पिछले 4 वर्षों (2012-13 से 2015-16) के दौरान औसत समुद्री मत्स्य-उत्पादन 3.499 एमएमटी रहा है, जबकि 2015-16 में यह 3.583 एमएमटी (अनंतिम) था। हालांकि समीपवर्ती तट के जलों के मात्स्यिकी संसाधनों का पूर्ण दोहन होता है, वहीं गहरे समुद्र तथा महासागरीय जल में उत्पादन को बढ़ाने के अवसर उपलब्ध हैं।

4.0 राष्ट्रीय समुद्री मात्स्यिकी संगणना, 2010 के अनुसार भारत में समुद्री मछुआरों की आबादी 4.0 मिलियन है, जिनमें से 0.99 मिलियन सक्रिय मछुआरे हैं। सक्रिय मछुआरों में से 33% यांत्रिकृत सेक्टर में, 62% मोटराईज्ड सेक्टर में तथा 5% पारंपरिक या आर्टिसनल सेक्टर में कार्य कर रहे हैं। कुल समुद्री मत्स्य उत्पादन में से 75% यांत्रिकृत सेक्टर से, 23% मोटराईज्ड सेक्टर से तथा 2% पारंपरिक सेक्टर से आता है। पिछले 50 वर्षों के दौरान भारत में समुद्री मत्स्य उत्पादन का पैटर्न स्पष्ट रूप से यह दर्शाता है कि साठ के दशक तक कुल उत्पादन में पारंपरिक सेक्टर का योगदान महत्वपूर्ण रहा है। अनुवर्ती अवधियों के दौरान यांत्रिकृत मत्स्यन की लोकप्रियता तथा विस्तार के साथ ही पारंपरिक नौकाओं के मोटरीकरण के कारण पारंपरिक सेक्टर का योगदान पिछले कुछ वर्षों से लगातार गिरता रहा है। यांत्रिकृत ट्राल मात्स्यिकी अब भारत की विभिन्न मत्स्यन पद्धतियों में से सबसे महत्वपूर्ण है तथा देश के कुल समुद्री मत्स्य उत्पादन में इसका 55% योगदान है।

5.0 राजस्व के मामले में गहरे जल में पायी जाने वाली कुछ उच्च मूल्य की प्रजातियां, जैसे टूना का अभी भी इष्टतम रूप से दोहन किया जाना है। उपलब्ध समुद्री संसाधनों के धारणीय माध्यम के द्वारा पूर्ण दोहन से देश तथा इस सेक्टर से जुड़े लोगों का सतत विकास सुनिश्चित हो सकेगा। चूंकि यह सेक्टर अत्यंत गतिशील है अतः वर्तमान तकनीकी ज्ञान तथा संसाधनों की स्थिति का लाभ उठाने के लिए नीतियों तथा कार्यक्रमों को सुप्रवाही बनाने की आवश्यकता है। इस दिशा में नीति निम्नलिखित सिफारिशें करती है:

मात्स्यिकी प्रबंधन

6.0 सरकार द्वारा भारतीय ईईजेड में मछली के संभावित भंडार के आकलन के लिए 2011 में गठित कार्यकारी समूह (Working Group) ने सभी समुद्री राज्यों / संघ शासित प्रदेशों में विभिन्न प्रकार की यांत्रिकृत मत्स्य-नौकाओं के संबंध में क्षेत्रीय जल में अधिक क्षमता मौजूद होने का संकेत दिया था तथा सरकार के विचार के लिए इष्टतम बेड़े के आकार का सुझाव भी दिया था। कार्यकारी समूह की रिपोर्ट में निहित सुझावों पर विचार किया जाएगा तथा अधिक क्षमता को चरणबद्ध तरीके से कम करने के लिए रणनीतियां विकसित की जायेंगी एवं राज्यों / संघ शासित प्रदेशों और अन्य संबंधित हितधारकों के परामर्श से इन्हें लागू भी किया जाएगा।

7.0 भारत के निकटवर्ती समुद्र से वर्तमान में प्राप्त औसत उत्पादन दर, संभावित अधिकतम उत्पादन क्षमता के अनुमानों के निकट है, जो 200 मीटर की गहराई के भीतर संसाधनों की इष्टतम हार्वेस्टिंग को दर्शाता है। दूसरी ओर महासागरीय जलों में अभी भी उच्च मूल्य वाले संसाधनों जैसे टूना, टूना जैसी प्रजातियों, मिक्टोफिड्स तथा महासागरीय स्किवड की एक अप्रयुक्त क्षमता मौजूद है। हालांकि, मौजूदा उत्पादन और संभावित उपज के अनुमानों में व्यापक अंतराल को देखते हुए भी, प्रकृतिकृत मछली हार्वेस्ट के संबंध में, वैश्विक मानकों के अनुरूप सावधानीपूर्ण दृष्टिकोण अपनाने की आवश्यकता है। अंतरतटीय जलों के संबंध में सरकार धारणीयता तथा इच्छिटी के प्रमुख सिद्धांतों के साथ हार्वेस्ट को अधिकतम धारणीय उत्पादन (Maximum Sustainable Yield) के वर्तमान स्तरों के लगभग बनाए रखने पर बल देगी।

8.0 समुद्री मात्स्यिकी की पूर्ण क्षमता को प्राप्त करने के लिए मत्स्यन प्रयास प्रबंधन; फ्लीट आकार को इष्टतम बनाने; उत्पादन प्रक्रिया में जैवविविधा संरक्षण को मुख्यधारा में लाने; प्रजाति-विशिष्ट तथा क्षेत्र-विशिष्ट प्रबंधन योजनाओं के लिए

प्रयास किए जाएंगे, जिसमें पारिस्थितिकी तथा जैविकीय रूप से महत्वपूर्ण क्षेत्रों (Ecologically and Biologically Significant Areas) तथा संवेदनशील समुद्री परिस्थितिकी तंत्र का संरक्षण; आइकोनिक तथा संकटापन्न प्रजातियों की सुरक्षा; संसाधनों के धारणीय उपयोग के लिए स्थानिक (spatial) तथा सामयिक (temporal) उपाय; तथा परामर्शी प्रक्रिया द्वारा मछली रिफ्यूजिआ का सृजन भी शामिल है। इसके साथ-साथ, यह सुनिश्चित करने के लिए पारंपरिक मछुआरों के अधिकार सुरक्षित हैं तथा उनकी आजीविका ऐसे संरक्षणात्मक उपायों से प्रभावित नहीं होती, सरकार मौजूदा समुद्री संरक्षित क्षेत्रों (Marine Protected Areas) की समीक्षा भी करेगी।

9.0 मात्स्यिकी प्रबंधन में एकीकृत दृष्टिकोण अपनाया जायेगा, जिसमें पारंपरिक ज्ञान तथा विज्ञान के साथ व्यापारिक सिद्धांतों तथा प्राथमिक पणधारियों और संबद्ध गतिविधियों में लगे हुए व्यक्तियों को प्रभावी रूप से शामिल किया जाएगा, ताकि यह सुनिश्चित किया जा सके कि मात्स्यिकी परिस्थितिक तथा आर्थिक रूप से धारणीय बनी रहे। परिपरिक तथा यांत्रिकीकृत सेक्टरों के बीच विवाद को निपटाने, सामूहिक चिंता के उभरते मुद्दों को सुलझाने के लिए तथा सुसंगत प्रबंधन दृष्टिकोण और बेहतर सहयोग को प्रोत्साहित करते हुए, राष्ट्रीय क्षमता निर्माण को बढ़ावा देने में सहायता करने के लिए मात्स्यिकी की शासन - विधि में सुधार किया जाएगा।

10.0 समुद्री मात्स्यिकी क्षेत्र की प्रमुख विशेषताओं जैसे कि संसाधन की प्रचुरता और वितरण; वास्तविक समय में संसाधन उपलब्धता के नक्शे; उत्पादकता आकलन; वास्तविक समय में संभावित मत्स्य पालन क्षेत्र (Potential Fishing Zone) की सलाह और मछुआरों के लाभ के लिए मौसम के पूर्वानुमान आदि के बारे में जानकारी की तत्काल और सुगम उपलब्धता को बढ़ावा देने के लिए ज्ञान प्रबंधन एक माध्यम बनेगा। मछुआरा समुदाय के समर्थन में लाभों का इष्टतम उपयोग करने के लिए सूचना प्रौद्योगिकी (IT) तथा अंतरिक्ष प्रौद्योगिकी को उपयोग में लाया जाएगा।

11.0 स्थानिक तथा सामयिक पाबंदियों (Spatial and temporal closures) ने देश की समुद्री मत्स्य सम्पदा को बनाए रखने में सहायता की है। यह सुनिश्चित करने के लिए कि ऐसे प्रबंधन उपाय मछुआरों की आजीविका को प्रभावी रूप से सुधारें, निवारक दृष्टिकोण सहित सर्वोत्तम उपलब्ध वैज्ञानिक सूचना को ध्यान में रखते हुए तथा मछुआरों और अन्य संबंधित पणधारियों को यथोचित रूप से शामिल करते हुए इनकी आवधिक समीक्षाएं की जाएगी।

12.0 समुद्री मत्स्यन संसाधन असीमित नहीं है, और जैसा कि बहुत सारे मामलों में देखा गया है, अनियंत्रित हार्वेस्ट से उपलब्ध संसाधन समाप्त हो सकते हैं। मत्स्यन प्रयासों को इष्टतम बनाने तथा संसाधनों को धारणीय बनाने में सहायता करने वाले उपाय अपनाने के लिए संबंधित वैज्ञानिक संस्थानों तथा मछुआरों के साथ परामर्श करके सरकार उपयुक्त कदम उठाएगी। ऐसे उपायों में अन्य के साथ-साथ इन्पुट तथा आउटपुट नियंत्रणों, फ्लीट आकार, मत्स्यन दिवस तथा संचालन क्षेत्र, इंजिन हार्सपावर, गिअर का आकार, एमएसवाई, न्यूनतम जाल-आकार, कानूनी रूप से निर्धारित आखेट हेतु मछली का न्यूनतम आकार, अपेक्षाकृत कम हार्वेस्ट वाले क्षेत्रों में मत्स्यन के प्रयास को परावर्तित करना; फ्लीट योजना से संबंधित मानचित्र तैयार करना; तथा संसाधनों को समाप्त होने से रोकना सुनिश्चित करने के लिए मात्स्यिकी प्रबंधन क्षेत्र सृजित करना आदि शामिल हैं। संबंधित संस्थान कमी या ह्रास की स्थिति वाले मछली स्टॉक के पुनःनिर्माण तथा इनके पुनर्संवर्धन या रिकवरी की योजना तैयार करना सुनिश्चित करेंगे। मात्स्यिकी प्रबंधन के लिए एक क्षमता मूल्यांकन रूपरेखा (capacity appraisal framework) बनाई जायेगी।

13.0 वर्तमान में तटवर्ती राज्यों/संघ राज्य क्षेत्रों में तट से गहराई या दूरी के आधार पर पारंपरिक मछुआरों के लिए विशिष्ट आरक्षित क्षेत्र चिन्हित किये गए हैं, जहां यांत्रिक विधियों से मत्स्यन की अनुमति नहीं होती है। ऐसे क्षेत्रीय उपयोग के अधिकार (Territorial Use Rights for Fisheries or TURFs) पारंपरिक मछुआरों की आजीविका को बनाए रखने में उपयोग सिद्ध हुए हैं। सरकार पारंपरिक मछुआरों को ऐसी सहायता प्रदान करती रहेगी तथा कार्यकारी समूहों के साथ परामर्श करके, सरकार प्रादेशिक जल में पारंपरिक मछुआरों को वर्तमान में उपलब्ध क्षेत्र को और बढ़ाने पर विचार करेगी।

14.0 पारिस्थितिकी तंत्र के सभी जैविक और निर्जीव घटकों पर उचित विचार करते हुए और हितधारकों के कल्याण के लिए मत्स्य-प्रबंधन के पारिस्थितिकीय दृष्टिकोण (Ecosystem Approach to Fisheries Management) को कार्यान्वित किया जाएगा। इसी प्रकार से मात्स्यिकी क्षेत्र में विश्व में बहु-पणधारी, बहु-प्रजाति तथा बहु-फ्लीट मात्स्यिकी के सफल

प्रबंधन प्रणालियों में से एक, प्रतिभागी प्रबंधन या सह-प्रबंधन (participatory management or co-management) को बढ़ावा दिया जाएगा। स्थानीय क्षेत्रीय, अंतर-राज्यीय तथा राष्ट्रीय मात्स्यिकी को शामिल करने वाली ऐसी सह-प्रबंधन प्रणाली मछुआरों के विभिन्न समूहों के बीच के टकराव को भी सुलझाएगा। इन प्रबंधन उपायों को शामिल करने संबंधी मानकों को मात्स्यिकी अनुसंधान संस्थाओं, तटवर्ती राज्यों/ संघ राज्य क्षेत्रों, मछुआरों तथा अन्य संगठनों तथा इस सेक्टर में अन्य संबंधित पणधारियों के साथ परामर्श करके तैयार किया जाएगा।

15.0 भारतीय विशिष्ट आर्थिक क्षेत्र के 12-200 समुद्री मील में मत्स्यन संचालन, पशुपालन, डेयरी और मत्स्य पालन विभाग (डीएएडीएफ) द्वारा समय-समय पर जारी दिशानिर्देशों के अनुसार होता रहा है। इन दिशानिर्देशों के आधार पर पात्र आवेदकों को निर्धारित क्षेत्रों में मत्स्यन करने के लिए अनुमति पत्र (LOP या Letter of Permit) दिया जाता था। यह देखते हुए कि एल.ओ.पी. योजना का गहरे समुद्र में मत्स्यन सेक्टर के समेकित विकास पर अपेक्षित प्रभाव नहीं दिखा, सरकार एल.ओ.पी. योजना को वापस लेते हुए इस सेक्टर के विकास के लिए एक वैकल्पिक तंत्र पर विचार करेगी। समुद्री मात्स्यिकी के लघु पैमाने की प्रकृति को बरकरार रखते हुए समुद्री मात्स्यिकी के समेकित विकास और उपलब्ध संसाधनों के इष्टतम दोहन के लिए गहरे समुद्र में मत्स्यन तथा प्रसंस्करण में निजी निवेश को बढ़ावा दिया जाएगा। मात्स्यिकी सेक्टर, विदेशी प्रौद्योगिकी आदान-प्रदान कार्यक्रम के अलावा समुद्र में लम्बी यात्राएं कर सकने वाले, जंगरोधी तथा आधुनिक गहरे समुद्र के मत्स्यन-यानों के एक मजबूत बेड़े के साथ गहरे समुद्र की मात्स्यिकी को अपनाया चाहता है। गहरे समुद्र में मत्स्यन के लिए भारतीय मत्स्यन बेड़े के क्षमता निर्माण के लिए सभी केंद्रीय तथा राज्य सरकार के पणधारियों को साथ लेते हुए एकल खिड़की दृष्टिकोण अपनाया जाएगा। उद्यमशीलता विकास, निजी निवेश, सार्वजनिक निजी भागीदारी (पी.पी.पी.) और समुद्री मात्स्यिकी के लिए संस्थागत वित्त के बेहतर लाभ को प्रोत्साहित किया जाएगा। इसके अलावा, समुद्री मात्स्यिकी सेक्टर के समेकित विकास के लिए सी-फूड प्रसंस्करण तथा निर्यात उद्योग को गहरे समुद्र में मत्स्यन उद्योग के साथ मिलाने के लिए रूपरेखाएं तैयार की जायेंगी।

16.0 गहरे समुद्र में मत्स्यन को लोकप्रिय बनाने और पारंपरिक मछुआरों के कौशल और क्षमताओं को बढ़ाने के लिए सरकार नई विकासात्मक योजना(यें) लायेगी। इस योजना के अलावा, गहरे समुद्र में मछली पकड़ने वाले मौजूदा स्वदेशी बेड़े का आधुनिकीकरण, मछुआरों की सहकारी समितियों / स्वयं सहायता समूहों के माध्यम से गहरे समुद्र में मछली पकड़ने वाले नए स्वदेशी जहाजों का आदान, ऑन-बोर्ड प्रशिक्षण, बाजारों और निर्यात से लिंकेज पर विचार किया जाएगा। इन प्रक्रियाओं/योजनाओं को लागू करते समय यह सुनिश्चित किया जाएगा कि ऐसी पहलें ईईजेड में मत्स्यन संबंधी अंतरराष्ट्रीय विनियमों का अनुपालन करें। ईईजेड में गहरे समुद्र संसाधनों का उपयोग न केवल ईईजेड में उपलब्ध संसाधनों के संदर्भ में, बल्कि बुनियादी ढांचे, नौका निर्माण, सर्वेक्षण और प्रमाणन, मानव क्षमता विकास और नियमों और विनियमों के व्यापक और कार्यान्वयन के लिए तकनीकी साधनों पर पुनर्विचार करेगा बल्कि एक मजबूत निगरानी, नियंत्रण और निगरानी (एमसीएस) तंत्र के साथ, वाणिज्यिक मत्स्य-संसाधनों पर वैज्ञानिक और तकनीकी जानकारी की उपलब्धता, और उन्हें लक्षित करने के लिए सर्वोत्तम मत्स्यन के तरीकों पर भी ध्यान दिया जाएगा।

17.0 तटवर्ती राज्यों की आवश्यकताओं को ध्यान में रखते हुए ईईजेड के लिए एक समग्र संसाधन उपयोग योजना तैयार की जाएगी। इसी समय, तटीय राज्यों / संघ शासित प्रदेशों को भी यह समझने के लिए अनुरोध किया जाएगा कि 12 से 200 समुद्री मील के बीच ईईजेड केंद्रीय सरकार द्वारा प्रबंधित एक उभय-निष्ठ (कॉमन) संसाधन वाला क्षेत्र है तथा यहाँ राज्यों / संघ शासित प्रदेशों द्वारा एकाकी मत्स्यन की रणनीति से अधिक-दोहन और अंतरराज्यीय संघर्ष हो सकता है। अतः संघ सरकार तथा राज्य सरकारों को ईईजेड में संसाधनों के धारणीय उपयोग हेतु प्रबंधन नीतियों तथा उपायों पर सहमत होने के लिए मिल कर कार्य करना होगा। समुद्री मात्स्यिकी के प्रबंधन के लिए अंतर-राज्यीय टकरावों के साथ-साथ अंतरराष्ट्रीय टकरावों को कम करने और उनका प्रबंधन करने के लिए एक संस्थागत तंत्र तैयार तथा सुदृढ़ किया जाएगा। सरकार एकीकृत तटीय तथा द्वीपीय विकास योजनाएं तैयार तथा कार्यान्वित करेगी, जो तटवर्ती राज्यों तथा द्वीपों की अर्थव्यवस्था में वृद्धि करने के लिए एक महत्वपूर्ण तंत्र होगा। इन योजनाओं में मात्स्यिकी के दोहन, तटवर्ती/द्वीप पर्यटन, तैरते हुए दोबारा तेल भरने वाले बजरो की स्थापना, मूल वाहक यान तथा सचल समुद्री एम्बुलेंसों आदि संयुक्त रूपरेखा में शामिल होंगी।

18.0 राष्ट्रीय न्यायाधिकार क्षेत्र से परे के क्षेत्रों (ए.बी.एन.जे.) में मात्स्यिकी संसाधनों जैसे कि क्रिल-फिशिंग आदि को

हार्वेस्ट किए जाने की व्यापक संभावनाएं मौजूद हैं, जोकि कई अन्य देशों द्वारा हार्वेस्ट किया गया है। सरकार खुले समुद्र में मात्स्यिकी से संबंधित अंतर्राष्ट्रीय करारों/ व्यवस्थाओं के संगत प्रावधानों के अनुपालन की शर्त पर तथा तटीय सुरक्षा और समुद्र में मछुआरों की सुरक्षा को ध्यान में रखते हुए उपयुक्त मानीटरिंग तथा संचार तंत्र के साथ भारतीय मत्स्यन यानों द्वारा ए.बी.एन.जे. में मात्स्यिकी संसाधनों के उपयोग को बढ़ावा देगी।

मानीटरिंग, नियंत्रण और निगरानी (एम.सी.एस.)

19.0 समुद्री मात्स्यिकी सेक्टर में वर्तमान में स्थापित दृढ़ और प्रभावी एम.सी.एस. तंत्र को और सुदृढ़ किए जाने की आवश्यकता है। सरकार ने समुद्री सेक्टर में चल रहे सभी मत्स्यन यानों (पारंपरिक, मोटराइज्ड, यांत्रिक तथा गैर यांत्रिक) को पंजीकृत करने के लिए एक ऑनलाइन एक-समान पंजीकरण तथा लाइसेंसिंग प्रणाली (रियलक्राफ्ट) प्रारंभ की है। हालांकि पंजीकरण और लाइसेंसिंग के माध्यम से मछली कैच की मानीटरिंग तथा मत्स्यन संबंधी प्रयास का नियंत्रण हो रहा है तथापि, एम.सी.एस. गतिविधियों को समुद्री राज्यों/ संघ राज्य क्षेत्रों के मात्स्यिकी विभाग, तटवर्ती समुद्री पुलिस तथा तट रक्षक जैसी संबंधित एजेंसियों की और अधिक भागेदारी के माध्यम से और सुदृढ़ किया जाएगा। एम.सी.एस. का सुदृढ़ीकरण तथा सुधार चरणबद्ध रूप से किया जाएगा। इसके लिए पारंपरिक साधनों (जैसे लांग बुक, आवाजाही टोकन, मत्स्य-नौकाओं की कलर कोडिंग, मछुआरों को उनकी पहचान के लिए बायोमेट्रिक कार्ड का प्रयोग) तथा साथ ही अंतरिक्ष प्रौद्योगिकी और आई.टी. उपकरणों (जैसे नौका मानीटरिंग प्रणाली तथा स्वचालित पहचान प्रणाली) का भी प्रयोग किया जाएगा। एक और प्रभावी एम.सी.एस. प्रणाली स्थापित करने के लिए केंद्र सरकार राज्य सरकारों के साथ काम करेगी। भारतीय तटरक्षक बल (आईसीजी) और तटीय पुलिस को पर्याप्त रूप से प्रशिक्षित और एम.सी.एस. को मजबूत करने के लिए सुसज्जित होना चाहिए। कम्युनिटी आधारित एम.सी.एस. प्रणाली को स्थापित करने के लिए हर प्रयास किया जाएगा।

20.0 समुद्री मात्स्यिकी सेक्टर में डिजाइन, आकार, इंजन तथा गिअर और संचालन क्षेत्र के आधार पर कई प्रकार की मत्स्यन नौकाएं इस सेक्टर की विशेषता हैं। मात्स्यिकी सेक्टर की आवश्यकताओं जैसे कि पंजीकरण, प्रमाणन, सर्वेक्षण तथा प्रमाणन, पहचान संबंधी तथा ट्रेकिंग उपकरणों का अनिवार्य वदन, पहचान संबंधी दस्तावेज का अनिवार्य वदन, पंजीकरण दस्तावेज के उपर्युक्त उपबंधों का उल्लंघन करने पर जुर्माना, समुद्र में सुरक्षा तथा मत्स्यन यानों को चलाने संबंधी मानकों को पूरा करने के लिए तथा खाद्य और कृषि संगठन (एफ.ए.ओ.), अंतर्राष्ट्रीय समुद्री संगठन (आई.एम.ओ.), अंतर्राष्ट्रीय श्रम संगठन (आई.एल.ओ.) इत्यादि जैसी संबंधित एजेंसियों द्वारा निर्धारित अंतर्राष्ट्रीय मानकों और मापदण्डों को पूरा करने के लिए संबंधित कानूनों को अद्यतन किए जाने की आवश्यकता है।

21.0 बोट-बिल्डिंग-याडों की स्थापना तथा मत्स्यन नौकाओं का निर्माण, देश में एक अविनियमित गतिविधि है, जिससे खराब गुणवत्ता वाली नौकाओं का निर्माण होता है, परिणामतः महत्वपूर्ण गुणों, जैसे स्थिरता, मछली होल्ड के लिए ईष्टतम स्थान, कर्मी क्वार्टर तथा रसोई और शौचालय की व्यवस्थाओं में समझौता करना पड़ता है। फाइबर प्रबालित प्लास्टिक (एफआरपी) के अधिक उपयोग से इस प्रकार के बोट-बिल्डिंग याडों द्वारा खराब किस्म की नौकाओं का निर्माण बढ़ गया है। सरकार, समुद्री राज्यों/संघ राज्य क्षेत्र के समुद्री मत्स्यन विनियमन अधिनियम (एम.एफ.आर.ए.) के क्षेत्र विस्तार पर विचार करेगी, जिससे कि बोट-बिल्डिंग-याडों का पंजीकरण, मत्स्यन नौकाएं समुद्र में चलने योग्य हैं या नहीं, इसके वार्षिक सर्वेक्षण, आई.आर.एस. या ऐसे ही किसी तकनीकी संगठन के माध्यम से संचार और सुरक्षा उपकरणों की जांच, नांव के मानक डिजाइन विनिर्देश आदि इसके दायरे में आ सकें, तथा नौका निर्माण हेतु निर्माण सामग्री और सतत निगरानी प्रक्रिया का नियंत्रण पूर्णतः केंद्र तथा राज्य सरकारों द्वारा किया जाएगा।

22.0 भारत, रिपोर्ट न की गई, अनियमित और अवैध (आई.यू.यू.) मत्स्यन को रोकने और समाप्त करने संबंधी विभिन्न अंतर्राष्ट्रीय करारों/समझौतों का पक्षकार है, तथा यह देखते हुए सुनिश्चित किया जाएगा कि कोई भी भारतीय मत्स्यन नौका/ फ्लीट हमारे अपने ई.ई.जेड. के अंदर, अंतर-राष्ट्रीय समुद्र में या अन्य देशों के ई.ई.जेड. में किसी भी प्रकार से आई.यू.यू. फिशिंग में लिप्त नहीं है, सरकार बंदरगाह और समुद्र, दोनों में एक समर्थ तंत्र की स्थापना करेगी।

23.0 हाल ही में भारतीय मछुआरों द्वारा अंतर्राष्ट्रीय समुद्री सीमा रेखा (आई.एम.बी.एल) को पार करने की घटनाओं में वृद्धि हुई है। यह वृद्धि अनेक कारणों से है, उनमें से एक कारण स्थाई मध्यस्थता न्यायालय, हेग द्वारा दिये गये निर्णय के आधार पर आई.एम.बी.एल को पुनर्परिभाषित करने के कारण है। इस तरह की घटनाओं को कम करने के लिए सरकार मछुआरों को आवश्यक जागरूकता और प्रशिक्षण देगी ताकि आई.एम.बी.एल. को पार करने से बचा जा सके।

24.0 अन्तर्राष्ट्रीय श्रम संघ संगठन (आई.एल.ओ) का करार सं.188 फिशिंग नौकाओं में उत्तम श्रम परिस्थितियों के आवश्यक प्रबंध कराने से संबंधित एक ऐतिहासिक अन्तर्राष्ट्रीय करार है। मत्स्यन नावों पर काम करने वाले श्रामिकों को आवश्यक सुरक्षा उपलब्ध कराने हेतु घरेलू कानून में उपरोक्त करार (कन्वेंशन) के प्रावधान के समावेश पर सरकार विचार करेगी। इस संबंध में, यह आवश्यक होगा कि किसी एक राज्य/ संघ राज्य क्षेत्र के श्रमिक जब दूसरे राज्य में मत्स्य-नौकाओं पर कार्य करने के लिए प्रवास करते हैं, तब भी उपरोक्त प्रावधान उन पर लागू हो। केंद्रीय सरकार आई.एल.ओ. करार सं.188 के अनुसमर्थन और इसके त्वरित कार्यान्वयन को तय समय सीमा में लागू करने के लिए राज्य सरकारों के साथ मिलकर कार्य करेगी जिसमें नौका-कर्मियों और नौकाओं के प्रवासी कर्मियों की कार्यदशाओं में सुधार, अंतर्राष्ट्रीय मानकों और नियमों के संदर्भ में मात्स्यिकी से संबंधित भारत के कानूनों को अद्यतन करने और यानों के पंजीकरण, स्वच्छता और लैंडिंग केन्द्रों तथा बंदरगाहों आदि के लिए स्वच्छता मानदंडों के लिए समय सीमा तय करना शामिल हैं।

25.0 आई.एल.ओ द्वारा यह अनुमान लगाया गया है कि समुद्र में मत्स्यन के समय वार्षिक रूप से वैश्विक स्तर पर 24,000 मछुआरों की मृत्यु होती है। ये आकड़े उन देशों से प्राप्त किये गये हैं जहां समुद्र में दुर्घटनाओं से संबंधित सांख्यिकी को सही प्रकार से रखा जाता है। यदि अन्य देशों के मृत्यु-दर आकड़ों को भी इस में शामिल कर लिया जाये, तो यह अनुमान और अधिक होगा। भारतीय समुद्री मात्स्यिकी के मुख्यतः 'लघु प्रकृति' के संदर्भ में सरकार यह सुनिश्चित करेगी कि समुद्र में सुरक्षा उपायों को ठीक प्रकार से सुदृढ़ और कार्यान्वित किया गया है। ऐसे उपायों में, अन्य बातों के साथ-साथ नाव पर जीवन रक्षक यंत्रों जैसे संकट सतर्कता ट्रांसमीटर (डी.ए.टी), स्वतः पहचान प्रणाली (ए.आई.एस) अथवा समान ट्रांसपोंडर और संचार उपकरण और मछुआरों तथा अन्य संबंधित पणधारियों हेतु उचित कौशल और क्षमता विकास के प्रावधान शामिल होंगे। मछुआरों की सुरक्षा के उचित प्रावधान करते हुए ऐसी प्रणालियों को केंद्र और राज्य सरकारों द्वारा लागू किया जायेगा।

मात्स्यिकी डेटा और अनुसंधान

26.0 निर्णयों को मूर्त रूप देने के लिए सरकार विज्ञान और नीति के इंटरफेस को सुदृढ़ बनायेगी। समुद्री मात्स्यिकी क्षेत्र के विभिन्न पहलुओं पर नीति-गत निर्णय लेने के लिए समय पर, विश्वसनीय एवं व्यापक डाटासेट की आवश्यकता होगी, जिसको ध्यान में रखते हुए सरकार, केंद्र और राज्य सरकारों, अनुसंधान संस्थानों और हितधारकों को जोड़ते हुए एक 'राष्ट्रीय समुद्री मात्स्यिकी डाटा अधिग्रहण योजना' को लागू करेगी। मात्स्यिकी में समयबद्ध एवं विश्वस्त डाटा प्राप्त करने के उद्देश्य को दृष्टिगत रखते हुए शीघ्र ही एक योजना लागू की जायेगी जिसके द्वारा इन संस्थानों को क्षमता-निर्माण, प्रबंधन प्रणाली और उचित प्रौद्योगिकी के जरिये सुदृढ़ किया जायेगा।

समुद्री मछली पालन (मैरी कल्चर)

27.0 मैरीकल्चर, यदि स्थायी रूप से किया जाये तो तटीय जल से मछली उत्पादन को बढ़ाने में यह एक महत्वपूर्ण भूमिका निभा सकता है। मैरीकल्चर क्षेत्र के विकास के लिए, मैरीकल्चर फार्मों/पाकों की स्थापना के लिए तथा बीज आपूर्ति के लिए हैचरियों की स्थापना करने की योजनाओं को सरकार प्रोत्साहित करेगी। इस उभरते हुए क्षेत्र की संस्थागत और वाणिज्यिक आवश्यकताओं जिसमें पट्टा अधिकार, नीतियां, स्थानिक योजना, प्रौद्योगिकी आवकों जैसे कृषिकर्म, बीज, आहार, स्वास्थ्य प्रबंधन, पर्यावरणीय तथा सामाजिक प्रभाव, मैरीकल्चर के लिए मछुआरों तथा उद्यमकर्ताओं का क्षमता निर्माण और बाजार मूल्य शृंखलाओं का विकास आदि शामिल हैं, का समाधान तटीय राज्यों/ संघ राज्य क्षेत्रों तथा संबंधित पणधारियों के परामर्श से किया जाएगा। छोटे मत्स्यन समुदायों, मछुआरा समूहों, मत्स्य सहकारिताओं अथवा सरकारी संगठनों की भागीदारी को विशेष रूप से बढ़ावा और सहयोग दिया जायेगा।

द्वीप मात्स्यिकी

28.0 अंडमान और निकोबार तथा लक्षद्वीप समूह में टूना जैसी लाभप्रद प्रजातियां, ग्रूपर्स, स्नेकर्स एवं कोरल मछलियों जैसे वाणिज्यिक मूल्य की प्रजातियां तथा अन्य महत्वपूर्ण प्रजातियां मात्स्यिकी संसाधन के रूप में मौजूद हैं। भौगोलिक रूप से दूर स्थित होने के कारण यहाँ के मात्स्यिकी विकास में बाधा पहुंची है, तथा मात्स्यिकी का इष्टतम उपयोग नहीं हो पाया है। सरकार मात्स्यिकी संसाधनों के धारणीय उपयोग, मैरीकल्चर, स्थानीय मछुआरों की क्षमता विकास हेतु समर्पित कार्यक्रम कार्यान्वित करेगी, और संस्थागत पोस्ट-हार्वेस्ट सहायता, जो दोहन किए गए संसाधनों को मुख्य बाजारों तक और समुद्री खाद्य को निर्यात गंतव्यों तक पहुंचने तक अनुमति देता है, इन सब को बढ़ावा देगी।

पोस्ट-हार्वेस्ट और प्रसंस्करण

29.0 देश में मछली उतारने के केंद्रों, मत्स्यन बंदरगाहों और मछली बाजारों की साफ-सफाई और स्वच्छता की स्थिति में सुधार करने की आवश्यकता है, ताकि उन्हें अन्तर्राष्ट्रीय मानकों के अनुसार बनाया जा सके। पणधारियों को जागरूक करने के लिए सरकार कार्यक्रम शुरू करेगी ताकि वे मत्स्यन बंदरगाहों में साफ सफाई तथा स्वच्छता का रखरखाव कर सकें। साथ ही राज्य सरकारों और पत्तनन्यास प्राधिकरणों को, सम्बंधित मुद्दों के समाधान के लिए उपयुक्त प्रणाली विकसित करने, और बंदरगाह में सुविधाओं के दैनिक प्रबंधन आदि के लिए, पणधारियों द्वारा चालित प्रबंधन समितियों के लिए प्रोत्साहित किया जायेगा। इस प्रकार सुरक्षित और स्वच्छ समुद्री खाद्य की उपलब्धता सुनिश्चित हो सकेगी। पोस्ट-हार्वेस्ट मात्स्यिकी में भारत की क्षमता और प्रशिक्षण आवश्यकताओं की जरूरत को पूरा करने के लिए विशेष रूप से प्रयास किये जायेंगे।

30.0 पर्याप्त अवसंरचना सुविधायें, समुद्री मात्स्यिकी मूल्य-शृंखला के साथ ही अनेक एम.सी.एस कार्यों के लिए भी महत्वपूर्ण होती हैं। आवश्यकताओं के व्यापक पुनर्मूल्यांकन के आधार पर और तटीय पारिस्थितिकी तंत्र पर न्यूनतम प्रभाव सुनिश्चित करते हुए, सरकार अतिरिक्त अवसंरचना सुविधाएं तैयार करेगी, जिसमें बंदरगाह स्थित मछली ड्रेसिंग केंद्र और मछली प्रसंस्करण सम्पदा शामिल हैं। इस प्रकार की अवसंरचना सुविधाओं की स्थापना में पणधारियों के प्रत्यक्ष लगाव को प्रोत्साहित करने के लिए, तथा आवश्यकताओं की शीघ्र पूर्ति को सुनिश्चित करने के लिए, सार्वजनिक निजी सहभागिता सहित मछुआरा सहकारिता को प्रोत्साहित किया जाएगा।

31.0 वर्तमान में यह अनुमान लगाया गया है कि मछली हार्वेस्ट का लगभग 15% भाग पोस्ट-हार्वेस्ट क्रियाओं में बर्बाद हो जाता है, जो प्राकृतिक सम्पदा की बहुत बड़ी क्षति है, जिसका और बहेतर ढंग से उपयोग किया जा सकता था। सरकार बेहतर ऑन-बोर्ड मछली हैडलिंग के माध्यम से पोस्ट-हार्वेस्ट क्षति का संज्ञान लेगी ताकि विशेषकर अधिक मूल्य के मछली और उनके उत्पाद से उनकी उत्तम गुणवत्ता और मूल्य मिले सके। यह महत्वपूर्ण है कि इससे मछली सम्पदा की हानि कम होगी, जिससे कि मानव उपभोग के लिए अधिक मछली उपलब्ध हो सकेगी। बाई-कैच को कम करने की दिशा में अल्पिकरण के उपाय को संगत उपकरणों, गियर और अन्य प्रबंधन उपायों के माध्यम से प्रोत्साहित किया जाएगा।

32.0 मत्स्य आहार उद्योग में निम्न मूल्य वाली मछली का प्रयोग एक चिंता का विषय बन रहा है, क्योंकि इससे निम्न मूल्य की मछलियों की ओवर फिशिंग और बाई-कैच में वृद्धि हो सकती है, इस प्रकार समुद्री पारिस्थितिकी प्रणाली को भी क्षति पहुंच सकती है। देश के कुछ भागों में मछली आहार संयंत्रों के विस्तार तथा लघु पैलाजिग्स की जबरदस्त मांग ने अति-मत्स्यन को बढ़ावा दिया है, जिसके परिणामस्वरूप देश के कुछ भागों में पैलाजिक मत्स्य-स्टॉक में कमी आई है। सरकार मछली आहार संयंत्रों के प्रसार को नियंत्रित करने तथा इसके विनियमन करने संबंधी कदमों को उठाकर इस मुद्दे का समाधान करेगी।

व्यापार

33.0 भारतीय समुद्री खाद्य का वैश्विक समुद्री खाद्य व्यापार में महत्वपूर्ण स्थान है। पिछली अवधि में भारत से निर्यात किए जाने वाले समुद्री खाद्यों में मात्रात्मक तथा गुणात्मक दोनों रूपों में वृद्धि हुई है। इन विकासों के होते हुए भी, भारतीय समुद्री खाद्यों को अभी अपना ईष्टतम मूल्य प्राप्त करना शेष है, ऐसा प्रथमतः समुद्री उत्पादों के मूल्य संवर्द्धन के निम्न स्तर के कारण तथा दूसरा, उत्पाद-ब्रांडिंग के खराब स्तर के चतले हैं। इन कमजोरियों से निपटने के लिए उत्पादों के विविधीकरण का समर्थन किया जायेगा, मूल्यवर्द्धन और उत्पाद ब्रांडिंग में सुधार किया जायेगा तथा विश्व के विभिन्न भागों में, नये बाजारों तक पहुंच को बढ़ाया जायेगा। इसी प्रकार से घरेलू सेक्टर में मछली और मत्स्य-उत्पादों की उपभोक्ताओं में बढ़ती मांग के साथ यह सुनिश्चित करने के लिए की उपभोक्ता को अच्छी किस्म की मछली प्राप्त हो सके, सरकार मौजूदा अवसंरचना, मूल्य शृंखला और घरेलू मछली विपणन के अन्य महत्वपूर्ण गुणों की समीक्षा करेगी।

34.0 मात्स्यिकी उत्पाद अनुमार्णियता (ट्रेसेबिलिटी) तथा चेन ऑफ कस्टडी को संबोधित किया जायेगा क्योंकि इनका वैश्विक समुद्री खाद्य व्यापार में महत्वपूर्ण स्थान है। इसके अलावा, समुद्री खाद्य उत्पादों को अन्तर्राष्ट्रीय मांग और मानकों के अनुरूप विविधीकृत किए जायेंगे, ताकि मात्स्यिकी उत्पादों के अधिकतम मूल्य प्राप्त किये जा सकें। इसके साथ ही घरेलू विपणन मूल्य शृंखला में सुधार करने के लिए मात्स्यिकी उत्पादों को भारतीय खाद्य सुरक्षा और मानक प्राधिकरण (एफ.एस.एस.ए.आई) के मानकों के साथ समेकित किया जायेगा। इस संबंध में सरकार एफ.एस.एस.ए.आई बेंच मार्क को निर्यात निरीक्षण परिषद (ई.आई.सी) के साथ तालमेल करने पर विचार करेगी।

35.0 समुद्री खाद्य की अनुमार्णियता (ट्रेसेबिलिटी) तथा इको-लेबलिंग मात्स्यिकी की पर्यावरणीय स्थिरता सुनिश्चित करने के लिए धीरे-धीरे बाजार-आधारित हस्तक्षेप के रूप में महत्व प्राप्त कर रहे हैं। यूरोपीय संघ (ईयू) के बाजारों में निर्यात किए

जाने वाले सभी समुद्री खाद्य पदार्थों के लिए उन समुद्री खाद्य पदार्थों की ट्रेसेबिलिटी को दर्शाया जाना एक महत्वपूर्ण आवश्यकता है। ऐसी संभावना है कि आने वाले वर्षों में आयात करने वाले और अधिक देशों और बाजारों में केवल प्रमाणित और लेबल युक्त समुद्री खाद्य पदार्थों की मांग की जाएगी। सरकार प्रमुख भारतीय मात्स्यिकी के पर्यावरण-लेबलिंग को प्रोत्साहित करने के लिए एक सक्षम माहौल तैयार करेगी जो मत्स्य-स्टॉक, समुद्री खाद्य उद्योग और मछुआरों को लाभ पहुंचायेगा।

36.0 मछली उतारने के केंद्रों (लैंडिंग केंद्रों) और खुदरा बाजारों में मछली बिक्री मूल्य के बीच का व्यापक अंतर यह इंगित करता है कि बिचौलिये कीमतों का पर्याप्त हिस्सा ले लेते हैं। यहां पर क्रेडिट बंधन से संबंधित मुद्दे भी होते हैं। सरकार आवश्यक व्यवधानों को कम करने के लिए कदम उठाएगी ताकि मछुआरों की बिचौलियों और निजी वित्तपोषकों पर निर्भरता कम हो सके। मछुआरों द्वारा और / अथवा राज्य द्वारा चालित बंदरगाह आधारित सहकारिताओं के माध्यम से बाजारों को सुदृढ़ करने के लिए प्रयास किया जाएगा।

समुद्री पर्यावरण तथा प्रदूषण

37.0 भारत में समुद्री पर्यावरण प्रदूषण के कारण दबाव में है तथा शायद मछली स्टॉक में कमी का एक कारण है। इसके अलावा, भूमि पर प्रवाहित अपशिष्ट का खराब उपचार, समुद्र में प्लास्टिक (विशेष रूप से माइक्रो-प्लास्टिक कण) तथा छद्म मत्स्यन (घोस्ट फिशिंग) जैसे कारक भी मछली स्टॉक को समान रूप से प्रभावित कर रहे हैं। सरकार, प्रदूषण नियंत्रण को नियंत्रित करने के लिए नियामक तंत्र को मजबूत करेगी ताकि यह सुनिश्चित हो सके कि जमीन और समुद्र आधारित प्रदूषण प्रभावी रूप से नियंत्रित हो और पारिस्थितिक तंत्र की निगरानी की जा सके। मछुआरे यह सुनिश्चित करने के लिए कि मत्स्य-नौकाएं समुद्री प्रदूषण में किसी भी रूप में योगदान न दें, इस हेतु मत्स्य-नौकाओं की डिज़ाइन में अपेक्षित उपाय समेत सभी प्रयास करेंगे।

38.0 बंदरगाहों का विकास कभी-कभी कटाव और भारतीय तटों में क्षरण की वृद्धि को बढ़ावा देता है। ऐसे विकास तटीय संरचना में परिवर्तन ला सकते हैं, जिसका प्रभाव तटरेखा, पारिस्थितिकी और मात्स्यिकी पर पड़ सकता है। सरकार तटरेखा में अवसंरचना विकास पर विचार करते समय इन पहलुओं के समाधान हेतु उचित तंत्र स्थापित करने पर विचार करेगी और यह सुनिश्चित करेगी कि सभी पणधारियों के हितों का उचित रूप से समाधान किया जाये।

39.0 यह सर्वविदित है कि तटवर्ती और तट के पास टेल-एन्ड वाले पारिस्थितिक तंत्र होते हैं, और इनमें पाए जाने वाले समुद्री मत्स्य-संसाधन मीठे पानी और तलछट के प्रवाह में लाये जाने वाले पोषक तत्वों पर अत्यधिक निर्भर होते हैं। हालांकि, ये जल निकाय मानवजनित दबावों के अधीन हैं जिसके परिणामस्वरूप पर्यावरण की गुणवत्ता में गिरावट और ताजे पानी के प्रवाह में कमी आती है जो कि कई महत्वपूर्ण समुद्री मत्स्य संसाधनों के स्टॉक्स को प्रभावित करता है, विशेष रूप से उच्च मूल्य वाले झींगे, जो इन अंतर्देशीय तटीय जल में अपने जीवन चक्र का एक चरण पूरा करते हैं। इसलिए इस प्रकार के टेल- इंड पारिस्थितिकी के पर्यावरणीय समरूपता की रक्षा के लिए सरकार लैंडस्केप से सागर-स्कैप दृष्टिकोण पर विचार करेगी जहां अंतर्देशीय जल संसाधनों का सही प्रबंधन भी तटीय जल के स्वास्थ्य और कल्याण को सुनिश्चित करेगा।

40.0 धारणीय मात्स्यिकी के विकास का संवर्धन करते हुए समुद्री पर्यावरण के पारिस्थितिकी समेकन को बनाए रखने के लिए सरकार जोर देगी, ताकि यह सुनिश्चित हो सके कि संकटापन्न, जोखिम अथवा संरक्षित समुद्री प्रजातियों पर प्रतिकूल प्रभाव न पड़े। मैंग्रूव, समुद्री-घास (सी-वीड), और मूंगा चट्टाने तटीय समुद्री पारिस्थितिक तंत्र का आंतरिक भाग हैं और कई मछली प्रजातियों तथा समुद्री स्तनधारियों जैसे समुद्री गाय (डुगोंग) के लिए आवास समेत पारिस्थितिक सेवाओं के विस्तार को उपलब्ध कराता है। ऐसी पारिस्थितिक प्रणाली की किसी भी प्रकार की अनुचित मानवीय प्रभाव से रक्षा की जाएगी।

जलवायु परिवर्तन (अनुकूलन और नई पहलें)

41.0 जलवायु परिवर्तन सर्वाधिक बड़ी चुनौतियों में से एक है, जिसका मात्स्यिकी क्षेत्र सामना कर रहा है, जिसके लिए समयबद्ध अनुकूलन और प्रबंधन योजनाएं आवश्यक हैं। समुद्री मात्स्यिकी पर जलवायु परिवर्तन का प्रभाव भारतीय अनन्य आर्थिक क्षेत्र और चारों ओर खुले समुद्र में पर्याप्त रूप से दिखाई दे रहा है। ऐसे प्रभाव कुछ प्रजातियों के मत्स्यन में स्पष्ट परिवर्तन लाये हैं और मछुआरों को मत्स्यन परिचालन में परिवर्तन करने को मजबूर किया है। जलवायु परिवर्तन को कुछ मछली प्रजातियों के कुछ स्टॉक की प्रचुरता में परिवर्तन के लिए कारणों में से एक कारण माना जाता है। सरकार, समयबद्ध तरीके से अनुकूलन विकल्प लागू करने के अलावा मत्स्यन और मछली पकड़ने वाले समुदायों पर जलवायु परिवर्तन के प्रभावों पर केंद्रित अध्ययन को प्रोत्साहित करेगी। जलवायु परिवर्तन पर अंतरराष्ट्रीय प्रतिबद्धता के भाग के रूप में, मत्स्यन और

मत्स्यन संबंधी क्रियाकलापों से उत्सर्जित ग्रीन हाउस गैसों (जीएचजी) को कम करते हुए हरित मात्स्यिकी के विचार को बढ़ावा दिया जायेगा।

मछुआरा कल्याण सामाजिक सुरक्षा नेट्स और संस्थागत क्रेडिट्स

42.0 सरकार मौजूदा कल्याणकारी उपायों को जारी रखने के साथ ही प्रत्यक्ष लाभ हस्तांतरण योजना (डीबीटीएस) के माध्यम से देश में मछुआरा समुदाय को पर्याप्त सुरक्षा कवर प्रदान करने और उन्हें मजबूत करने पर विचार करेगी। इस प्रकार के उपायों में मछुआरों को समुदाय कल्याण, आवास और अन्य सुविधाएं भी शामिल होगी।

43.0 आंधी का प्रवाह, चक्रवात, लहरें आदि जैसी उग्र प्रकृति की मौसम घटनाओं को प्राकृतिक आपदाओं के रूप में माना जाएगा। इसी रूप में, मानव निर्मित आपदा जैसे ऑयल-स्पिल को भी आपदाओं के रूप में माना जाएगा और प्राभावित मछुआरा समुदायों को उनकी आजीविका वापस दिलाने के लिए व्यवहारिक सहयोग/सहायता उपलब्ध कराई जाएगी। समुद्र में मछुआरों की मृत्यु हो जाने के मामले में, मुआवजे की प्रक्रिया को आसान बनाया जाएगा ताकि प्रभावित मछुआरा परिवार को तर्कसंगत समय में इसका लाभ मिल सकें।

44.0 मत्स्यन प्रतिबंध का मछली स्टॉक के स्वास्थ्य पर सकारात्मक प्रभावों के लिए हितधारकों के एक बड़े खंड ने आवाज उठाई है। कुछ तटीय राज्यों ने भी पणधारियों के ही जैसे प्रतिबंध अवधि को वर्तमान में 61 दिनों की अवधि से बढ़ाने पर जोर दिया है। प्रतिबंध के लाभकारी प्रभाव और पणधारियों के अच्छे सहयोग को विचार में रखते हुए, सरकार मछुआरों को मत्स्यन प्रतिबंध अवधि के दौरान उपलब्ध वर्तमान मुआवजा पैकेज को सुदृढ़ करेगी। यह न केवल पणधारियों को संसाधनों के संरक्षण में संलग्नता को बढ़ायेगा बल्कि मछली स्टॉक, जिनमें कमी/क्षरण के लक्षण दिखाई दे रहे हैं, उनके पुर्नउद्धार और पुर्न स्थापना में भी मदद करेगा।

45.0 मात्स्यिकी सहकारी समितियों की संस्थाओं ने हाल के वर्षों में गति प्राप्त की है, और कुछ राज्यों/संघ शासित प्रदेशों में, इस तरह की सहकारिताओं ने अपनी सफलता का प्रदर्शन भी किया है। मात्स्यिकी क्षेत्र में सहकारिता समुदाय और बेहतर ढंग से समुदाय की सहायता कर सकता है यदि वे बेहतर कारोबार मॉडल अपनाएं, जिसमें हार्वेस्ट और पोस्ट-हार्वेस्ट दोनों कार्य शामिल हैं। देश में मात्स्यिकी सहकारिता को, जहां कहीं आवश्यक हो, कौशल विकास और तकनीकी तथा वित्तीय सहायता के माध्यम से सुकर और सुदृढीकृत किया जाएगा। सहकारिताओं को मात्स्यिकी और जलवायु संबंधी मुद्दों के समाधान हेतु विज्ञान आधारित दृष्टिकोण को अपनाने के लिए प्रोत्साहित और सुदृढ किया जाएगा।

46.0 मछुआरों द्वारा मत्स्यन उपकरणों और नौकाओं की खरीद हेतु संस्थागत ऋण की उपलब्धता प्रायः बहुत कठिन होती है, और लाभ की जोखिम प्रवृत्ति के कारण बहुत से मछुआरे निजी ऋणदाताओं और बिचौलियों के ऋण-जाल में फंस जाते हैं। इस स्थिति को समाप्त करने के लिए सरकार मछुआरों को उदार नियम एवं शर्तों पर लोक ऋण उपलब्ध कराने पर विचार करेगी। इस दिशा में, राष्ट्रीय कृषि एवं ग्रामीण विकास बैंक (नाबार्ड) की भूमिका महत्वपूर्ण है, जो मछुआरों की आवश्यकताओं पर विचार करेगा।

47.0 सरकार, मछली पकड़ने के अधिक आर्थिक और कुशल तरीके से मत्स्यन में आगे बढ़ने के लिए परंपरागत मछुआरों के प्रशिक्षण, क्षमता निर्माण और तकनीकी कौशल के उन्नयन के लिए कदम उठाएगी।

लिंग समानता

48.0 महिलाओं का योगदान मात्स्यिकी के क्षेत्र के पोस्ट-हार्वेस्ट कार्यकलापों में कुल कार्यबल का 66 प्रतिशत से अधिक है। परिवार को चलाने के अलावा महिलाएं फुटकर मछली बेचने, मछली सूखाने तथा अन्य मूल्यवर्द्धन कार्यकलापों में महिला स्वयं सहायता समूहों के जरिए महत्वपूर्ण भूमिका निभाती हैं। सरकार महिलाओं द्वारा निभाई जाने वाली भूमिकाओं में अपने योगदान को जारी रखेगी और महिलाओं को सहकारिता में भागदर बनकर, महिला अनुकूल वित्तीय सहायता योजनाएं चलाकर, महिलाओं के लिए अच्छी कार्य स्थितियों जिसमें सुरक्षा, साफ-सफाई तथा खुदरा विपणन के लिए परिवहन सुविधाएं शामिल हैं, और साथ ही लघु मत्स्यन, मूल्यसंवर्द्धन क्रियाकलापों और मात्स्यिकी प्रबंधन में सक्रिय भूमिका निभाने के लिए प्रोत्साहित करेगी।

अतिरिक्त / वैकल्पिक आजीविका

49.0 समुद्री मत्स्य-संसाधनों में आ रही कमी को ध्यान में रखते हुए, विशाल मात्रा में फैली हुई तटीय मछुआरा समुदायों के लिए आजीविका के अतिरिक्त / वैकल्पिक स्रोत आवश्यक होंगे। समुद्री मछली पालन (मैरी-कल्चर) तथा पर्यावरण-पर्यटन (इको-टूरिज्म) इस संबंध में महत्वपूर्ण माने गए हैं, और यह दोनों ही आजीविका के अतिरिक्त/ वैकल्पिक स्रोत उपलब्ध कराने की क्षमता रखते हैं। इको-टूरिज्म के रूप में मत्स्यन खेल (गेम-फिशिंग) और कैच, फोटोग्राफ और रिलीज (सी.पी.आर.) विश्व भर में लोकप्रियता प्राप्त कर रहा है। अंडमान और निकोबार द्वीप-समूह और लक्ष्यद्वीप समूह, मुख्य भूमि के कुछ तटों के अलावा ऐसे क्रियाकलापों को प्रोत्साहन हेतु आर्दश स्थल हैं। सरकार उपयुक्त क्षेत्रों में मछुआरों के बीच सी.पी.आर. योजनाओं को प्रोत्साहित करेगी और साथ ही मछुआरों की आजीविका की आवश्यकताओं के साथ तटीय और समुद्री जल से संबंधित पर्यटन योजनाओं के सामंजस्य पर विचार करेगी।

नीली वृद्धि पहल

50.0 मात्स्यिकी क्षेत्र हेतु अपनी रणनीति की पुनर्व्याख्या करते हुए, सरकार मछुआरों और उनके परिवारों के जीवन और आजीविका में सुधार हेतु देश के समुद्री तथा अन्य जलीय संसाधनों से मात्स्यिकी संपदा के सतत उपयोग द्वारा 'नीली क्रांति' (नील क्रांति) पर जोर देगी। 'नीली क्रांति' में नीली वृद्धि पहल के तत्व शामिल होंगे जैसाकि सतत विकास लक्ष्य (एस.डी.जी.) के तहत उद्देश्य निर्धारित किए गए हैं, जिसके लिए भारत प्रतिबद्ध है।

51.0 समुद्री स्थान हेतु बढ़ती मांग को ध्यान में रखते हुए, समुद्री स्थानिक योजना (एम.एस.पी.) की आवश्यकता महत्वपूर्ण है। समुद्र से खनिज और तेल दोहन/उत्खनन की बढ़ती हुई मांग के साथ समुद्री वाणिज्यिक यातायात की बढ़ती मात्रा और रणनीतिक रक्षा उद्देश्यों हेतु कई स्थानों पर प्रतिबंध के कारण, मात्स्यिकी के लिए उपलब्ध स्थान में कमी होती जा रही है। इन समकालीन विकास को ध्यान में रखते हुए, सरकार एम.एस.पी. पर विचार करते हुए यह सुनिश्चित करेगी कि सभी आर्थिक क्रियाकलापों हेतु उन्हें स्थान मिले और इस प्रक्रिया में विवादों में कमी हो।

अंतर्राष्ट्रीय समझौते / व्यवस्थाएं

52.0 भारतीय मात्स्यिकी अब वैश्विक परिदृश्य में स्थापित हो चुकी है। मात्स्यिकी पर वैश्विक एजेंडे का निर्देशन बाध्यकारी और गैर बाध्यकारी उपायों के द्वारा किया जाता है जो मात्स्यिकी और पर्यावरणीय दोनों पहलुओं से संबंधित हैं। ऐसे उपायों और समझौतों पर एक हस्ताक्षरकर्ता होने के नाते भारत को प्रावधानों और समझौतों को इसके अंतर्राष्ट्रीय उद्देश्यों को पूरा करने के लिए कार्यान्वित करने और मात्स्यिकी को धारणीय बनाने की आवश्यकता है, जो अन्यथा क्षेत्र पर प्रभाव डालेगा और बदले में लाखों मछुआरों की आजीविका को प्रभावित करेगा। सरकार अंतरराष्ट्रीय साधनों / व्यवस्थाओं के प्रावधानों का अनुपालन सुनिश्चित करेगी और ऐसी क्षेत्रीय / अंतरराष्ट्रीय निकायों की गतिविधियों में सक्रिय सहभागिता सुनिश्चित करेगी जो मानव जाति की आम विरासत का हिस्सा हैं।

53.0 एफ.ए.ओ. की उत्तरदायी मात्स्यिकी के लिए आचार संहिता (सी.सी.आर.एफ. अथवा कोड) आज वैश्विक मात्स्यिकी क्षेत्र में सर्वाधिक महत्वपूर्ण गैर-बाध्यकारी समझौता है। इसका उद्देश्य वैश्विक और प्रत्यक्षतः एफ.ए.ओ. के सदस्यों और गैर-सदस्यों, मत्स्यन संस्थाओं, सभी प्रकार के संगठनों, मछुआरों, मछली और मछली उत्पादों के प्रसंस्करण और विपणन में संलग्न व्यक्ति-संछेप में, मात्स्यिकी संसाधनों के संरक्षण और मात्स्यिकी के प्रबंधन और विकास से संबंधित प्रत्येक के लिए निर्देशित है। संहिता स्वैच्छिक है, लेकिन संहिता के कुछ निश्चित भाग संयुक्त राष्ट्र के कई सम्मेलनों और समझौतों से, प्रमुख अनुच्छेदों और प्रवधानों को शामिल किये हुए और दर्शाते हैं, जैसाकि पूर्व में उल्लेख किया गया है। संहिता सभी मात्स्यिकी के संरक्षण, प्रबंधन और विकास के लिए लागू सिद्धांतों और मानकों को निर्धारित करती है। सरकार यह सुनिश्चित करेगी कि समुद्री मात्स्यिकी से संबंधित संहिता और इसके सिद्धांत, इसके सभी क्रियाकलापों में भली-भाँति एकीकृत हो।

54.0 वैश्विक समुदाय ने गरीबी निवारण और खाद्य सुरक्षा के लिए लघु मात्स्यिकी को मुख्य योगदानकर्ता के रूप में महत्व को मान्यता दी है, और धारणीय लघु-पैमाने की मात्स्यिकी पर स्वैच्छिक दिशानिर्देशों (वी.जी.-एस.एस.एफ.) के लिए सहमति दी है। वी.जी.-एस.एस.एफ. दिशानिर्देशों का मुख्य उद्देश्य लघु मत्स्यन समुदायों को सशक्त करते हुए मानव अधिकार आधारित दृष्टिकोण के प्रोत्साहन के जरिये खाद्य सुरक्षा और गरीबी निवारण को प्राप्त करना है। सरकार लघु-पैमाने की मात्स्यिकी की जटिलताओं और इस क्षेत्र के अंदरूनी प्रभागों विशेषरूप से जो मत्स्यन जिनकी जीविका में शामिल है, को ध्यान में रखते हुये वीजी-एसएसएफ के प्रावधानों को कार्यान्वयन करने के सभी प्रयास करेगी।

55.0 चूंकि बाध्यकारी और गैर-बाध्यकारी अंतर्राष्ट्रीय उपयोगों में शामिल प्रावधान सामान्यतः एक-दूसरे से पूरक-क्षमता को प्राप्त करते हैं, इसलिए यह आवश्यक है कि इन उपयोगों को अलग-अलग न देखते हुए समेकित रूप से विचार किया जाये। सरकार ऐसे उपयोगों को अधिक संतुलित समझ और इनके बेहतर कार्यान्वयन के लिए पणधारियों और मात्स्यिकी संगठनों के साथ व्यापक विचार-विमर्श को प्रोत्साहित करेगी।

क्षेत्रीय सहयोग

56.0 भारतीय उप-महाद्वीप पश्चिम में अरब सागर और पूर्व में बंगाल की खाड़ी से घिरा हुआ है। ये दोनों समुद्र साथ मिलकर ऊपरी भारतीय महासागर का निर्माण करते हैं। पश्चिमी तट पर, भारत अपनी समुद्री सीमाएं पाकिस्तान और मालदीव के साथ साझा करता है, जबकि पूर्वी तट पर, सीमाएं श्रीलंका, बांग्लादेश, म्यांमार, थाईलैंड और इंडोनेशिया के साथ साझा होती हैं। कुछ मामलों में, यह केवल साझा समुद्री सीमाएं ही नहीं हैं बल्कि साझा-पारिस्थितिकी तंत्र भी हैं, जैसे कि भारत और श्रीलंका के बीच मन्नार की खाड़ी और पाक जलडमरूमध्य; भारत और बांग्लादेश के बीच सुंदरबन; तथा अरब सागर में म्येक (मेरगुई) द्वीपसमूह। अरब सागर और बंगाल की खाड़ी दोनों ही में प्रवासी के साथ-साथ फैले हुए मत्स्य-स्टॉक जैसे टूना और टूना जैसी प्रजातियों, शार्क और स्पेनिश मछली के शरण स्थल भी हैं। ऐसी परिस्थितियां जहां आवश्यक हो, सरकार संसाधनों के प्रबंधन और धारणीय उपयोग में मजबूत क्षेत्रीय सहयोग को प्रोत्साहित करेगी जिसमें जहां आवश्यक हो, प्रजातियों /स्टॉक का संरक्षण भी शामिल है।

57.0 मछुआरा समुदाय की रक्षा और सुरक्षा में आपसी सहयोग भी आवश्यक है, क्योंकि देखा गया है कि ऊपरी भारतीय महासागर, खासतौर पर बंगाल की खाड़ी अत्यधिक प्रतिकूल मौसम की घटनाओं की गवाह रही है, जिसमें प्रत्येक वर्ष बहुत से मछुआरे अपनी जान गंवा देते हैं, अथवा अत्यधिक कठिनाईयों को सहते हैं। साथ ही, द्विपक्षीय प्रबंधन के जरिये समुद्री मात्स्यिकी के क्षेत्र में सहयोग के साथ ही क्षेत्रीय मात्स्यिकी और पर्यावरण निकायों में भागीदारी को और आगे बढ़ाया जायेगा। ऐसे सहयोग साझा संसाधनों और साझा पारिस्थितिकी तंत्र, नीतियों के संगतीकरण और ट्रांस-सीमा संसाधनों के ईष्टतम दोहन के लिए उद्देशित कार्यक्रमों, मानवाधिकारों की सुरक्षा, विशेष रूप से अन्य देशों के जल में चले जाने वाले मछुआरों के हित की रक्षा करेंगे।

58.0 भारतीय मछुआरों की चुनौतीपूर्ण परिस्थितियों में कार्य करने की क्षमता, परिश्रमी स्वभाव और दक्षता को अन्य देशों में व्यापक रूप से मान्यता प्राप्त है। परिणामस्वरूप, भारत से अधिक से अधिक मछुआरे अब अन्य देशों के मत्स्यन बेड़े में रोजगार तलाश रहे हैं। बहुत से अवसरों पर भारतीय मछुआरों को अन्य देशों के ई.ई.जेड. में मत्स्यन करते समय पड़ोसी देशों में पकड़ लिया जाता है, जो सरकार के लिए सामान्य रूप से उनकी रिहाई को सुरक्षित करने को कठिन बना देता है। सरकार यह सुनिश्चित करेगी कि जो मछुआरे अन्य देशों में मात्स्यिकी क्षेत्र में रोजगार पाने के इच्छुक हैं उनके पास पर्याप्त कौशल और दूसरे समुद्र का ज्ञान हो तथा वे आई.एल.ओ. सम्मेलन 188 के आधार पर औपचारिक सरकारी अनुमोदन के जरिये जाएँ।

शासन और संस्थागत पहलू

59.0 समुद्री मात्स्यिकी क्षेत्र का प्रबंधन कई संस्थानों जैसे कि तटीय राज्य/संघ राज्य क्षेत्र की सरकारों (मात्स्यिकी विभाग), केन्द्र सरकार (पशुपालन, डेयरी एवं मत्स्यपालन विभाग, वाणिज्य एवं उद्योग मंत्रालय, तट रक्षक आदि) और वैज्ञानिक निकायों के जरिये किया जाता है। इस बहुलवादी प्रशासनिक संरचना में एक तरफ कृषि और किसान कल्याण मंत्रालय और तटीय राज्यों / संघ शासित प्रदेशों के बीच तथा दूसरी तरफ केंद्र सरकार के विभिन्न मंत्रालयों / विभागों के बीच मजबूत समन्वय को आवश्यक बनाता है। इसके अलावा, तटीय राज्यों/संघ राज्य क्षेत्रों के बीच समान सहयोग भी यह सुनिश्चित करने के लिए आवश्यक होगा कि मात्स्यिकी का धारणीय रूप से दोहन हो। इस संबंध में, सरकार सभी संबंधित एजेंसियों के बीच बेहतर समन्वय बनाने के लिए एक प्रणाली की स्थापना पर विचार करेगी।

60.0 भारत में समुद्री मात्स्यिकी व्यवहार और संसाधन दोहन में निरंतर परिवर्तनों के साथ गतिशील है। समुद्री मात्स्यिकी विनियमन अधिनियम (एम.एफ.आर.ए.) 1980 से अस्तित्व में आये थे तथा कुछ राज्यों/संघ राज्य क्षेत्रों को छोड़कर, एम.एफ.आर.ए. मध्य 1990 में ये लागू हो गए थे। इस तथ्य को ध्यान में रखते हुए कि अधिकांश एम.एफ.आर.ए. महत्वपूर्ण

अंतर्राष्ट्रीय समझौतों/व्यवस्थाओं (जैसे कि 1982 यू.एन.सी.एल.ओ.एस., 1992 यू.एन.एफ.एस.ए., 1995 सी.सी.आर.एफ. आदि) को अपनाने से पूर्व में ही अपना लिए गये थे, सरकार मौजूदा एम.एफ.आर.ए. में मात्स्यिकी के प्रबंधन हेतु मौजूदा नियमों और विनियमों को अद्यतन करने पर विचार करेगी, और साथ ही अंतर्राष्ट्रीय उपायों/व्यवस्थाओं के साथ यह सुनिश्चित करने की लिए संबद्ध करेगी कि वे मात्स्यिकी प्रबंधन के सभी पहलुओं को कवर करते हों। इसे तटीय राज्यों/संघ राज्य क्षेत्रों के विचारार्थ हेतु मॉडल बिल तैयार करके किया जाएगा।

61.0 केन्द्र सरकार ई.ई.जेड. अर्थात् 12 से 200 नॉटिकल मील के क्षेत्र में मात्स्यिकी के नियंत्रण और विनियमन के लिए उत्तरदायी है। ई.ई.जेड. में उपयुक्त कानून के साथ मात्स्यिकी के विनियम की आवश्यकता है। सरकार इस क्षेत्र में मात्स्यिकी के विकास और प्रबंधन के लिए ऐसे कानून को लाने के लिए कदम उठायेगी।

भविष्य का रास्ता

62.0 एन.पी.एम.एफ., 2017 के द्वारा अगले एक दशक के लिए समुद्री मात्स्यिकी क्षेत्र की बहु-आयामी और बढ़ती आवश्यकताओं को पूरा करने की उम्मीद है। यह नीति संपूर्ण है तथा इस विविध आर्थिक क्रियाकलापों के सभी खंडों की आवश्यकताओं का व्यापक रूप से समाधान करेगी। एन.पी.एम.एफ., 2017 का एक 'रोडमैप' एक होगा जो नीति में निहित प्रत्येक सिफारिश के तहत कार्य बिंदु (एक्शन पॉइंट) निर्दिष्ट करेगा। इन एक्शन पॉइंटों को कार्यान्वयन के लिए समयसीमा, कार्य के लिए जिम्मेदार एजेंसियों और कार्यान्वयन के लिए आवश्यक धनराशि के संभावित स्रोतों के साथ आगे और विस्तारित किया जाएगा। 'कार्यान्वयन योजना' में एक 'निगरानी और मूल्यांकन' अनुभाग भी होगा जो कार्यान्वयन की समयबद्धता और प्रभावकारिता को संबोधित करेगा। ऐसी आशा है कि इस नीति के कार्यान्वयन के माध्यम से, भारत में समुद्री मात्स्यिकी क्षेत्र एक स्थायी और अच्छी तरह से प्रबंधित इकाई बन कर उभरेगा, जिससे मानव उपभोग के लिए उत्पादन का समुचित उपयोग बढ़ेगा; रोजगार, लिंग समानता और आजीविका; इकटि और समानता; खाद्य सुरक्षा और पोषण के प्रावधान से इस क्षेत्र में धन और समृद्धि का सृजन होगा।

आदित्य कुमार जोशी, संयुक्त सचिव

MINISTRY OF AGRICULTURE AND FARMERS WELFARE

(Department of Animal Husbandry, Dairying and Fisheries)

NOTIFICATION

New Delhi, the 28th April, 2017

National Policy on Marine Fisheries, 2017

F. No. 21001/05/2014-FY (Ind) Vol. V.—Preamble

1.0 The overarching goal of the National Policy on Marine Fisheries, 2017 (NPMF, 2017) is to ensure the health and ecological integrity of the marine living resources of India's Exclusive Economic Zone (EEZ) through sustainable harvests for the benefit of present and future generations of the nation. The overall strategy of the NPMF, 2017 is based on seven pillars, namely sustainable development, socio-economic upliftment of fishers, principle of subsidiarity, partnership, inter-generational equity, gender justice and precautionary approach. These seven pillars will guide the actions of various stakeholders in meeting the vision and mission set for the marine fisheries sector of the country. While fishers will be at the core of this Policy, actions will also be guided by the 'Public Trust Doctrine'.

Noting that India has an EEZ of 2.02 million sq.km, a long coastline of 8,118 km and two major groups of Islands, with rich and diverse marine living resources;

Recognizing that the marine fisheries wealth is estimated at an annual harvestable potential of 4.412 million metric tonnes;

Considering that an estimated 4.0 million people depend for their livelihoods on the marine fisheries resources;

Acknowledging that the marine fisheries contribute to an economic wealth valued at about Rs. 65,000 crores;

Recognizing further that the marine fisheries are an important source of food, nutrition, employment and income generation;

Realising that the marine fisheries wealth contributes significantly to the export earnings of the country and balance of trade;

Observing that the marine fisheries of the country are highly diverse but predominantly comprising small-scale and artisanal fishers;

Observing further that the marine fisheries sector is serviced by a range of other stakeholders, including governmental and non-governmental agencies;

Accepting that the marine living resources of the nation offer potential for enhancement of production through sustainable means, including mariculture;

Knowing that the marine fisheries resources are not in-exhaustive and subject to over-exploitation;

Realising further that such over-exploitation would lead to loss of biodiversity and reduced availability of resources for our future generations;

Bearing in mind that the nation is committed to international agreements and arrangements for sustainable use of the marine living resources;

The NPMF, 2017 is based on the following vision, mission and strategy for the marine fisheries sector of the country:

Vision

“A healthy and vibrant marine fisheries sector that meets the needs of the present and future generations.”

Mission

“While keeping sustainability of the resources at the core of all actions, the policy framework will meet the national, social and economic goals, livelihood sustainability and socio-economic upliftment of the fisher community and is intended to guide the coordination and management of marine fisheries in the country during the next ten years.”

Strategy

Marine Fisheries Sector of India – A Profile

2.0 The potential of fisheries sector in general and marine fisheries sub-sector in particular was recognized quite early in the Indian development planning and since then considerable amount of public and private efforts have been channeled into the sector for developing it as an instrument of growth. Apart from the prime consideration of securing food and nutritional requirements of the population, fisheries sector plays an important role in trade and commerce, and in the process promotes employment and livelihoods of coastal communities.

3.0 Commencing as a purely traditional activity, fisheries have now transformed to a commercial enterprise. After declaration of the EEZ in 1976, the sea area available to India is estimated at 2.02 million sq. km. With sovereign rights on the EEZ, India has also acquired the responsibility to conserve, develop and optimally harness the marine living resources within this area. In 2011, a Working Group (WG) set up by the Government of India, estimated the potential yield from the Indian EEZ as 4.412 million metric tonnes (mmt). This estimate is 12.2 percent higher than the previous estimate made in the year 2000 (3.934 mmt). Pelagic resources such as oil sardine, ribbon fish, Indian mackerel form 2.128 mmt (48.2%); demersal resources such as penaeid and non-penaeid shrimps, cephalopods, perches, croakers comprise 2.067 mmt (46.8%) and oceanic resources mainly comprising yellowfin tuna, skipjack tuna, bigeye tuna, billfishes, pelagic sharks, barracuda, dolphin fish and wahoo constitute 0.217 mmt (4.9%). Depth-wise distribution of the estimated potential yield from the Indian EEZ is estimated as 3.821 mmt up to 100 meter (m) depth (86.6%), 0.259 mmt from depths between 100-200 m (5.8%) and 0.115 mmt from depths between 200-500 m (2.6%). The remaining 0.217 mmt (4.9%) is from the oceanic waters. The average marine fish catch during the last 4 years (2012-13 to 2015-16) is 3.499 mmt, whereas in 2015-16 it was 3.583 mmt (P). While the fisheries resources from the near-shore waters are fully utilized, the deep sea and oceanic waters offer opportunities of increasing the catch.

4.0 According to the National Marine Fisheries Census, 2010, the marine fishermen population in India is estimated at 4.0 million, of which 0.99 million are active fishermen. Among the active fishermen, 33 per cent are employed in the mechanised sector, 62 per cent in the motorised sector and 5 percent in the artisanal sector. Of the total marine fish production, 75 per cent comes from the mechanised sector, 23 per cent from the motorised sector and 2 per cent from the artisanal sector. The pattern of marine fish landings in India during the past fifty years clearly reveals that contribution

by the artisanal sector to the total production was significant up to the sixties. With popularisation and consequent expansion of mechanised fishing during the subsequent periods, along with the motorisation of artisanal crafts, contributions by the artisanal sector declined considerably over the years. Mechanised trawl fishery now forms the most important fishing method and contributes about 55 per cent to the total marine fish production in the country.

5.0 In terms of revenue, some of the high value species such as tunas that occur in the oceanic waters are yet to be optimally harvested. Harnessing the full potential of marine resources will ensure sustainable benefits for the country and the people. As the sector is quite dynamic, there is a need to streamline the policies and programmes to take advantage of the present sum of technical knowledge and the state of resources. In this direction, the NPMF, 2017 makes the following recommendations:

Fisheries Management

6.0 A WG set up by the Government in 2011 for assessment of fish stocks in the Indian EEZ indicated overcapacity in territorial waters with respect to different categories of mechanised fishing vessels for all maritime States/Union Territories (UTs) and suggested an optimum fleet size for consideration of the Government. The Government will consider the suggestions contained in the Report of the WG and will develop strategies to reduce overcapacity and implement the same in a phased manner in consultation with the States/UTs and other concerned stakeholders.

7.0 The average marine fish harvests from the seas around India are close to the current potential yield estimates, indicating optimum harvesting of the resources within 200 meter depth. On the other hand, the oceanic waters still contain an untapped potential of high value resources like tuna, tuna-like species, myctophids and oceanic squids. However, considering the wide confidence intervals of catch and potential yield estimates, there is a need for taking a precautionary approach in line with the global standards regarding wild fish harvests. With regard to inshore waters, the Government will lay emphasis on maintaining the harvest at about the current levels of Maximum Sustainable Yield (MSY), with sustainability and equity as the key principles.

8.0 To realize the full potential of marine fisheries, focus will be directed towards fishing effort management; fleet-size optimization; mainstreaming biodiversity conservation in production processes; species-specific and area-specific management plans, including conservation of Ecologically and Biologically Significant Areas (EBSAs) and Vulnerable Marine Ecosystems (VMEs); protection of iconic and endangered and threatened (ETP) species; spatial and temporal measures for sustainable utilization of resources; and creation of fish refugia through consultative processes. Simultaneously, the Government will also undertake review and periodic evaluation of the existing marine protected areas (MPAs) and for providing legislative support to ensure that tenure rights of the traditional fishermen are secured and their livelihoods not impacted by such conservation measures.

9.0 Management of fisheries will follow an integrated approach, blending traditional knowledge and science with business principles and effective engagement of both primary stakeholders, and also those engaged in ancillary activities to ensure that fisheries are ecologically and economically sustainable. Fisheries governance will be improved to address conflict resolution between the traditional and mechanised sectors, emerging issues of common concern and to facilitate promotion of national capacity building by encouraging coherent management approaches and better collaboration.

10.0 Knowledge management will be an approach to foster quick and easy dissemination and availability of information on key attributes of marine fisheries sector, such as resource abundance and distribution; real-time resource maps; productivity assessments; real-time Potential Fishing Zone (PFZ) advisories; and weather forecasts for the benefit of fishers. The use of Information Technology (IT) and Space Technology (ST) will be put to optimum use for harnessing the benefits in support of the fisher community.

11.0 Spatial and temporal closures have helped in sustaining marine fish wealth of the country. To ensure that these management measures effectively improve the livelihoods of fishers, periodic reviews will be conducted, taking into account the best scientific information available, including a precautionary approach, and with due engagement of fishers and other concerned stakeholders.

12.0 The marine fish resources are not inexhaustible, and uncontrolled harvests will lead to depletion of resources, as experienced in many cases. The Government will take appropriate steps in consultation with concerned scientific institutions and fishers in optimizing fishing effort and implementing measures that will help in sustaining the resources. These measures will *inter-alia* include, input and output controls such as fleet size, fishing days, area of operation, engine horsepower, gear size, MSY, minimum mesh size, minimum legal size, diverting effort to areas which are relatively less harvested, fleet plans, and creating fisheries management areas to ensure that resource depletion is contained. The fisheries and related institutions will ensure formulation of rebuilding/recovery plans for those fish stocks that are in depleted or collapsed state. A capacity appraisal framework will be framed for fisheries management.

13.0 Presently, coastal States/UTs have specific areas reserved (based on depth or distance from shore) for traditional fishers where mechanised fishing is not permitted. Such Territorial Use Rights for Fisheries or TURFs have proved to be useful in sustaining the livelihoods of artisanal fishers. The Government will continue to provide such support to

artisanal/traditional fishers and in consultation with user groups, it will further consider increasing the area presently available to traditional fishermen in the territorial waters.

14.0 The Ecosystem Approach to Fisheries Management (EAFM) will be implemented with due consideration to the well-being of all living and non-living constituents of the marine ecosystem and the social attributes of stakeholders. In the same vein, participatory management or co-management in fisheries, which is recognized globally as one of the successful management systems for multi-stakeholder, multi-species and multi-fleet fisheries, will be promoted. Such a co-management system, which could include local, regional, inter-state and national fisheries councils would also play a key role in resolving conflicts among different groups of fishermen. The norms for introducing these management measures will be worked out in consultation with the fisheries research institutions, coastal States/UT Governments, fishers and their associations and other concerned stakeholders in the sector.

15.0 Fishing operations in the 12 - 200 nautical miles (nm) zone of the Indian EEZ have been guided by a set of guidelines issued by the Department of Animal Husbandry, Dairying & Fisheries (DAHD&F), Ministry of Agriculture and Farmers Welfare (MoAFW) from time to time. Based on these guidelines, eligible applicants were provided with Letter of Permit (LOP) to undertake fishing in stipulated areas. Considering that the LOP scheme has not had the expected impact on inclusive development of the deep sea fishing sector, the Government will consider an alternate mechanism for development of this sector and rescind the existing LOP scheme. While ensuring the small-scale character of marine fishery, private investments will be promoted in deep sea fishing and processing to fully harness the potential of marine fishery for inclusive development. Sustainable utilization of the deep sea fisheries resources necessitates an optimum fleet size of modern fishing vessels capable of undertaking extended voyages, and wherever required, support of overseas technology will also be considered for development of the sector. A single window approach integrating all the stakeholders will be adopted to enable capacity building of the Indian fishing fleet for deep sea fishing. Entrepreneurship development, private investment, Public Private Partnership (PPP) and better leveraging of institutional finance for marine fisheries sector will be encouraged. Besides, modalities will be worked out for integration of sea food processing and export sector with the deep sea fishing industry for holistic development of the sector.

16.0 The Government will introduce new scheme(s) for enhancing the skills and capabilities of the traditional fishermen to undertake and popularize deep sea fishing. The scheme(s) will *inter-alia* consider modernisation of existing indigenous deep sea fishing fleet, introduction of new indigenous deep sea fishing vessels through fishermen cooperatives/self-help groups, on-board training and linkages to markets and export. While introducing these mechanisms/schemes, steps will be taken to ensure that such initiatives comply with the international regulations relating to fishing in the EEZ and beyond in the high seas. Utilization of deep sea resources in the EEZ will be reconsidered not only in terms of resources available in the EEZ, but also infrastructure, technical wherewithal for vessel construction, survey and certification, human capacity development and a comprehensive and implementable set of rules and regulations; with a strong Monitoring, Control and Surveillance (MCS) regime, availability of scientific and technical information on commercial fisheries resources, and the best fishing methods with which to target them.

17.0 The Government will develop a holistic resource utilization plan for the EEZ, taking into consideration the requirements of coastal States/UTs. At the same time, coastal States/UTs will also be urged to recognize that the area of EEZ between 12 and 200 nm is a common resource managed by the Union Government and isolated fishing strategies by them may lead to over-exploitation and inter-State/UT conflicts. Keeping this in view, the Union Government and the State Governments/UTs will be acting together to agree upon the management policies and measures for sustainable utilization and management of living resources in the EEZ. Institutional mechanism will be set up and strengthened to reduce and manage inter-State conflicts as well as international conflicts for management of marine fisheries. The Government will prepare and implement integrated coastal and Islands' fisheries development plans, which will help in enhancing the economy of coastal States/UTs and the Islands. Such plans will *inter alia* include framework for sustainable fisheries exploitation, coastal/Island tourism, availability of floating refueling barges, mother carrier vessels and mobile marine ambulances.

18.0 There is also considerable scope to harvest fishery resources of the high seas or in Areas Beyond National Jurisdiction (ABNJ), as done by many other countries such as krill fishing, etc. The Government will promote utilization of fishery resources in the ABNJ by Indian fishing vessels, subject to compliance of relevant provisions in the International Agreements/ Arrangements concerning fisheries in the high seas and with proper monitoring and communication mechanisms to safe guard coastal security and safety of fishermen at sea.

Monitoring, Control and Surveillance

19.0 The existing mechanisms in place for a sound and effective MCS regime for marine fisheries sector need further strengthening. Presently, the Government has an online uniform registration and licensing system (ReALCraft) to register all fishing vessels operating in the marine sector (traditional, motorized, mechanized and non-mechanized). While monitoring of fish catch and effort and control of fishing through registration and licensing is in place, MCS

activities will be further strengthened through greater engagement of the Department of Fisheries (DoF) of the maritime States/UTs, Coastal Marine Police and the Indian Coast Guard (ICG). Strengthening and improvements in MCS will be carried out in a phased manner by introducing chip-based smart registration cards that would include data on registration, licensing, and other routine information on base port, voyages, etc. In addition, MCS functions will also be strengthened by the mandatory use of log books, movement tokens, colour coding of fishing vessels, biometric cards to fishers for their identity and also space technologies and IT tools (e.g. Vessel Monitoring System/Automatic Identification System). The Central Government will work with the State/UT Governments to put in place a more effective MCS system. The ICG and Coastal Police will be adequately trained and equipped to strengthen the MCS system. Efforts will also be made to strengthen the role of community in implementation of the MCS functions.

20.0 The marine fisheries sector is characterized by a range of fishing vessels varying in design, construction material, size, engines and gear and area of operation. The legislation(s) relating to registration, survey and certification, mandatory carriage of identification documents and tracking equipment, penalties for violations of the aforesaid provisions, sea-safety and manning norms of fishing vessels are required to be updated to cater to the needs of fisheries sector and also to meet the international standards and norms prescribed by concerned agencies such as the Food and Agricultural Organization (FAO), the International Maritime Organization (IMO), the International Labour Organization (ILO), etc.

21.0 Further, establishment of vessel building yards and construction of fishing vessels has been an unregulated activity in the country, leading to construction of poor quality vessels that compromise with key attributes such as stability, optimum space for fish holds, crew accommodation and provisions for kitchen and toilets. With the increased usage of Fibre Reinforced Plastic (FRP), the chances of building poor quality boats by such yards have amplified. The Government will consider enlarging the scope of the Marine Fishing Regulation Acts (MFRAs) of the maritime States/UTs to include registration of vessel building yards, annual survey of fishing vessels for seaworthiness, routine inspection of communication & safety appliances through IRS/similar Technical Organizations, standard design specifications for fishing vessels, construction material and procedures for continuous monitoring and control of vessels construction by the Central and State Governments.

22.0 India being a party to several International Agreements/Arrangements to deter, prevent and eliminate Illegal, Unreported and Unregulated (IUU) fishing, the Government will establish a sound mechanism both at the port and at sea to ensure that the Indian fishing fleet does not engage in any IUU fishing within its own EEZ, high seas and EEZs of other nations.

23.0 In recent times, the incidences of Indian fishermen crossing the International Maritime Boundary Line (IMBL) have increased. This increase is attributed to many reasons, one of them being the redefining of the IMBL on the basis of the judgment given by the Permanent Court of Arbitration at The Hague. To reduce such incidents, the Government will consider providing necessary awareness and training to fishermen so that the crossing of IMBL is avoided.

24.0 Convention 188 of ILO has been a landmark international instrument providing necessary provisions for best labour conditions on fishing vessels. The Government will consider incorporation of the provisions of the said Convention into the domestic legislation to provide necessary protection to labours working on fishing vessels. In this regard, it is also essential that the above provisions are extended to labours migrating from one State/UT to the other for working on fishing vessels. The Central Government will work fully with the State Government to put in place timelines for ratification of the ILO Convention 188 and for its speedy implementation, including improvement of the working conditions of vessel workers and migrant workers and including setting timelines for updating India's domestic legislations related to fisheries with respect to international standards and norms for registration of vessels, hygiene and sanitary norms for fish landing centres (FLCs), fishing harbours, etc.

25.0 It is estimated by the ILO that globally 24,000 fishermen perish annually while fishing at sea. These figures are derived from countries where good statistics are maintained on accidents at sea. If mortality figures from other countries are also taken into account, the estimates would be much higher. In view of the predominant small-scale nature of the Indian marine fisheries, Government will ensure that safety-at-sea measures are adequately strengthened and implemented. Such measures *inter alia* will include provisions of lifesaving appliances (such as Distress Alerting Transmitter/Automatic Identification System) and communication equipment on the vessels and developing adequate skills and capacity of fishers and other concerned stakeholders.

Fisheries Data and Research

26.0 To allow for considered decisions, the Government will strengthen the science-policy interface. Further, as sound policy decisions will necessitate timely, reliable, and comprehensive datasets covering various facets of the marine fisheries sector, the Government will implement a National Marine Fisheries Data Acquisition Plan, involving Central and State Governments, research institutions and stakeholders. The Plan will aim at strengthening these

institutions through appropriate technology and capacity building for timely and reliable data acquisition and management system for fisheries.

Mariculture

27.0 Mariculture, if carried out sustainably, can play an important role in increasing fish production from the coastal waters. Government will encourage schemes to set up mariculture farms/parks and setting up of hatcheries for supply of seed for development of the sector. Institutional and commercial needs of this emerging sector, which will include lease rights policies; spatial planning; technological inputs such as husbandry, seed, feed, health management; environmental and social impacts; capacity building of local fishers and local entrepreneurs to take up mariculture; and development of local markets and value chains will be addressed in consultation with the coastal States/UTs and concerned stakeholders. Participation of small fishing communities, fishermen groups, fishery cooperatives or Government organizations will be specially encouraged and supported.

Island Fisheries

28.0 The Andaman & Nicobar and Lakshadweep Group of Islands have significant fisheries resources, including lucrative fisheries of tuna and tuna-like species and other species of commercial value such as groupers, snappers and coral fishes. Their geographic remoteness has so far impeded fisheries development and optimal harnessing of fisheries wealth. The Government will implement dedicated programmes for sustainable harvest of fisheries resources, mariculture, developing capacities of local fishers and institute post-harvest support that can allow the harvested resources to come to the mainland markets as also to seafood export destinations.

Post-harvest & Processing

29.0 The general hygiene and sanitary aspects of FLCs, harbours and fish markets in the country need improvement to raise them to international standards. The Government will introduce programmes to sensitize the stakeholders for maintaining cleanliness and hygiene in these facilities. Simultaneously, State/UT Governments and Port Trust Authorities will be encouraged to develop suitable mechanisms to address the issue, including stakeholder run committees for day-to-day management of the FLCs/harbour facilities. This will ensure availability of safe and hygienic seafood. In particular, efforts will be made to meet the urgent needs for capacity building in post-harvest fisheries.

30.0 Provision of adequate infrastructure facilities is critical to marine fisheries value chain, and also critical for many MCS functions. Based on a comprehensive reassessment of the requirements and ensuring minimal impacts on the coastal ecosystem, the Government will create additional facilities, including harbour-based fish dressing centres and fish processing estates. To promote direct engagement of stakeholders in setting up of such infrastructure facilities, fisher cooperatives will be encouraged along with the PPP mode to ensure speedy fulfillment of the requirements.

31.0 Presently, it is estimated that about 15 per cent of the fish caught is lost in post-harvest phase, which is a colossal waste of natural wealth that otherwise could have been put to better use. The Government will address the post-harvest losses through better on-board fish handling, as it will lead to better quality and prices, particularly for high value fishes and their products. More importantly, loss of valuable fish wealth will be minimized so that more fish is available for human consumption. Mitigation measures to reduce by-catch will be promoted through relevant implements, gears and other management measures.

32.0 Use of low-value fish species in fish feed industry is becoming a matter of concern as it can lead to overfishing of such species and bycatch, and could undermine the integrity of the marine ecosystem. The spread of fish meal plants in some coastal States and their overwhelming demand for small pelagics (*e.g.* oil sardines) has led to overfishing, resulting in reduced stocks of small pelagics in some parts of the country. The Government will address this issue by taking steps to control and regulate proliferation of fish meal plants.

Trade

33.0 Indian seafood finds a significant place in the global seafood trade. Over the period, seafood exports from India have grown both quantitatively and qualitatively. Notwithstanding these developments, Indian seafood is yet to realize its optimum value, first due to low levels of value addition and second due to poor product branding. To overcome these weaknesses, the Government will make efforts to promote product diversification, improve value addition and product branding and enhance the reach to new markets in different parts of the world. Similarly, with the growing consumer demand for fish and fish products in the domestic sector, the Government will undertake thorough review of the existing infrastructure, value chain and other important attributes of domestic fish marketing to ensure that consumers get high quality fish.

34.0 Fishery product traceability and chain-of-custody will be addressed, as they have assumed paramount significance in global seafood trade. Besides diversifying seafood products to meet international demand and standards, efforts will also be made to get maximum value for fishery products. Furthermore, fishery products will be integrated with the Food Safety Standards Authority of India (FSSAI) benchmarks to improve domestic marketing value chain. In this regard, the Government will also consider harmonizing FSSAI benchmarks with those of the Export Inspection Council (EIC).

35.0 Traceability of seafood and eco-labelling are gradually gaining importance as market-based interventions to ensure environmental sustainability of fisheries. Demonstrating traceability of seafood is an important requirement for all seafood exported to markets in the European Union (EU). It is likely that in the coming years more importing countries as also markets will demand only certified and labelled seafood. The Government will create an enabling environment for promoting eco-labelling of key Indian fisheries that would benefit fish stocks, seafood industry and fishers.

36.0 The wide difference between fish sale price at landing centres and retail markets indicates that middlemen take a substantial share of the prices. There are issues of credit bondage also. The Government will consider taking steps to bring in necessary interventions so that the dependency of fishers on middlemen and private financiers is reduced. Efforts will also be directed towards strengthening marketing through fishermen-run and/or state-run harbour-based co-operatives.

Marine Environment and Pollution

37.0 The state of marine environment in India is under stress due to pollution and is probably one of the reasons for decline in fish stocks. Further, factors such as poor effluent treatment on land, plastics (especially, micro-plastic particles) in the sea and ghost fishing are equally affecting fish stocks. The Government will strengthen regulatory mechanisms to control pollutants to ensure that land and sea-based pollution are effectively controlled and the ecosystems monitored. Fishers will make all out efforts to ensure that fishing vessels do not contribute to marine pollution in any form by taking required measures into account, in their design and construction.

38.0 Development of Ports sometimes leads to erosion and accretion along the coasts. These developments may bring changes in coastal configuration, which may have an impact on the coastline, ecology and fisheries. Government will consider placing adequate mechanisms to address these aspects while considering infrastructure developments on the coast.

39.0 It is well known that coastal and inshore waters are tail-end ecosystems and marine fish resources inhabiting therein are highly dependent on the inflow of freshwater and sediments that bring in nutrients. However, these water bodies are subject to anthropogenic pressures, resulting in degradation of environmental quality and reduced freshwater inflow. Such changes impact stocks of several important marine fishery resources, particularly the high value shrimps, which complete a phase of their life cycle in these inland coastal waters. Therefore, to safeguard the ecological integrity of such tail-end ecosystems, the Government will consider a landscape- to- seascape approach where sound management of inland water resources will also ensure the health and well-being of the coastal eco-systems.

40.0 While promoting development of sustainable fisheries, the Government will place emphasis on maintenance of the ecological integrity of marine environment, so as to ensure that there are no adverse effects on the endangered, threatened or protected marine species. Mangroves, seagrass beds and coral reefs are integral part of the coastal marine eco-systems and provide a range of eco-system services, including habitation for many fish species and marine mammals (e.g. dugong). Such ecosystems will be protected from anthropogenic impacts.

Climate Change (Adaptation and new initiatives)

41.0 Climate change is one of the biggest challenges that the fisheries sector is facing and time-bound adaptation and management plans are necessary. The impacts of climate change on marine fisheries are amply visible in the Indian EEZ and surrounding high seas. Such impacts have brought perceptible changes in the fishery of some species, forcing fishers to make changes in fishing operations. Climate change is also one of the reasons for changes in abundance of vulnerable fish stocks. The Government will encourage focused studies on climate change impacts on fish stocks and fishing communities, besides implementation of adaptation options in a time-bound manner. As part of India's International commitments on climate change, the concept of green fisheries by reducing Green House Gases (GHG) emissions from fishing and fishing related activities will also be encouraged.

Fisher Welfare, Social Security Nets & Institutional Credits

42.0 The Government will consider continuing the current welfare measures and further strengthen them to provide adequate safety nets to fisher community in the country through the Direct Benefit Transfer Scheme (DBTS). Such measures will also include community welfare, housing and other amenities to fishers.

43.0 Weather events of extreme nature such as storm surges, cyclones and rogue waves will be considered as natural calamities. In the same vein, man-made disasters such as oil spills will also be considered as calamities and affected fishing communities will be provided with admissible support/assistance in restoration of their livelihoods. In cases of loss of fishers' life at sea, procedures for compensation would be made easier so that the benefits to affected fisher family are provided within a reasonable time.

44.0 The positive impacts of fishing ban on the health of fish stocks have been voiced by a large section of stakeholders. Some coastal States and stakeholders have also voiced the need for increasing the ban period from the present span of 61 days. Keeping in view the beneficial effects of the ban and good co-operation of stakeholders, the Government will further strengthen the existing compensatory package available to fishers during the period of fishing

ban. This will not only promote increased engagement of stakeholders in the conservation of resources, but also help in rejuvenation and restoration of fish stocks that have been showing signs of decline/depletion.

45.0 Fisheries cooperatives have gained momentum over the years and in some States/UTs, such cooperatives have demonstrated their success. Fisheries cooperatives can best serve the community if they adopt good business models that would include both harvest and post-harvest functions. The Government will further facilitate and strengthen fisheries co-operatives through skill development and technical and financial support, wherever necessary. The co-operatives will also be encouraged and strengthened in carrying out a science-based approach to address fisheries and climate related issues.

46.0 Availability of institutional credit for fishermen for purchase of fishing implements and crafts has often proved very difficult, and the risky nature of returns has resulted in many fishermen falling into the debt trap of private financiers and middlemen. In order to remedy this situation, the Government will consider providing public finance to fishermen with liberal terms and conditions. In this direction, the role of the National Bank of Agriculture and Rural Development (NABARD) assumes significance and will be considered in meeting the needs of the fishers.

47.0 The Government will initiate steps towards training, capacity building as well as up-gradation of technological skills of traditional fishers in moving from artisanal fishing to more economic and efficient means of fishing.

Gender Equity

48.0 Women constitute more than 66 percent of the total work force in post-harvest activities in the fisheries sector. Besides raising families, women play important roles in retailing fish, fish drying and other value addition activities through women self-help groups (SHGs). The Government will continue to support its contributions to the roles played by women and will further enhance support by way of forming women cooperatives; women-friendly financial support schemes; good working conditions that would include safety, security and hygiene and transport facilities for retail marketing; encouragement to take up small-scale fishing, value-addition activities; and also facilitate their active engagement in fisheries management.

Additional/Alternate Livelihoods

49.0 Keeping in mind the dwindling marine fisheries resources, additional/alternative sources of livelihoods will be essential for the vast number of fisher communities spread all along the coastline. Mariculture and eco-tourism are considered important in this regard and both offer good potential of additional/alternate sources of livelihoods. Game Fishing and the concept of Catch, Photograph and Release (CPR) is gaining importance throughout the world as part of fisheries tourism. The Andaman & Nicobar Islands and the Lakshadweep Group of Islands, besides some coasts on the mainland, are ideally suited for promotion of such activities. The Government will promote CPR schemes among fishermen in suitable areas and will also consider harmonizing tourism plans related to coastal and marine waters with the livelihood needs of the fishers.

Blue Growth Initiative

50.0 While re-defining its strategy for fisheries sector, the Government will focus on ushering 'Blue Revolution' (*Neeli Kranti*) by sustainable utilization of fisheries wealth from the marine and other aquatic resources of the country for improving the lives and livelihoods of fishers and their families. The 'Blue Revolution' will encompass elements of the 'Blue Growth Initiative', as also the targets set under the Sustainable Development Goals, to which India is committed.

51.0 In view of the competing demands for ocean space, the need for Marine Spatial Planning (MSP) assumes significance. With the growing demand for mineral and oil exploration/extraction from the seas, the increasing volumes of maritime commercial traffic and reservation of spaces for strategic defence purposes, the available space for fisheries is diminishing. Keeping these contemporary developments in view, the Government will consider MSP to ensure that all eco-nomic activities get their due space and in the process conflicts are reduced.

International Agreements/Arrangements

52.0 Indian fisheries is now set in a globalized world. The global agenda on fisheries is guided by a set of binding and non-binding instruments that concern both fisheries and environmental aspects. India being a signatory to such instruments and agreements needs to implement the provisions and agreements to meet its international obligations and make fisheries sustainable, which otherwise could impact the sector and in turn affect the livelihoods of millions of fishers. The Government will ensure compliance of the provisions of the International Agreements/Arrangements and also active participation in the activities of the regional/international bodies demonstrating India's leadership in management of its marine resources that are part of the 'Common heritage of the mankind.'

53.0 The FAO's Code of Conduct for Responsible Fisheries (CCRF or Code) is today the most significant of the non-binding agreements in the global fisheries sector. It is global in scope and directed towards members and non-members of FAO, fishing entities, organisations of all kinds, fishers, people engaged in processing and marketing of fish

and fishery products – in short, everyone concerned with the management and development of fisheries. The Code is voluntary, but certain parts of the Code reflect and include major articles and provisions from a number of global UN conventions and agreements, as mentioned earlier. The Code sets forth principles and standards applicable to conservation, management and development of all fisheries. The Government will ensure that the Code and its Principles are well-integrated in all its activities that relate to marine fisheries sector.

54.0 The global community has recognized the importance of small-scale fisheries as a principal contributor to poverty alleviation and food security and has agreed to the Voluntary Guidelines on Sustainable Small-scale Fisheries (VG-SSF). The main objectives of the VG-SSF Guidelines are expected to be achieved through the promotion of a human rights-based approach in the context of food security and poverty eradication, by empowering small-scale fishing communities. The Government will make all efforts to implement the provisions of the VG-SSF keeping in view the complexities and divisions within the small-scale sector, particularly those involved in sustenance fishing.

55.0 As the provisions contained in the binding and non-binding international instruments normally draw strength from each other, it is essential that these instruments are considered holistically and not in isolation. The Government will encourage wider consultations with stakeholders and fisheries organisations to provide a more balanced understanding and better implementation of such instruments.

Regional Cooperation

56.0 The Indian sub-continent is surrounded on the west by the Arabian Sea and on the east by the Bay of Bengal. Together, the two seas form part of the upper Indian Ocean. On the west coast, India shares its maritime boundaries with Pakistan and the Maldives, while on the east coast, the boundaries are shared with Sri Lanka, Bangladesh, Myanmar, Thailand and Indonesia. In some cases, it is not only the shared maritime boundaries but also shared ecosystems, such as the Gulf of Mannar and Palk Bay between India and Sri Lanka; Sunderbans between Bangladesh and India; and the Myeik (Mergui) Archipelago in the Andaman Sea. Both the Arabian Sea and the Bay of Bengal harbour migratory as well as straddling fish stocks, such as tuna and tuna-like species, sharks and Spanish mackerels. As situations necessitate, the Government will foster a strong regional co-operation in management and sustainable utilization of the resources, including conservation of species/stocks, wherever necessary.

57.0 Cooperation in safety and security of fishermen is also necessary as the upper Indian Ocean, especially the Bay of Bengal, witnesses high number of adverse weather events and every year many fishers lose their lives or suffer extreme hardships. Further, cooperation in the field of marine fisheries through bilateral arrangements as also by participating in the regional fisheries and environment bodies will be enhanced. Such co-operation will facilitate managing shared resources and shared eco-systems; harmonization of policies and programmes aimed at optimized harvesting of trans-boundary resources; safeguard of human rights, in particular for fishermen straying in waters of other countries.

58.0 Indian fishers are widely recognized in other countries in the region for their skills, industrious nature and the ability to work under challenging conditions. As a result, more and more fishers from India are now finding employment in fishing fleets of other countries. On many occasions, Indian fishers have been apprehended in neighbouring countries, as while fishing they unknowingly stray into the EEZ of other countries, making it difficult for the Government to secure their release through normal channels. The Government will ensure that fishers who are willing to take employment in fisheries sector in other countries have adequate skills and knowledge of working in alien seas and go through formal Government approvals.

Governance and Institutional Aspects

59.0 The marine fisheries sector is dealt by a range of institutions that fall within the purview of coastal State/UT Governments (DoF), Central Government (DAHD&F, Ministry of Commerce & Industry, ICG, etc.) and scientific bodies. This pluralistic governance structure necessitates strong co-ordination between the Ministry of Agriculture and Farmers Welfare and the Coastal States/UTs on one hand and different Ministries/Departments of the Union Government on the other. Further, similar cooperation between coastal States/UTs will also be essential to ensure that fisheries are sustainably harvested. In this regard, the Government will consider putting in place a mechanism to allow for better coordination between all concerned agencies.

60.0 Marine fisheries in India is dynamic with continuous changes in practices and resource harnessing. The MFRA's have come into existence from the early 1980s, and barring a few States/UTs, the MFRA's were in place by mid-1990s. Keeping in view the fact that most of the MFRA's were adopted before adoption of key International Agreements/Arrangements (1982 UNCLOS, 1992 UNFSA, 1995 FAO CCRF), the Government will consider updating the existing rules and regulations for governing fisheries in the MFRA's and also aligning with International Instruments/Arrangements to ensure that they cover all aspects of fisheries management. This will be carried out by preparation of a Model Bill for consideration of the coastal States/UTs.

61.0 The Central Government is mandated to control and regulate fisheries in the EEZ (12-200 nm area). Therefore, there is a need to regulate fisheries in the EEZ with appropriate legislation. The Government will take steps to bring in such legislation for sustainable development and management of fisheries in the EEZ.

Way Forward

62.0 The NPMF, 2017 is expected to meet the multi-dimensional and growing needs of the marine fisheries sector for the next one decade. The Policy is holistic and adequately addresses the needs of all the segments of this diverse economic activity. The NPMF, 2017 will have an 'Implementation Plan' that will specify the action points under each recommendation contained in the Policy. These action points will be further elaborated with timelines for implementation, agencies responsible for the work and the likely sources of funds required for implementation. The Implementation Plan will also have a 'Monitoring and Evaluation' section that will address the timeliness and efficacy of implementation. It is expected that through the implementation of this Policy, the marine fisheries sector in India will become a sustainable and well-managed entity, ensuring enhanced utilization of the harvest for human consumption; employment, gender equity and livelihoods; equity and equality; provision of food security and nutrition; and creation of wealth and prosperity in the sector.

ADITYA KUMAR JOSHI, Jt. Secy.



NATIONAL ACTION PLAN ON MARINE PLASTIC LITTER FROM SEA-BASED SOURCES

INDIA



Ghost net removal from Kavaratti Island, Lakshadweep, India

2024-2026

FEBRUARY 2024

Prepared with support and guidance from IMO/FAO-Norway GloLitter Partnerships Project

Acronyms

ALDFG	Abandoned, Lost or otherwise Discarded Fishing Gear
CIFNET	Central Institute of Fisheries Nautical and Engineering Training
CIFT	Central Institute of Fisheries Technology
CMFRI	Central Marine Fisheries Research Institute
DGS	Directorate General of Shipping
DoF	Department of Fisheries
EEZ	Exclusive Economic Zone
EPR	Extended Producer Responsibility
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization of the United Nations
FSI	Fishery Survey of India
GLoLitter	GloLitter Partnerships Project
ICAR	Indian Council of Agricultural Research
IMO	International Maritime Organization
IOTC	Indian Ocean Tuna Commission
IORA	Indian Ocean Rim Association
IPFC	Indo-Pacific Fisheries Commission
IUU	Illegal, Unreported and Unregulated Fishing
IWAI	Inland Waterways Authority of India
LC	London Convention
LDC	Least Developed Country
LP	London Protocol
LPC	Lead Partnering Country
MARPOL	International Convention for the Prevention of Pollution from Ships
MFAH&D	Ministry of Fisheries, Animal Husbandry and Dairying
MMD	Marine Mercantile Department
MoEF&CC	Ministry of Environment, Forest & Climate Change
MoES	Ministry of Earth Sciences
MPEDA	Marine Products Export Development Authority
MPL	Marine Plastic Litter
NAP	National Action Plan
NCCR	National Centre for Coastal Research
NCERT	National Council of Educational Research and Training
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
NTF	National Task Force
PET	Polyethylene terephthalate
PRF	Port Reception Facility
RFMO	Regional Fisheries Management Organisation
SACEP	South Asia Cooperative Environment Programme
SBMPL	Sea-based Marine Plastic Litter
SIFFS	South Indian Federation of Fishermen Societies
SIDS	Small Island Developing State
SUP	Single Use Plastic
TERI	The Energy and Resources Institute
UNCLOS	United Nations Convention on the Law on the Sea
UN SDG	United Nations Sustainable Development Goal
UT	Union Territory

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India's National Action Plan on Marine Plastic Litter

1. Introduction

India has rich biodiversity of terrestrial and marine organisms. India's marine ecosystem is home to the richest and most diverse faunal and floral communities and Indian coastal waters are extremely diverse attributing to the geomorphologic and climatic variations along the coasts. The coastal and marine habitats include nearshore gulf waters, creeks, tidal flats, mud flats, coastal dunes, deltaic plains, estuaries, lagoons, marshes, wetlands, mangroves, seaweed and seagrass beds and coral reefs. However, like other areas of world oceans, biodiversity of marine habitats is under threat in Indian seas, mainly as a result of habitat loss, over harvesting, introduced species, pollution and global climate change.

Marine pollution by plastic litter constitutes a major threat to the marine environment, biota and human health. It has been well documented in literature that numerous seabirds, turtles, fishes and whale species suffer and die either from entanglement of fishing gear or ingestion of plastic particles mistaken for food. Entanglement of organisms, especially in net fragment litter or 'ghost fishing gear' can cause starvation, suffocation, laceration, infection, reduced reproductive success and mortality. Further, floating litter (floatsam) acts as a vector for the spread of harmful alien species.

There are numerous sources of marine plastic litter (MPL), with much of it originating on land, through overuse of plastics and improper waste disposal. In addition, sea-based activities like mechanical navigation, fishing, etc., also contribute to marine plastic pollution. Abandoned, lost or otherwise discarded fishing gear (ALDFG) including nets, lines, etc., also contribute to marine plastic pollution.

2. International Conventions

India became a party to the United Nations Convention on the Law on the Sea (UNCLOS) in 1995. Article 192 of the United Nations Convention on the Law on the Sea (UNCLOS) specifies that "States have the obligation to protect and preserve the marine environment", while Article 194 mentions "States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose, the best practicable means at their disposal and in accordance with their capabilities".

UN Sustainable Development Goal (UN SDG) 14.1 states "By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine litter and nutrient pollution". It is, therefore, important that urgent action is needed to contain the marine pollution by marine litter, especially by plastics, to achieve these SDGs.

India is a signatory to International Convention for the Prevention of Pollution from Ships (MARPOL). India ratified MARPOL Annex V on 31 December 1998 and it entered into force on 11 September 2003. The MARPOL Convention has six annexes (I to VI) and it deals with prevention of pollution from ships by (I) Oil, (II) Noxious liquid substances, (III) Dangerous goods in packaged form, (IV) Sewage, (V) Garbage and (VI) Air pollution from ships, respectively.

Discarding or disposal of all plastics (including from fishing operations/gears) is completely prohibited under MARPOL Annex V. To strengthen the work on these matters, and improve implementation, IMO adopted an Action Plan to Address Marine Plastic Litter from Ships, in 2018. In 2021, IMO adopted a Strategy on Marine Plastic Litter.

Annexure V, 'Garbage' includes 11 items viz., Plastics, Food wastes, Domestic wastes, cooking oil, Incinerator ashes, Operational wastes, Animal carcasses, Fishing gear, E-waste, Cargo residues (non-HME and HME - Harmful to Marine Environment).

The Government of India has been actively participating in the Intergovernmental Negotiating Committee (INC) established to develop an international legally binding instrument on plastic pollution, including in the marine environment.

In order to reduce marine plastic litter entering the marine environment from all ships, including fishing vessels, and ultimately to achieve zero plastic waste discharges to sea from ships by 2025, India aims to strengthen the international framework and compliance with the relevant IMO instruments.

The GloLitter Partnerships project is aimed to support developing countries, including Small Island Developing States (SIDS) and Least Developed Countries (LDCs), in identifying opportunities for prevention and reduction of Sea-based Marine Plastic Litter (SBMPL) from shipping and fisheries sectors. This project is initially funded by Government of Norway, represented by the Norwegian Agency for Development Cooperation (NORAD) and implemented by the International Maritime Organization (IMO) in cooperation with the Food and Agriculture Organization of the United Nations (FAO).

Government of India (GoI), through Department of Fisheries (DoF), Ministry of Fisheries, Animal Husbandry & Dairying (MFAHD), as the lead agency, is participating in the IMO-FAO GloLitter Partnerships project as one of the Lead Partnering Countries (LPC) with the aim of prevention and reduction of Marine Plastic Litter (MPL), in particular, sea-based MPL (SBMPL), and to reverse the negative environmental impacts of marine plastic pollution.

3. National Task Force

In order to facilitate the partnership with GloLitter and to achieve the goal / implementation of the international regulatory framework and best practices for significant reduction of SBMPL at the national level, the DoF, MFAHD, Government of India, constituted a National Task Force (NTF) as detailed below.

- Joint Secretary (Marine Fisheries), DoF and GLP National Focal Point - Chairperson
- Director General, Fishery Survey of India (GLP Lead Agency) - Member Convener
- Representative of Directorate General of Shipping - Member
- Representative of Ministry of Environment, Forest & Climate Change - Member
- Representative of Marine Products Export Development Authority (MPEDA), Kochi -Member

- Director, Central Marine Fisheries Research Institute (CMFRI), Kochi or his representative- Member
- Director, Central Institute of Fisheries Technology (CIFT), Kochi or his representative-Member
- Representatives of Maritimes States and Union Territories (UTs)
- Fisheries Development Commissioner/ Deputy Commissioner/ Assistant Commissioner (in-charge of Marine Fisheries), DoF – Member

This NTF is proposed to be made a permanent body with FSI leading the implementation of the project. Infrastructure development, personnel requirements, necessary trainings, etc., in FSI 6 bases and Headquarters and the various Departments / Institutes will be undertaken for implementation of the project, as per requirements.

3.1. Country Context

India is one of the oldest civilizations in the world with a diverse and rich cultural heritage. India's population is about 1.393 billion (as of 01 July 2021), inhabiting in 28 states and 8 Union Territories of the country. As the 7th largest country in the world, India stands apart from the rest of Asia, marked off as it is, by mountains and the seas, which give the country a distinct geographical entity.

Bounded by the Great Himalayas in the north, it stretches southwards and at the Tropic of Cancer, tapers off into the Indian Ocean between the Bay of Bengal and Andaman Sea on the east and the Arabian Sea on the west. Lying entirely in the northern hemisphere, India extends between latitudes 6° 4' and 37° 6' North, longitudes 68° 7' and 97° 25' East, and measures about 3,463 km from north to south between the extreme latitudes and about 2,933 km from east to west between the extreme longitudes. It has a land frontier of about 15,200 km.

The total length of the coastline of the mainland, Lakshadweep Islands and Andaman & Nicobar Islands is 7,516.6 km (<https://www.india.gov.in/india-glance/profile>). The Exclusive Economic Zone (EEZ) of India has an area of 2.02 million km² within a limit of 200 Nautical Miles (NM) from the coastline.

3.2. Governance System

India is a Democratic Republic with a Parliamentary form of government and is federal in structure. Both Parliament at Central level and Legislative Assemblies at State level have powers to enact laws, pertaining to the subjects concerned. It has legislative, executive and judicial systems.

With regard to protection of marine environment, by legislation of acts, rules, guidelines, etc., India aims for elimination of single-use plastic, as well for management of waste in general, and management and control of litter from the sea by selected sectors of the industry.

3.3. Studies on MPL

Many significant studies have been undertaken by Government sectors, research institutes, university research centres and some NGOs on marine plastic pollution. However, precise comprehensive data is not available on the extent of marine pollution due to plastics in Indian seas, their sources, seasonal variation, transport pathways, ill effects and mitigation in India.

Information on MPL from India are available from various studies and a review of literature on the same as modified from Owens *et al.* (2022) and other studies is furnished under:

Studies on debris in India began with evidence in the early 1980s from Caranzalem beach, Goa, on plastic pellets (also known as nurdles) ranging in density from 50–300 pieces/m² (Nigam, 1982). Dharani *et al.* (2003) shared evidence from Great Nicobar Island of the accumulation of substantial shoreline debris of transboundary origin. In the Alang-Sosiya shipyard in Gujarat state, researchers found plastics represented 81.43 mg/kg in sediment samples (Reddy *et al.*, 2006). Research of five sites in Karnataka state revealed plastic abundance with a range from 6.9 to 37.9 g/m² by weight (Sridhar *et al.*, 2007). Ganesapandian *et al.* (2011), collecting debris over two years from beaches on the Gulf of Mannar, most frequently found plastic (48%), polystyrene (18%), and cloth (15%), attributing the litter to fishing, tourism, and sewage. Kaladharan *et al.* (2012), sampled beaches, trawling hauls, and water over two years, at eight sites, in six Indian states and found “considerable quantities” of plastic ropes, PET bottles, sachets, milk covers and thin carry bags on beaches (0.145–9.8 g/m²) and fishing grounds (32–85 g/haul). Jayasiri *et al.* (2013) studied four beaches in Mumbai over eleven months, most frequently finding plastic, with a mean abundance of 7.49 g/m² and 68.83 items/m² in sediment samples and of 3.24 g/m² and 11.6 items/m² for visible debris. Sampling monthly over two years from 2010–2012 at four sites in Karnataka, Sulochanan *et al.* (2014) most frequently found nylon and plastic ropes. The mean density of reported debris was 233.86 g/m² and 24.3 items/m² (Thanneerbhavi), 141.7 g/m² and 19.46 items/m² (Panambur), and 420.11 g/m² and 20.73 items/m² (Chithrapur). Working on Marina beach, Chennai, Kumar *et al.* (2016) found 6872 individual pieces (129.7 kg) most of which was plastic (44.9%). Kaladharan *et al.* (2017) studied the status and composition of beach litter from 254 selected beaches along nine maritime states of Peninsular coasts of India as well as the Union Territories of Andaman and Lakshadweep Islands and reported that the mean national beach litter in India amounts to 45.86 g/m². Evaluating microplastics in Vembanad Lake, Kerala, Sruthy and Ramasamy (2017) discovered microplastics in all of their sediment samples, calculating a mean abundance of 252.80 particles/m². Karthiket *et al.* (2018), sampling microplastics at twenty-five sandy beaches across Tamil Nadu, found that high tide line microplastic mean abundance was 1323 ± 1228 mg/m² compared to 178 ± 261 mg/m² at the low tide line; microplastics were found at highest density at beaches next to rivers, indicating land-based sources. Assessing macro and micro debris on Nallathanni Island, Gulf of Mannar, Krishnakumar *et al.* (2018) found plastic made up 73.2–100% of their samples.

Assessing 21 islands of the Gulf of Mannar, Edward *et al.* (2020) revealed that, majority of the waste was abandoned fishing nets (43.17%), damaging corals. Working along the length of the Ganga, Napper *et al.* (2021) found 140 microplastic particles in 20 samples of ten sites, noting concentration was higher during pre-monsoon and fibres were most prominent. The researchers estimated that the Ganga, the Brahmaputra and the Meghna rivers may collectively release 1–3 billion particles into the Bay of Bengal daily. Abundance of microplastics was analysed in the commercial table salt and the table salt from salt pans in

Tamil Nadu coast (Nithin *et al.* 2021). Microplastic contamination was more in salt pans (3.67 ± 1.54 to 21.33 ± 1.53 nos./10 g of salt) than in commercial salt (4.67 ± 1.15 to 16.33 ± 1.53 nos./10 g of salt) indicating that both are prone for microplastic contamination. Sivadas *et al.* (2021) suggested potential plastic accumulation zones in the Indian seas, based on published literature on oceanographical features in northern Indian Ocean (Arabian Sea and Bay of Bengal) including coastal / protected habitats. Nithin *et al.* (2022) reported that microplastics concentration ranged from 1.15 ± 0.01 to 5.14 ± 0.04 items/m³ in surface water and 24.8 ± 0.75 to 43.4 ± 0.98 particles/kg dry weight, in sediments in Vellar estuary, southeast coast of India. The microplastics largely comprised of fiber (~80%) and others (fragment, film, pellet and glitter). Owens *et al.* (2022) reported collection of 33,474 individual pieces of debris weighing a total of 599.15 kg during ten collection drives in eight beaches and two riversides in three states and two Union Territories, 83.0% of which was plastic by count and 57.3% by weight. Combating marine plastic litter (MPL) is crucial, and bioplastics offer a promising solution. Researchers have developed films from eco-friendly corn and fish scale powders, presenting a viable alternative to conventional plastics. These films exhibit impressive physical and chemical properties, readily breaking down in compost (Surya *et al.*, 2022).

Overall, plastic items constituted the major share of total debris items collected from the Indian beaches (about 60% by weight and 70% by number). Fishing related debris as reported from fishing vessels (ropes, netting, floats, buoys and monofilament fishing lines, etc.) was the most dominant component among plastic debris, followed by carry bags and sachets of soft drinks, edible oils, detergents, beverages, cases of cosmetics, toothpaste, PET bottles, ice cream containers, etc. Other components in the marine debris include metals, glass, cloth, fabric, shoes, etc.

4. Principles and approaches followed for combating MPL

The key principles being followed by India for combating marine plastic debris are

- 1) Prevention of items becoming debris in the first place
- 2) Polluter pays principle
- 3) Ecosystem approach
- 4) Public and private participation
- 5) Sustainable production and consumption
- 6) Best available knowledge and best practices

Source prevention, through a combination of measures and approaches, is widely regarded as the most effective means to reduce the impact of MPL on marine and coastal biodiversity. The following acts, rules and notifications of the country are enacted to achieve the goal of prevention of items becoming debris in the first place.

1. Water (Prevention and Control of Pollution) Act, 1974 and its amendments including that of 2011: These acts have provisions for the prevention and control of water pollution, and for maintaining or restoring the wholesomeness of water (fresh as well as sea water).
2. Ministry of Environment, Forest & Climate Change (MoEF&CC) has notified various Rules pertaining to Plastic Waste Management as detailed below.
 - 1) Plastic Waste Management Rules, 2016
 - 2) Standard Guidelines for Single-Use Plastic, 2019

- 3) Plastic Waste Management (Amendment) Rules, 2021
- 4) Plastic Waste Management (Amendment) Rules, 2022
- 5) Nation-wide Ban on identified Single Use Plastic Items from 1st July 2022

These rules are not specifically for marine plastic litter; however major sources of plastics are from land-based sources. Hence, there is a need to enact new legislations or amend the existing Acts, Rules to include sea-based marine plastic litter (SBMPL), in order to protect the marine environment and biodiversity from the long-term ill effects of MPL.

Plastic Waste Management Rules, 2016, and its amendments, prohibit manufacture, import, stocking, distribution, sale and use of carry bags and plastic sheets less than 50 microns in thickness in the country. There is a complete ban on sachets using plastic material used for storing, packing or selling gutkha, tobacco and pan masala.

MoEF&CC also issued “Standard Guidelines for Single-Use Plastic” on 21st January 2019 to all States/UTs and Ministries. Further, the Government of India has initiated several programmes such as “Swachh Bharat Abhiyan”, “National Mission for Clean Ganga and Smart Cities Mission” in order to develop clean and sustainable environment which contribute towards the Marine Litter Policy.

Plastic Waste Management Amendment Rules, 2021, also prohibit manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than 75 microns with effect from 30th September, 2021, and having thickness less than 120 microns with effect from the 31st December, 2022.

MoEF&CC also notified the Guidelines on Extended Producer Responsibility (EPR) on plastic packaging as Plastic Waste Management Amendment Rules, 2022 on 16th February, 2022. As per the regulations, EPR, the responsibility for the environmentally sound management of the product until the end of its life lies with the producer. The Guidelines provide a framework to strengthen the circular economy of plastic packaging waste, promote development of new alternatives to plastic packaging and provide next steps for moving towards sustainable plastic packaging by businesses.

Under the Shipping sector, the following steps have been taken by India for prevention and control of pollution arising from ships in the sea:

To prevent ships contravening the regulatory requirements for operational necessity, Section 356 I in the Merchant Shipping Act, 1958 enables ports to provide reception facilities in order to receive ship generated wastes.

The Directorate General of Shipping (DGS), being custodian of the Merchant Shipping Act, 1958, as a proactive measure, has developed a centralized online portal called “Swachh Sagar” (meaning ‘Clean Ocean’). The visiting ships can make a request in the online portal well in advance to provide adequate waste reception facilities at the port of call.

As per the 2018 UNEP report, Single use plastics - A roadmap for Sustainability, “Plastic pollution is a defining challenge of our times. Single use throw-away plastics are the biggest contributor every year, millions of plastic bags end up in the environment, thus polluting soil, water bodies, rivers and Oceans”.

To prevent plastic pollution from ships, through the DGS order no. 05 of 2019, the Directorate General of Shipping has imposed a ban on single use plastics on Indian Ships which are registered under the Merchant Shipping Act, 1958 and foreign ships while in Indian waters and has been successfully implemented the same with effect from 1st January 2020.

With respect to prevention and control of pollution in inland-waterways, the Inland Waterways Authority of India (IWAI) regulates the same through the State Maritime Authorities concerned.

In order to prevent and reduce the impacts of SBMPL, a framework is required to support:

- (a) to prevent and control SBMPL, ALDFG and IUU, and contain their ill effects;
- (b) for schemes as incentives to fishermen for collection / reporting of ALDFG, etc.;
- (c) for schemes of coastal cleanup, awareness creation, training on data collection; and,
- (d) research on alternative materials, recycle, reuse, innovative ventures, etc.

4.1 Public and private participation

Government of India and local administrations are implementing various flagship clean-up programmes including *Swachhta Abhiyaan*; *Suchitwa Sagaram*, *Sundara Teeram*; *Swachh Sagar*, *Surakshit Sagar*/'Clean Coast Safe Sea', coastal clean-up campaign, etc., which cover the entire nation or state level clean-up programmes. In addition, several local/beach level clean-up programmes are being regularly conducted at local levels.

Government and NGOs are actively participating and implementing the above campaigns and public-private partnership is ensured in these mass clean-up drives. Citizen participation is the basis of India's democratic system and the clean-up campaigns and awareness programmes ensure active participation of all sections of the society in activities aiming to reduce pollution, especially by plastic waste.

India Country Assessment Report on sea-based MPL with specific reference to shipping and fisheries is at Annexure 1 and Data/information needed for updated Baseline Report on Marine Plastic Litter (MPL) with specific reference to shipping and fisheries is at Annexure 2. The information contained in these Annexures form the basis for outlining the SBMPL National Action Plan (NAP).

5. SBMPL National Action Plan

The objectives of the National Action Plan (NAP) are to prevent, reduce and control sea-based marine plastic litter (SBMPL) in the country, especially in the shipping and fisheries sectors in India.

To achieve this goal, a framework will be established, with the support of the GloLitter Partnerships project, that coordinates the actions to be taken, as identified in the Country Status Assessment. This NAP will also have actions that need to be taken in collaboration with regional participating countries.

Specific Actions, responsible authorities/ agencies/ institutions and timelines are detailed under the following aspects, provided by GloLitter, viz., (a) legal, policy and enforcement

reforms; (b) institutional capacity and reforms; (c) education and outreach; (d) regional and global cooperation, and (e) private sector engagement.

INDIA SBMPL NATIONAL ACTION PLAN

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
5.1	Actions related to the legal, policy and enforcement reforms							
Action 5.1.1	Effective enforcement of existing acts and rules [The Environment (Protection) Act, 1986 and Rules, Plastic Waste Management Rules, 2016 and subsequent amendments, Water (Prevention and Control of Pollution) Act, 1974 and Rules etc] to prevent, reduce marine plastics entering the marine environment through an appropriate system.	Medium	Central / State Govts; State Fisheries Dept. Officials.	2024	2026	FSI, Ports, State Fisheries Dept. Officials, Technical, Field staff.	Periodic reports ¹ (6-monthly)	Reports & Executive instructions
Action 5.1.2	Sensitize 'marking of fishing gear' to fisherfolk and net manufacturers on voluntary / mandatory basis for fishing vessels based on "FAO Voluntary Guidelines on the Marking of Fishing Gear" (VGMFG).	High	DoF. Central / State Govts Central and State Fisheries Depts., Fishermen Associations, Net Manufacturers/ Importers Associations.	2024	2025	External (for advice, training), FSI, State Fisheries Dept. Officials, Technical, Field staff.	Periodic reports ² (6-monthly) of no. of markings.	No.of sensitization workshops organised (Approx-8-10 nos). Number of fisherfolk and net manufacturers participated. Notifications/ orders (8-10 nos)

1 Following data collection from States/UTs, Fisheries Survey of India (FSI) a lead agency identified for the GloLitter Partnerships project will submit biannual reports to D/o Fisheries, Govt. of India for furtherance.

2 The Fisheries Survey of India (FSI) a lead agency identified for the GloLitter Partnerships project will submit biannual reports to D/o Fisheries, Govt. of India for furtherance.

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.1.3	<p>ReALCraft or similar website shall be maintained for accountability of fishing gears possessed by fishers. This includes the development of a database under ReALCraft/or under a similar mobile-based application.</p> <p>Net manufacturers/ importers, will also be encouraged to register with ReALCraft / Similar website.</p>	Medium	Central and State Fisheries Depts., Fishermen Associations, Net Manufacturers/ Importers Associations.	2024	2026	External (for advice, training), FSI, State Fisheries Dept. Officials, Technical, Field staff.	Periodic report (6- monthly) of no. of fishing gears/net manufacturers/i mporters registered	<p>Database developed under ReALCraft/ or under mobile based application.</p> <p>Data input to database and/or website of fishing gears owned by fishers, and registration of net manufacturers/imp orters.</p>
Action 5.1.4	Sensitization of fishers on ALDFG reporting.	High	DoF, FSI. Central / State Govts.	2024	2025	FSI, DoF, State Fisheries Dept. Officials, Technical, Field staff.	Periodic report (6- monthly) of no. of sensitization programmes conducted.	No.of sensitization workshops organised. Number of fisherfolk participated. Notifications/orders .
Action 5.1.5	Waste reception facilities and waste recycling units to be incorporated in Fishing Harbours (FHs)/Fish Landing Centres (FLCs). This includes establishing standardized operating procedures (SOPs), guidelines, waste management best practices, operational standards and compliance mechanisms.	High	Central / State Govts should notify; State Fisheries Dept. Officials.	2024	2026	FSI, Ports, State Fisheries Dept. Officials, Technical, Field staff.	SOPs and guidelines: completion of stakeholder consultations, d raft documents finalized, and official adoption of the SOPs and Guidelines	Database: on number of facilities adopting the SOPs/Guidelines, compliance rates and waste collection/recyclin g volume data etc.
Action 5.1.6	Identification of best waste management practices and development of guidelines for recycling and reuse of recovered ALDFG.	Medium	Central/ State Govts, ICAR and other research institutes, private entrepreneurs.	2024	2026	IMO, FAO guidelines, if any. Research staff.	Outcome of policies and training: completion of stakeholder	Adoption of the guidelines by relevant agencies and stakeholders (e.g., Fisheries

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
							consultations, draft documents finalized, and official adoption of the guidelines.	Departments, waste management companies). Increase in the volume of ALDFG recovered and recycled using the developed guidelines
5.2	Actions related to institutional capacity and reforms							
Action 5.2.1	Creation of a permanent National Task Force (NTF) for implementation and monitoring of National Action Plan .	High	FSI, MFAH&D, State Fisheries Depts., DGS, MoPSW, MoEF&CC, other Ministries / Dept. / Insts.	2024	2026	Central /State govt. officials; Scientists, representatives from administrative departments.	Official orders, News articles, Publications	Official orders, Publications.
Action 5.2.2	Creation of infrastructure facilities, computers, etc., at FSI / DoF, and other Depts./ Institutes for implementation of the NAP	High	FSI, DoF, MFAH&D, State Departments, and other Institutes as required.	2024	2026	Computers, printers, data loggers, etc.	The establishment and operationalization of a dedicated SBMPL cell within Fisheries Survey of India (FSI	Government orders, monthly Progress reports, and Key Milestones etc.

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.2.3	Installation of plastic waste reception facilities (PwRFs) in Fishing Harbours (FH) and Fish Landing Centres (FLCs) for MPL collection / disposal. Transport of reuse and recycling of retrieved fishing gear and other plastic litter	High	NTF, DoF, FSI, MFAH&D, Ministry of Ports, Shipping & Waterways, Central / State Fisheries Depts.	2024	2026	FSI, DoF, Central and State Fisheries Dept. and Port officials.	No. of Fishing Harbors (FHs)/Fish Landing Centre (FLCs)/Ports for enhanced PwRFs.	Reports on number of Fishing Harbors (FHs) and Fish Landing Centres (FLCs) provided with PwRFs. Database on Marine Plastic Litter (MPL) generated and recycled.
Action 5.2.4	Assessment of MPL from ships. Development of National (Georeferenced) database on source, sink, quantity and quality of sea-based marine plastic litter.	High	FSI, NTF, DoF, DG Shipping, State Depts., Research institutes in collaboration with other stakeholders	2024	2026	FSI, DoF, DG-Shipping Softwares - GIS, RDBMS, statistical, training, Scientists, Technical, Research Scholars, Fishers, NGOs.	Creation of database on sea-based Marine litter, Research articles, Brochures, Reports	Database Publications
Action 5.2.5	Skill upgradation of personnel in respective project implementing agencies including use of underwater cameras in clear and appropriate waters.	High	FSI, NTF, State Depts.	2024	2026	Central /State govt. officials; Scientists, Technical staff	Training programs (Approx.8-10 nos)	Pre- and post-training assessments
Action 5.2.6	Incentive based schemes from Government, routed through State Fisheries Department for collection, and surrender of damaged, unrepairable nets/ALDFG and recycling of marine litter (database	High	FSI, Dept. of Fisheries, MFAH&D, Central/State/UT Fisheries Departments, Fishers, Fishermen organizations/	2024	2026	FSI, DoF, Central/ State Fisheries Dept. Officials, , technical, field staff, Fishers.	Periodic report (6-monthly) of the No. of cases of reported ALDFG; data on locations of loss; number of	Orders/Notifications, Database, total incentives disbursed.

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
	creation and recycling options can be coordinated by State officials)					Incentives in this regard will be worked out by NTF members in consultation with relevant stakeholders for ALDFG/retrieved net and for disposal of litter collected as per requirement.	surrendered nets, number of incentives given.	Data based will be developed under ReAL Craft/ or a mobile based application will be developed.
Action 5.2.7	Radio Frequency Identification (RFID) / Radio (or smart) buoys technology for tracking of gear/ FADs retrieval.	Medium	FSI, CIFT, CIFNET, ICAR, Central and State government Depts/ other Institutes	2024	2026	Central / State Govt. Officials, Institutes, Researchers, Entrepreneurs	Number of buoys deployed and vessels equipped with tracking technology. Percentage of lost gear successfully retrieved using tracking data.	Reviews Tracking data analysis and retrieval reports. Monitoring and surveys of ghost fishing occurrences in targeted areas. Stakeholder feedback
Action 5.2.8	Research and Development for alternative, innovative technologies / reuse/recycle/mitigation technologies, etc.	Medium	FSI, CIFT, CIFNET ICAR, Central and State government Depts/ other Institutes	2024	2026	Central / State Govt. Officials, Institutes, Researchers, Entrepreneurs	Number of research projects initiated and completed. Development of promising alternative	Reports and scientific publications, Stakeholder engagement and feedback

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
							materials, technologies, or reuse systems Pilot testing and evaluation of proposed solutions.	
Action 5.2.9	Harbour level, District and State Level subcommittees be constituted, including fisher societies, NGOs, State officials, etc., for implementation of MPL control and reuse/recycle activities.	Medium	Central / State Govts should notify; State Govt Depts., Officials.	2024	2026	State Government Officials, Technical, Field staff, Fishers, other stakeholders, NGOs.	Number of subcommittees established at harbor, district, and state levels. Frequency of subcommittee meetings. Development and implementation of action plans for MPL control and reuse/recycle activities Number of training programs and awareness campaigns conducted	Official orders, feedback survey, quarterly progress reports. Monitoring data on waste collection, recycling rates etc.
5.3.	Actions related to education and outreach							

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.3.1	Project inception and conclusion workshops.	High	FSI, DoF, Central/ State Govts. Central / State Govt. officials, Coast Guard, MARPOL experts, Research Institutes.	2024	2026	Central / State Govt. Officials, Research Institutes, Coast Guard, Researchers, technical, field staff.	Pre and Post evaluation: No. of workshops conducted Level of participation and no. of participants in the workshops	Evaluation report Pre- and post-workshop surveys, Workshop documentation and report, Feedback from stakeholders
Action 5.3.2	Implementation of flagship SBMPL coastal clean-up projects at Central/State level.	High	FSI, DoF, Central/ State Govts. Central / State Govt. officials, Coast Guard, MARPOL experts, Research Institutes.	2024	2026	Central / State Govt. Officials, Research Institutes, Coast Guard, Researchers, technical, field staff.	Volume of Plastic litter collected Length of coastline cleaned, No. of participants, Community engagement	Reports, Feedback and survey forms
Action 5.3.3	SBMPL awareness programs in beaches/ landing centres / harbours along Indian coast on SBMPL data collection methods, for database development.	High	FSI, DoF, Central/ State Govts. Central / State Govt. officials, Coast Guard, MARPOL experts, Research Institutes.	2024	2026	Central / State Govt. Officials, Research Institutes, Coast Guard, Researchers, technical, field staff.	Awareness programs (Approx.8-10 nos) No. of participants reached. Media coverage	Pre-and post-programme assessment / Feedback and survey forms

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.3.4	Inclusion of topics on marine litter, international conventions (MARPOL, LP, FAO VGMFG etc.), national laws, acts, rules and regulations, impacts on marine environment and marine biodiversity, etc., in syllabus of students at school (such as NCERT) and college level.	Medium	FSI, DGS, MoEFCC, Central and State Education Departments, NCERT, Academic Institutions	2024	Continuous	University / Academic staff, Scientists, student representatives	Academic syllabus	Pre- and post-assessments, quizzes, and competition Surveys and interviews with students, teachers and parents.
Action 5.3.5	Organising 'Hackathon' for college students for novel ideas for addressing sea-based marine plastic litter	Medium	FSI, DGS, MoEFCC, Central and State Education Departments, Academic Institutions	2024	2025	University / Academic staff, Scientists, student representatives	No. of programmes conducted (Approx 10).	Pre- and post-assessments, quizzes, and competition Surveys and interviews with students and teachers.
Action 5.3.6	Production of multimedia awareness campaigns, materials on source and impacts of MPL for sensitisation for public, fishers, boat owners, school and college students, social media, radio and TV.	Medium	FSI, NTF, Fisheries Depts., Central and State Education Departments, Academic / Research Institutions.	2024	2025	Scientists, Experts, Students, Technical staff,	No. of multimedia produced, sign boards, no. of views, telecasts	Feedback through surveys and polls, News articles
Action 5.3.7	Develop and promote alternatives to synthetic fishing gear.	High	Central, State Govt. and other Research institutes in collaboration with other stakeholders.	2024	2026	CIFT, Scientists, Technical, State FDs, Researchers.	Number of research projects/studies initiated on alternative materials and gear designs and Number of prototypes developed and tested for	Publications Reports

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
							different fishing gear types.	
Action 5.3.8	Develop and implement gear marking/tracking systems.	High	Central, State Govt. and other Research institutes in collaboration with other stakeholders.	2024	2026	CIFT, CIFNET Scientists, Technical, State FDs, Researchers.	Number of research projects/ studies initiated on development of gear marking/tracking system. Percentage of fishing vessels or gear complying with the marking/tracking system.	Publications Reports
Action 5.3.9	Develop techniques/designs for SBMPL collection and recovery from the sea.	High	Central, State Govt. and other Research institutes in collaboration with other stakeholders.	2024	2026	CIFT, Scientists, Technical, State FDs, Researchers.	Number of research projects/studies initiated on development of techniques /designs for SBMPL collection and recovery from sea. Number of prototypes developed and tested .	Publications Reports

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.3.10	R & D - Ecotoxicity assessment of SBMPL/ microplastics (MP) from sea-based activities; impact on marine organisms and ecosystems.	Medium	FSI, DoF, ICAR/ Research Institutes	2024	2026	Lab and field equipment, Consumables, chemicals, etc.	Research publications, communications (Technical reports and progress reports etc)	Publications, Reports Visual outputs for awareness creation
5.4.	Actions related to regional and global cooperation							
Action 5.4.1	Training on FAO Voluntary Guidelines on the Marking of Fishing Gear, recovery of abandoned and lost fishing gear, etc., and other aspects of combating MPL.	High	NTF, FAO, FSI, Ministry of Fisheries.	2024	2026	External experts, India Govt. officials.	No. of training programmes conducted. (Approx.4)	Pre-and post-programme assessment / Feedback and survey forms
Action 5.4.2	Explore possibilities of collaboration, knowledge sharing and control/mitigation of SBMPL with regional countries or bilateral programmes and global programmes like GloLitter, IMO, etc.	High	NTF, IMO, Regional countries, Ministries.	2024	2026	External support, India, Central and State Dept. officials, funds.	Post project evaluation Number of potential partners identified and contacted, No. of programmes conducted (approx. 4)	Feedback Reports, MoUs/ Agreements if any
Action 5.4.3	Exchange of expertise among member countries (Indian Ocean Rim Association (IORA) and IMO) on devices and mechanisms to collect SBMPL in beaches and hotspots in oceans.	Medium	NTF, Ministries.	2024	2026	External , India, Central and State Dept. officials, funds.	Post project evaluation Number of potential partners identified and contacted, No. of programmes conducted	Feedback Reports, Proof of exchange of Best Management Practices MoUs/ Agreements if any
5.5.	Actions related to private sector engagement							

	Description	Priority Level (high, medium, low)	Responsible authority	Start Date	End Date	Resources required (staff, tech, etc.)	Progress indicators	Methods of verification
Action 5.5.1	Private and public plastic collection and recycling units in landing centres. Utilization of collected plastic waste for recycling/re-use	Medium	Fishing vessel owners, Fisher Associations, Central and State Governments or any other key stakeholder	2024	2026	Private entrepreneurs, State Governments.	Total volume of plastic waste utilized	Reports Database on Marine Plastic Litter (MPL) recycled/ re-used .
Action 5.5.2	Engaging Fisherwomen in SBMPL recycling activities like collection, classification, grading, shredding of plastics, etc.	Medium	Department of Fisheries of States, Fisherwomen Associations.	2024	2026	Central and State Government officials, NGOs, fisherwomen.	No.of fisherwomen engaged in activities	Reports and database generated.

5.6. Support required from IMO and FAO for NAP implementation

While implementing the NAP, NTF shall require guidance from IMO, and FAO in various aspects as indicated below:

NAP Action	Task
5.1.2	Marking of fishing gear based on “FAO Voluntary Guidelines on the Marking of Fishing Gear”
5.1.6	Identification of best waste management practices for recycling and reuse of recovered SBMPL, ALDFG.
5.2.5	Skill upgradation of personnel in respective project implementing agencies as required for Govt and other staff.
5.3.2 & 5.3.3	SBMPL coastal cleanup, workshops, training in data collection methodology, for database development.
5.3.7	Develop and promote alternatives to synthetic fishing gear
5.3.8	Development of gear markers/trackers
5.3.9	Techniques/designs for SBMPL collection and recovery from sea.
5.4.1	Training/Guidance on FAO Voluntary Guidelines on the Marking of fishing gear, recovery of abandoned and lost fishing gear, etc., and other aspects of combating SBMPL.
5.4.2	Explore possibilities of collaboration, knowledge sharing and control/mitigation of SBMPL with regional countries or bilateral programmes and global programmes like GloLitter, IMO, etc.
5.4.3	Exchange of expertise among member countries (IORA and IMO) on devices and mechanisms to collect SBMPL on beaches and hotspots in oceans.

6. Expected Outputs and Outcomes

- Reduction and control of SBMPL including ALDFG from shipping and fishing activities.
- Infrastructure development at fishing harbours/ fish landing centres for collection of SBMPL, storage and disposal for reuse, recycle, etc.
- Assessment of extent (and hotspots) of SBMPL in the Indian coasts.
- Removal of SBMPL from Indian seas to an approximate quantity of 10 tonnes in a year for four years.
- Awareness creation among the stakeholders including fisherfolk, industries, students, various departments, NGOs and public at large, using short films, pictures, multimedia posts, on marine plastic pollution and their ill effects in marine organisms, marine environment and human health.
- Georeferenced interactive map / database for analysing the sources and sink of MPL including ALDFG and assessment of quantity and quality of MPL including ALDFG and development of mitigation measures.



(http://www.cmfri.org.in/Beach_Litter_Map_Final_4/Beach_Litter_Map_Final_4.html#6/15.657/81.607)

- Assessment of impact of sea-based marine plastics / sea-based marine microplastics in marine organisms and human health.
- A thorough understanding of climatic and oceanographic factors influencing the distribution of SBMPL for predictive modelling and forecasting.
- Significant achievement in research / private sector on EPR and innovations on alternative biodegradable materials for fishing gear and technologies for reuse and recycling.
- By adopting suitable strategies, schemes, the final goal for reducing marine plastic debris by 70% in 2026 can be achieved.
- Implementation of strategies to achieve the UN Sustainable Development Goals (UN SDG) 14.1 in respect of the nation. (Target 14.1: Reduce marine pollution. UN definition: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution).

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Annexure 1 – INDIA Country Assessment Report on sea-based MPL with specific reference to shipping and fisheries

1. Country Context

Key facts and geographical scope of the Assessment

1.1 General Information

Population: 1.40 billion (Approx)	Coastline (km) 8118 km (Source: Handbook of Fisheries Statistics,2022)
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India coastline comprises of India peninsular mainland, Lakshadweep Islands (Arabian Sea) and Andaman & Nicobar Islands (Bay of Bengal, Andaman Sea).

1.2 Language:

Hindi and English are used for official purposes, besides State languages. There are 22 different languages recognised by Constitution of India.

(<https://www.india.gov.in/india-glance/profile>)

1.3. Brief description of governance system

India has a federal system of governance. Central and State governments have constitutional status. People of States elect Members of Legislative Assembly and Members of Parliament. Both Parliament at Central level and Legislative Assemblies at State level have powers to enact laws, pertaining to the subjects concerned. It has legislative, executive and judicial systems.

President and Vice-President are elected by Members of Legislative Assembly and Members of Parliament. Besides State Assemblies and National Parliament, Judiciary also exists in States and Supreme Court as its apex body.

Overview of policies and legislation relating to maritime transport, fishing sector, marine environment protection and waste management, in particular in relation to sea-based marine plastic litter

Provide a brief description of existing prevention and/or reduction policies/laws of marine plastics (from international shipping, domestic shipping, fisheries and ports).

National Maritime Transportation Policy	
Major Industries Do your major industries include any of the following?	Imports and Exports Do your imports/exports include any of the following?
Crude oil <input checked="" type="checkbox"/>	Crude oil <input checked="" type="checkbox"/>
Gas or natural gas <input checked="" type="checkbox"/>	Gas or natural gas <input checked="" type="checkbox"/>
Dangerous goods (chemicals) <input checked="" type="checkbox"/>	Dangerous goods (chemicals) <input checked="" type="checkbox"/>

Fishing	<input checked="" type="checkbox"/>	Other	<input type="checkbox"/>
Shipbuilding or Ship repair	<input checked="" type="checkbox"/>		
Tourism involving domestic ferries or passenger ships	<input checked="" type="checkbox"/>		
Other	<input type="checkbox"/>		

Passenger Transportation: Data currently not available.

(No. per annum)

Maritime Tourism: Data currently not available.

(No. of cruise ships per annum)

National Maritime Transportation Policy

Adopted

In preparation

No information

India prepares a 10-yearly vision document. The last one called Maritime Vision 2030 was released in 2021. It presents India's vision, plans and initiatives to ensure a Safe, Sustainable and Green Maritime Sector.

The mission and vision of the Directorate General of Shipping is available at https://www.dgshipping.gov.in/Content/RTI.aspx?menu_id=244

Vision statement: To be recognized globally as a highly effective, efficient, responsible and progressive maritime administration.

Mission Statement:

Provide an effective supervisory and regulatory regime conducive to: achieve, safe, efficient and secure shipping; protect the marine environment; all round growth of maritime university.

Provide support to the Government of India in developing and implementing a holistic and integrated maritime development program that has a positive impact on national economy;

Develop and Implement policies that facilitate an environment which is conducive for promoting an investment in the expansion of a modern merchant fleet under the Indian flag and develop globally competitive ship building and repair facilities;

Develop and sustain a high-quality human resource management catering to the needs of global including national maritime industry for competent seafarers;

Ensure good governance by adhering to the highest standards of integrity, quality and efficiency in delivery of shipping services through constant innovation, technology upgradation and value addition.

Develop measures to ensure compliance of relevant international instruments relating to safety and security of ships, protection of environment and welfare of seafarers.

Maritime Strategy & Policy: (brief description)

To foster the development and ensure the efficient maintenance of an Indian Mercantile Marine in a manner best suited to serve the national interests and for that purpose to establish a National Shipping Board to provide for the registration, Certification Safety and Security of Indian ships and generally to amend and consolidate the law relating to Merchant Shipping. Further the Government of India has also formulated and released Maritime India Vision 2030. Maritime India Vision 2030 envisages taking India to global maritime leadership. Identifies over 150 initiatives across 10 themes, covering all the facets of the Indian Maritime Sector and is a comprehensive effort to define and meet the national maritime objectives.

National Maritime Administration

Focal Point (Ministry): (Name and brief contact details)

GOPIKRISHNA CHOCKALINGAM
Member Delegate-National Task Force,
Engineer & Ship Surveyor cum DDG (Tech)
Directorate General of Shipping,
I Think Techno Campus, 9th Floor, BETA Building, Kanjumarg (East),
Mumbai - 400042
INDIA
Tel No: 0091-22-25752036

Maritime Legislation

National Legal Framework

National Merchant Shipping Act / Merchant Marine Code:

Adopted Not adopted In progress

Merchant Shipping Act 1958 as amended from time to time.

Enforcement Monitoring Authority:

Director General of Shipping,
i-Think Techno Campus, 9th Floor, Beta building, Kanjurmargin (East), Mumbai 400042.
INDIA

Legal Framework for Marine Environment Protection (MARPOL)

MARPOL Annexure V ratified by India on 31-12-1998 and entered into force on 11-09-2003.

National Legislation: Merchant Shipping Act 1958 as amended from time to time.

Adopted Not adopted In progress

Enforcement Monitoring Authorities: (Please list)

Directorate General of Shipping, Ministry of Ports, Shipping and Waterways,
i-Think Techno Campus, 9th Floor, Beta building, Kanjurmargin (East), Mumbai 400042.
INDIA

Flag State Implementation & Port State Control Responsibilities

Flag State Implementation

No. of Surveyors:	35* *They are also PSCOs	No. of Ship Detentions (under National Flag): (last 2 years). Specify type of vessels (cargo, fishing, passenger etc.)	In 2020: 17 vessels In 2021: 28 vessels
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In 2020: (17) Oil Tanker: 2, Tug boat: 5, Chemical Tanker: 1, General Cargo: 4, Offshore vessels: 2, Other types: 3

In 2021: (28) Oil Tanker: 2, Tug boat: 12, Chemical Tanker: 1, General Cargo: 4, Offshore vessels: 6, Other types: 3

Port State Control (PSC) Implementation					
MoU(s) on PSC:					
Abuja MoU	<input type="checkbox"/>	Paris MoU	<input type="checkbox"/>		
Black Sea MoU	<input type="checkbox"/>	Riyadh MoU	<input type="checkbox"/>		
Caribbean MoU	<input type="checkbox"/>	Tokyo MoU	<input type="checkbox"/>		
Indian Ocean MoU	<input checked="" type="checkbox"/>	Viña del Mar or Latin-American Agreement	<input type="checkbox"/>		
Implementation of Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing					<input checked="" type="checkbox"/>
It is under consideration. (as per Fisheries Bill 2020)					
Enforcement Monitoring Authorities: (Please list)					
NA (Within the territorial waters of 12 NM the enforcement is by the respective Port Coastal States through State Marine Fishing Regulation Acts. In the area beyond 12 NM and within EEZ it is the responsibility of the Ministry of Defence through Coast Guard and Navy.)					
No. of Port State Control Officers:					
Nil. Though there are 35 PSCOs, Illegal, Unreported and Unregulated Fishing (IUU) is not monitored by PSCOs.					
Main and Secondary Ports: (Please list, if known)					
Major Fishing Harbours – 07; Fishing Harbours - 58					
Major Fishing Harbours (07): West Bengal: Roychowk, Petuaghat; Odisha: Paradip; Andhra Pradesh: Visakhapatnam; Tamilnadu: Madras; Kerala: Cochin; Maharashtra: Sassoon Dock.					
No. of Fish Landing Facilities:	1363	No. of Cargo Terminals:	Data currently not available	No. of Cruise Ship Terminals:	Data currently not available
Marine Environment Protection					
Pollution Prevention					
Port Reception and Waste Management Facilities: Yes, available at 63 facilities (List in Annexure A). All these PRFs have facilities for reception of ship generated wastes including plastic material/wastes. Fisher gears are not brought to PRFs.					
Available Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
If yes, which Annex of the MARPOL Convention is applicable?					
As per MARPOL Annex- I, II, IV, V & VI					

Name of Ports registered

Total 63 ports are registered on Portal as of now; the list is as follows in alphabetical manner.

No.	Name	No.	Name
1	Adani PetronetDahejPort Pvt Limited	34	JSW Jaigarh Port Ltd.
2	Adani Ports and SEZ Ltd,Mundra	35	Kakinada Anchorage Port (Government of Andhra Pradesh)
3	AEML DahanuPort - Adani	36	Kakinada Deep Water Port (sea port)
4	Ambuja Cement Ltd, - Muldwarka	37	Kamarajar Port Ltd
5	AmbujaMagdalla Jetty	38	Karaikal Port Pvt Ltd.
6	AmbujaUlwaJetty	39	Karwar Port
7	AMNS India Ltd, Hazira, Surat (Gujarat)	40	Kattupalli Port-Ennore Chennai
8	Angre Port Pvt Ltd	41	Kolkata Port Trust-Kolkata Dock system
9	AzhikkalPort	42	Kollam Port
10	Bedi Group of Ports - owned by GMB	43	Krishnapatnam Port (KPCL)
11	Beypore Port	44	Magdalla Group of Ports -owned byGMB
12	Bharat Oman Refineries Ltd SPM Sikka	45	Mandvi Group of Ports -owned by GMB
13	Bhavnagar Group of Ports -Owned by GMB	46	Mormugao Port Trust
14	Captain of Ports Goa	47	Mumbai Port Trust
15	ChemplastCuddaloreVinyls Terminal	48	NavLakhi Group of Ports- owned by GMB
16	ChemplastSanmar Limited Terminal Karaikal	49	New Mangalore Port Trust (NMPT)
17	Chennai Port Trust	50	Nhava Supply Base
18	Cochin Port Trust	51	Okha Group of Ports - Owned by GMB
19	Dahej RORO Jetty owned by GMB	52	Paradip Port Trust
20	Dahej Group of Ports - Privately owned terminals	53	Porbandar Group of Ports -owned by GMB
21	Deendayal or Kandla Port Trust	54	Port Management Board, Andaman and Nicobar Islands
22	Dhamra Port Company Limited	55	Reliance Hazira Shipping and Offshore Division
23	Ennore Minor Port -Coromandel	56	Revdanda JSW Steel (Salav) Ltd
24	Essar Bulk Terminal Ltd-Surat	57	Sanghi Port
25	Essar Bulk Terminal-Salaya	58	Sikka Ports and Terminals Ltd.
26	Finolex Terminal Ratnagiri	59	Thirukkadaiyur Port
27	Gangavaram Port	60	UltraTech Captive Jetty Sewagram
28	Gopalpur Ports Ltd	61	UTCL Captive Berth - Pipavav
29	Gujarat Pipavav Port Ltd	62	V. O. Chidambaranar Port Trust Tuticorin
30	Haldia Dock Complex - KoPT.	63	Visakhapatnam Port Trust
31	Hazira (Surat) Port		
32	Jawaharlal Nehru Port trust (JNPT)		
33	JSW Dharamtar Port		

Information on dumping under London Protocol (LP)

Legal Framework for Dumping at sea (LP)					
National Legislation:					
Adopted <input type="checkbox"/>		Not adopted <input type="checkbox"/>		In progress <input checked="" type="checkbox"/>	
Enforcement Monitoring Authorities: (Please list)					
Ministry of Environment, Forests and Climate Change is piloting the legislation and ratification of London Protocol. Dumping related to ship and ports have been covered under the New Legislation of Merchant Shipping Bill, which is under discussion with the Ministry of Law, Government of India.					
Maritime / Fisheries Training					
Competencies (STCW 1978 and STCW-F)					
Authority Issuing Certificates of Competency:					
Towards Maritime Training, Directorate General of Shipping issues the Certificate of Competency as per STCW98 as amended. STCW-F still in progress.					
No. of Training Centers for officers for fishing vessels:	3		No. of Training Centers for officers for other vessels:	156 (Merchant Shipping)	
No. of Certified Officers	89525 (Merchant Shipping)		No. of Certified Ratings	116262 (Merchant Shipping)	
Training Centres: There are about 75 Pre Sea and 81 Post Sea institutes, for Merchant Shipping as per the link attached. http://220.156.189.33/esamudraUI/loadINDoSAppInExt.do?method=loadIndexPage					
Training facilities at CIFE, CIFT, CMFRI, CIFNET and state level fisheries training centres will be used for imparting training.					
National Fisheries Policy					
Major Industries			Imports and Exports		
Do your major industries include any of the following? Please include your national definition of industrial/large scale fisheries.			Do your imports/exports include any of the following?		
	Import	Export		Import	Export
Longline	<input type="checkbox"/>	<input type="checkbox"/>	Longline	<input type="checkbox"/>	<input type="checkbox"/>
Purse seine	<input type="checkbox"/>	<input type="checkbox"/>	Purse seine	<input type="checkbox"/>	<input type="checkbox"/>
Seine nets	<input type="checkbox"/>	<input type="checkbox"/>	Seine nets	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Trawls	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trawls	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gillnets and entangling nets	<input type="checkbox"/>	<input type="checkbox"/>	Gillnets and entangling nets	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traps	<input type="checkbox"/>	<input type="checkbox"/>	Traps	<input type="checkbox"/>	<input type="checkbox"/>
Hooks and lines	<input type="checkbox"/>	<input type="checkbox"/>	Hooks and lines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Fishing Policy					

Adopted <input checked="" type="checkbox"/>	In preparation <input type="checkbox"/>	No information <input type="checkbox"/>
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National Fisheries Policy, 2017 is adopted.

Does the National Fishing Policy include any specifications / initiatives aiming to prevent and/or reduce marine plastic litter?

No

Does the National Fishing Policy include any specific actions/initiatives aiming to prevent and/or ALDFG?

No

National Fishing Administration

Focal point (Ministry): (Name and brief contact details)

GloLitter National Focal Point: Chairperson, Ms Neetu Kumari Prasad, IAS , Joint Secretary (Marine Fisheries), Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Krishi Bhawan, New Delhi – 110 001, INDIA.

Strategy & Policy: (brief description regarding prevention and/or reduction of marine plastic litter and/or ALDFG)

Section 6.6.2 of the National Fisheries Policy, 2020, recognizing “abundance of solid waste and in particular, plastics (especially, micro-plastic particles) have increased manifold in the sea” affirmed “Strengthening regulatory mechanisms to control pollutants, including plastics, and to encourage leading by example by taking necessary measures to reduce pollution from fishing”.

Fishing Legislation

National Legal Framework

Fishing Act / Code:

Adopted Not adopted In progress

Does the Fishing Acts/ Codes include provisions to prevent and/or reduce marine plastic litter? If yes, please list them.

No.

Does the Fishing Acts/ Codes include provisions to prevent and/or reduce abandoned, lost or otherwise discarded fishing gear? If yes, please list them.

No.

However, in the draft “INDIAN MARINE FISHERIES BILL, 2021” proposed by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying (MFAH&D), there is a provision for confiscating the abandoned fishing gear by the foreign fishing vessels while fishing in the Indian EEZ beyond 12 NM.

Enforcement Monitoring Authority:

Indian Coast Guard has been nominated as coordinating authority for Oil spill response in maritime zones of India.

Fisheries is a state subject, at regional levels, fisheries development is governed by respective State Fisheries Departments. All the Coastal States and Union Territories regulate their marine fisheries through Marine Fishing Regulation Acts (MFRAs).

Description of key maritime and fishing sector characteristics

This should briefly provide an overview of the maritime/fisheries industry in terms of international shipping and domestic shipping fleet, fisheries fleet, ports and cargoes/catch received at main and secondary ports.

Registered Cargo Fleet	No.	GT		No.	GT
Dry Cargo Ships	250	3,826,164	Passenger Vessels	120	179712
Tankers	156	6,308,161			
Other	981	2,908,817			

Cargoes	Volume	USD	Total catch	Volume	USD
Port 1	Data currently not available	Data currently not available	Fish type 1	Data currently not available	Data currently not available
Port 2			Fish type 2		
Port 3					

Fishing Fleet:

Updated information on fisheries fleet can be collected from the ReALCraft (Registration And Licensing of Fishing Craft) database of the Department of Fisheries, Government of India. [Real Craft \(fishcraft.nic.in\)](http://fishcraft.nic.in)

'ReALCraft' is a web enabled workflow based online application system for Vessel Registration under MS Act and License Certificate under MFR Act to the fishing vessels operating along the Indian coast. With the total registration, the Security Agencies, citizens and other approved Government Machineries would be able to track the status of any Registered Vessel at any point of time from anywhere, through internet or via SMS. It is a web-enabled solution under open-source technology. ReALCraft or similar database shall be designed as per requirement.

ReALCraft will also be useful to regulate the movements of fishing vessels, to strengthen security of fishermen in the sea and also coastal security. This will also enable to prevent IUU - Illegal, unregistered and un-reported vessels in the territorial waters.

ReALCRaft
(Registration And Licensing of Fishing Craft)

Category	Vessel Registration RC	License for Fishing LC
Deep Sea Fishing Vessel	149	94
Motorized non-Mechanical	143656	109071
Motorized Mechanical	64476	51871
Non-motorized	48763	25851

State-wise landing details are available in Handbook on Fisheries Statistics: 2022.

Registered Fishing Fleet Industrial/large scale ³	No. vessels	No. fishers	Fishing Fleet Artisanal-48,686/ (Registered) small scale ⁴ -1,42,532 (Registered)	No. vessels	Registered/ Estimated?	No. fishers	Registered/ Estimated?
Information is not available							
Surrounding Nets			Surrounding Nets	Only total numbers of vessels are available, but no information is available regarding number of vessels or fishers using the gears listed			
Seine Nets			Seine Nets				
Trawls			Trawls				
Dredges			Dredges				
Lift Nets			Lift Nets				
Falling Gear			Falling Gear				
Gillnets and Entangling nets			Gillnets and Entangling nets				
Traps			Traps				
Hooks and lines			Hooks and lines				
Other gears *			Other gears *				

Overview of regional cooperation related to marine plastic litter reduction activities/agreements

Provide a short list of relevant agreements and activities related to marine plastic litter with a focus/component on sea-based sources.

Regional Cooperation and agreements

Agreement related to Marine Plastic Litter (MPL): (brief description, including regional action plans)

MoES, Government of India, has entered into agreements with Norway and UK on Marine Plastic Litter.

³ India's fisheries sector primarily operates at a small-scale and traditional level. While there's no national definition for 'industrial/large scale fishery,' few fishing practices do operate on a larger scale compared to others. However, regulations for all marine fishing activities fall under individual state-specific Marine Fishing Regulation Acts (MFRAs). These MFRAs may categorize and regulate fishing practices with varying scales within their respective jurisdictions.

⁴ Artisanal fishers typically operate small boats, often non-motorized or with limited engine power. Their fishing gear is traditional and often handmade, like nets, traps, and lines. Small-scale fishers means owner-operated or entrepreneurship fisheries other than large firms or companies, involving small amount of capital and energy and making single-day or multi-day fishing trips, to provide for subsistence, domestic consumption or for export.

Indo-Norway program Title: **Marine Spatial Planning (MSP) framework for Puducherry and Lakshadweep**

Collaborating Institute / Ministry in Norway: Norwegian Environmental Agency (NEA)
Period: 2021-2023

Short Description of the program: The Pondicherry and Lakshadweep coastlines are chosen for the Marine Spatial Planning (MSP) framework as part of the Indo-Norway (MoES-Norwegian Environmental Agency) Integrated Ocean Initiative, to balance growth alongside sustainable management of ocean resources and coastal environment preservation.

Indo-UK program Title: **Marine Litter: Fate of plastics from source to sink**

Collaborating Institute / Ministry in UK: CEFAS, DEFRA
Period: 2019-2022 (Commonwealth Litter Program cLip-1 & 2)

Short Description of the program: A collaborative study on Marine Litter through Commonwealth Litter Programme was agreed. As the standardisation of methods for sampling, processing and analysis of samples is an issue of international concern, an analytical protocol for microplastic was developed jointly. Beach monitoring for microplastics sampling and analysis was carried out by NCCR and Cefas scientists in 2019 and 2020. Microplastics sampling and analysis for coastal water, sediments, lagoon and mangrove environments are carried out jointly during 2022 & 2023. So far, four research articles have been published in peer reviewed journals.

Focal point for each agreement related to MPL (Ministry): (Name and contact details)

Dr. Pravakar Mishra, Scientist-G, National Centre for Coastal Research (NCCR), National Institute of Ocean Technology (NIOT) Campus, MoES, Velachery – Tambaram Main Road, Pallikaranai, Chennai 600100, INDIA.

Tel: +91 44 66783591; Email: mishra@nccr.gov.in NCCR

State of Knowledge on SBMPL at National and Local levels

Provide a list of relevant national and local stakeholders (government agencies, academia, expert NGOs, civil society organizations (CSO), etc.) working on building evidence of the marine plastic litter problem and their related activities with a focus/component on sea-based sources.

National and Local Stakeholders building evidence on SBMPL
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<p>Name of the initiative/project/program: (brief description, including scope and objectives, timelines and main results until today)</p>

FSI, TERI, NCCR, CIFT,

Focal point for each initiative listed: (Name and contact details)

For FSI programmes:

Dr. R. Jeyabaskaran, Director General, Fishery Survey of India, 2nd Floor, Plot No.2A, Unit No.12, New Fishing Harbour, Sassoon Dock, Colaba, Mumbai 400005. INDIA.

Tel: +91-22-22188234 (D); Email: dg@fsi.gov.in

For TERI's Programmes:

Dr Yogesh Gokhale

Area Convener of Centre for Forest Mgmt. & Governance; and Nutritional Security

TERI Western Regional Centre, Mumbai

Office No. 318, Raheja Arcade,

Sector-11, CBD-Belapur,

Navi Mumbai - 400 614

Maharashtra

Tel: (+91 22) 2758 0021, 4024 1615
 Email: terimumbai@teri.res.in

For NCCRs Programmes:

Dr.Pravakar Mishra, Scientist-G, National Centre for Coastal Research (NCCR), National Institute of Ocean Technology (NIOT) Campus, MoES, Velachery – Tambaram Main Road, Pallikaranai, Chennai 600100, INDIA.

Tel: +91 44 66783591; Email:mishra@nccr.gov.in NCCR

For CIFT's Programmes:

The Director,

ICAR-Central Institute of Fisheries Technology

CIFT Junction, Willingdon Island

Matsyapuri P.O., Cochin-682 029, Kerala

Ph: 0484-2412300

E-mail:aris.cift@gmail.com; akmu.cift@icar.gov.in

Website:www.cift.res.in

FSI's Programme on SBMPL

The Fishery Survey of India (FSI) survey vessels are actively retrieving the abandoned, lost, or otherwise discarded fishing gears (ALDFG) and other SBMPL encountered during their voyages. Several drifting and entangled longlines, and abandoned fishing nets were being collected and brought back to shore. In addition to the ALDFG, other plastic debris including polythene bags, water bottles, cans, plastic sheets etc., are also being retrieved.

The survey operations also encounter large quantities of artificial fish aggregating devices (FADs) made up of plastic bottles and coconut spadix being deployed all along the survey area. The Scientist Participants collect the data including type, number and weight of the debris collected, which will be analysed and extrapolated to the entire survey area to estimate the total mass of plastic debris in the survey area i.e., the entire Indian EEZ.

TERI,s Programme on Plastic Pollution:

The Energy and Resources Institute (TERI) during 2019 has initiated a joint project entitled 'Promotion of Countermeasures Against Marine Plastic Litter in South East Asia and India' in collaboration with the United Nations Environment Programme (UNEP). The project focused on creating awareness about marine plastic pollution and plastic waste management in Mumbai Metropolitan Region (MMR). Activities including clean-up activities, stakeholder interaction, training of trainers, and awareness workshops were conducted under the campaign called 'Rethink Plastic' which was launched by TERI.

NCCR's Initiatives on MPL:

NCCR, under the Ministry of Earth Sciences, is tackling marine plastic pollution with impressive strides. They generated the first baseline data on microplastics along India's east coast, paving the way for future monitoring and mitigation. Additionally, they established a standardized protocol for sampling and analyzing marine litter and microplastics, ensuring uniform data collection across the country. NCCR's outreach extends beyond research. Since 2018, they've organized beach clean-up drives and awareness programs at 75 beaches nationwide, actively engaging communities in combating this issue. To further empower citizen participation, they developed a mobile app and dashboard for beach litter data collection, promoting a collaborative approach.

Recognizing the global nature of the problem, NCCR actively collaborates with international partners like Cefas (UK), CSIRO (Australia), JAMSTEC (Japan), and Norway, seeking knowledge exchange and developing trans-boundary solutions for this pressing environmental challenge.

ICAR-CIFT's Programme on Plastic Pollution:

ICAR-Central Institute of Fisheries Technology (ICAR-CIFT) - the only technology Institute in India which caters to the broad spectrum of fisheries from harvest to post-harvest operations – has been in the service of the nation since 1957 under the Indian Council of Agriculture Research (ICAR), New Delhi. ICAR-CIFT has made important contributions to marine litter research, addressing diverse challenges related to fishing gear, microplastics, and responsible waste management. CIFT has published the first Indian study on fish and gear loss, now a FAO circular, and actively investigate abandoned fishing gear, ghost fishing, and microplastic contamination in seafood. Their research extends to assessing fishing-related debris along the Kerala coast and exploring the environmental impacts of discarded FRP fishing boats. ICAR-CIFT collaborates internationally, contributing to the GESAMP report on sea-based marine litter sources. Institutes efforts demonstrate a comprehensive approach to understanding and mitigating marine pollution, informing policies and management strategies for a cleaner ocean.

Annexure 2 - Data/information needed for the updated Baseline Report on Marine Plastic Litter (MPL) with specific reference to shipping and fisheries

Describe the major gaps, if any, together with the priority for each gap, as well an indication of which agency or authority is responsible for this activity. Add this information as an appendix to the Template above.

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
<p>1. Ratification of MARPOL Annex V and domestic implementing legislation/regulations</p>	<ul style="list-style-type: none"> • Dates of ratification and national implementing legislation. • Name Enforcement Monitoring Authorities. • Indicate gaps and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>11-06-2003. Merchant Shipping (Prevention of Pollution of Seas by Garbage from Ships 2009) Rules were notified on 26th November 2009.</p> <p>Director General, Shipping</p> <p>PRF: Major ports and key non major ports controlled by Central Govt; audited by Surveyors of MMD. Minor ports: controlled by State Govt; no mechanism to ensure compliance.</p> <p>Enforcement mechanism to ensure compliance by ports with respect to obligation to provide port reception facilities.</p> <p><u>Gaps</u>: Applicability of Part XI A of the MS Act 1958 to Fishing Vessels.</p>	<p>There are 3 parts to this Annex V of MARPOL with respect to enforcement:</p> <ul style="list-style-type: none"> • Survey and Certification of Indian Ships for Compliance. • Port State Inspection of Foreign Ships visiting India by MMD/DGS. • Provision of Port Reception Facilities for Garbage. <p>Ministry of Ports, Shipping and Waterways.</p> <p>Ministry of Ports, Shipping and Waterways.</p> <p>Ministry of Fisheries</p>

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> List National Maritime Transportation Policy and Administration. Indicate, gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>India prepares a 10-Yearly vision document called Maritime Vision and the last one named Maritime Vision 2030 was released in 2021. It contains a full chapter defining India's vision and plans and initiatives to ensure Safe, Sustainable & Green Maritime Sector. (MIV 2030 Report.pdf (sagarmala.gov.in))</p> <p>None</p>	<p>Ministry of Ports, Shipping and Waterways.</p>
	<ul style="list-style-type: none"> Evaluate existing mandates, competencies, and capacities of relevant agencies relating to MARPOL Annex V, including the adequacy of Port Reception Facilities and current waste management practices. Indicate gaps, needs and priorities. 	<p>Mandate for relevant enforcement agencies is derived from Merchant Shipping Act, 1958. Competencies of Surveyors are derived from recruitment rules. Training policies enable acquiring international levels.</p> <p>IMO Global Integrated Shipping Information System () provides the PRF available globally. PRF details should be provided / updated continuously, in this website.</p> <p>Further, SwachhSagar India website may also be explicitly updated to provide information and for monitoring specifically for plastics/ SBMPL.</p>	<p>MMD/DG Shipping</p> <p>Ministry of Ports, Shipping and Waterways.</p>
	<ul style="list-style-type: none"> To the extent known list number of trained Port State Control Officers (in MARPOL Annex V) in each main port. 	<p>There are about 35 trained PSCOs in the Mercantile Marine Departments (MMD) located at various regions (Mumbai, Kolkata, Chennai, Cochin, Kandla, Goa, Haldia, Jamnagar, New Mangalore,</p>	<p>DG Shipping/ Ministry of Ports, Shipping and Waterways</p>

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> If none, or more is needed, list training necessary. 	<p>Paradeep, Portblair, Tuticorin and Visakhapatnam). There are 12 major ports and 200 + non major ports in India. Main ports are covered by PSCOs from respective jurisdictional MMD.</p> <p>Nil.</p>	
2. Operational / technical practices aimed at reducing discharges of plastic litter from ships (notably in the context of MARPOL Annex V)	<ul style="list-style-type: none"> Identify and list any existing incentives to use Port Reception Facilities, notably for repaired or used fishing gear, if any. Identify gaps in existing regimes. 	<p>No incentives are being provided under Schemes.</p> <p>Incentive schemes shall be developed to ensure that all ships/Fishing vessel/Fishing Boats use PRFs.</p>	Ministry of Ports, Shipping and Waterways, / Dept. of Fisheries
	<ul style="list-style-type: none"> List current guidance documents used to implement MARPOL Annex V. Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>Documents such as Engineering Circulars (1 and 2 of 2013), DGS Order No. 02 of 2018, DGS Order No. 05 of 2019 and Addendum No. 1 to DGS Order No. 05 of 2019.</p> <p>Issuance of Circular for implementation of Amendments to MARPOL Annex V (HME substances and Form of Garbage Record Book) via MEPC 277(70).</p>	<p>DG Shipping</p> <p>DG Shipping</p>
	<ul style="list-style-type: none"> Identify and list the use of on-board garbage management plans, incl. existing record keeping practices for handling of garbage by ships under 400 GT (domestic fleet only). Note for ships > 400 GT, it is mandatory. 	<p>IMO Marine Environmental Protection Committee (MEPC) held its 79th session (MEPC 79) from 12th December to 17th December, 2022 where in the following has been approved towards amendments to MARPOL Annex V.</p>	<p>DG Shipping / Ministry of Ports, Shipping and Waterways</p>

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
		<p>Requirement for Garbage Record Book applies to ships of 100 GT and above (Currently it is applicable from 400 GT).</p> <p>Discharge of garbage for safety of ship or accidental loss of garbage for ships of less than 100 GT is to be reported in official log book.</p> <p>For 100 GT and above it is required to be reported in Garbage Record book. Entry into force of date of this amendment: 01 May 2024.</p>	
	<ul style="list-style-type: none"> Identify and list existing national or local on-board best waste management practices or guidelines, if known. 	<p>The existing best waste management practices are:</p> <p>Prohibition on carriage and usage of items made of Single Use Plastics on Indian Ships available, Facilitation of provision of Port Reception, and Facilities and tracking end disposal of waste through on-line portal called Swachh Sagar.</p> <p>Both are available at DG Shipping website. https://www.dgshipping.gov.in</p>	<p>DG Shipping /Ministry of Ports, Shipping and Waterways</p>
<p>3. Ratification of London Protocol and domestic implementing legislation/regulations</p>	<ul style="list-style-type: none"> Dates of ratification and national implementing legislation. If no dates, then the relevant National Environment Policy. 	<p>India is still to ratify the London Protocol.</p> <p>National Environment Policy 2006 is a response to India's national commitment to a clean environment, mandated in the Constitution in Articles 48 A and 51 A (g), (DPSP) strengthened by judicial interpretation of Article 21.</p>	<p>Ministry of Environment, Forests and Climate Change (MoEF & CC)</p>

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	Formulation of the National Marine Litter Policy has been initiated by Ministry of Earth Sciences and Ministry of Environment, Forest & Climate Change	
	<ul style="list-style-type: none"> List Agency responsible for implementation. Indicate needs and priorities, if necessary, to address SBMPL, specifically. 	<p>Rules are being framed.</p> <p>None as of now.</p>	MoEF & CC/ Ministry of Ports, Shipping and Waterways
	<ul style="list-style-type: none"> Evaluate existing mandates, competencies, and capacities of relevant agencies relating to disposal of waste at sea from land-based sources (as defined by the LP). Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>MoEF & CC through Central and State Pollution Control Boards, National Green Tribunal have the mandate to control the liquid and solid wastes from land-based sources entering the coast.</p> <p>The Merchant Shipping Bill 2020 which is in the process of finalization for enactment should incorporate the SBMPL.</p>	<p>MoEF & CC</p> <p>Ministry of Ports, Shipping and Waterways</p>
	<ul style="list-style-type: none"> List current guidance documents used to implement LP. Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	As above	MoEF&CC
	<ul style="list-style-type: none"> List Waste Management Laws or Policies for domestic waste and responsible administration. 	The Water (Prevention & Control of Pollution) Act, 1974, The Wildlife Protection Act 1972, The Environment Protection Act 1986, The Plastic Waste Management (PWM) Rules, 2016. Prohibition on carriage	MoEF & CC

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	and usage of items made of Single Use Plastics by Ships and others. NA	
4. Implementation of FAO Voluntary Guidelines on the Marking of Fishing Gear, domestic implementing legislation/regulations and related initiatives	<ul style="list-style-type: none"> Dates of implementation through SOPs/Guidelines Indicate gaps, needs and priorities if revision/updating is necessary to address ALDFG problems. 	In preparation	Dept. of Fisheries, MoFAH & D/ Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> List Agency responsible for implementation or administration. Indicate needs and priorities if revision/updating is necessary to address ALDFG problems. 	In preparation	Dept. of Fisheries, MoFAH & D/ Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> List current projects/plans to address ALDFG problems, including fishing gear marking, fishing gear design modifications, incentives for delivery of unwanted/fished- up fishing gear to ports/landing sites, etc. 	In preparation	Dept. of Fisheries, MoFAH & D/ Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> Identify and list existing national or local fishing gear best management practices or guidelines for fishers. Indicate gaps, needs and priorities if revision/updating is necessary to address ALDFG problems. 	In preparation	Dept. of Fisheries, MoFAH & D/ Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> Identify and list active promotion, and existing practices, of marking of fishing gear (allowing owner identification) and fishing vessel identification number schemes. 	In preparation	Dept. of Fisheries, MoFAH & D/ Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> Is fishing gear marking (allowing owner identification) and/or fishing vessel identification associated to fishing licenses? 	In preparation	Dept. of Fisheries, MoFAH&D/

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> Please specify differences between fisheries if any (e.g., small scale vs large scale, differences between different fishing gears/ methods, etc.) 		Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> Identify and list active promotion, and existing practices reporting mechanisms for lost fishing gear, if any. 	In preparation	Dept. of Fisheries, MoFAH&D/ Dept. of Fisheries, State Govt./UTs
5. Inventory of relevant stakeholders and means of information	<ul style="list-style-type: none"> Identify regional, national and local authorities responsible for maritime and fisheries sectors. 	In preparation	National Level: Maritime sector: Ministry of Ports, Shipping and Waterways & Fisheries sector: Ministry of Fisheries, AH&D.
	<ul style="list-style-type: none"> Identify and list important local fishing and coastal communities and their representatives. 	In preparation	Dept. of Fisheries, MoFAH&D/
	<ul style="list-style-type: none"> Identify and list relevant environmental NGOs. 	In preparation	Dept. of Fisheries, State Govt./UTs
	<ul style="list-style-type: none"> Identify and list regional bodies and relevant RFMOs. 	FAO, IOTC, Indo-Pacific Fisheries Commission (IPFC), SACEP, BOBP.	-
	<ul style="list-style-type: none"> Identify and list most effective information channels to reach out to the different stakeholders in your country. 	Electronic, Print, social media. Outreach programmes	-
	<ul style="list-style-type: none"> Identify and list national and/or local 'champions' who can reach relevant communities. 	TERI, South Indian Federation of Fishermen Societies (SIFFS)	Information may be obtained from the Coastal State Governments
	<ul style="list-style-type: none"> List existing relevant links with potential Partnering Countries in your region. Identify and list relevant maritime transportation/fisheries companies both national and foreign companies operating in your country. Refer to list of LPCs and PCs. 	In preparation	DG-Shipping/ Dept. of Fisheries, MoFAH&D

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
6. General awareness of, and awareness raising activities about, the impacts of pollution from ships and fisheries on the marine environment	<ul style="list-style-type: none"> Identify maritime and fisheries training institutes or other bodies capable of instructing on MARPOL Annex V, London Protocol and FAO Codes and Guidelines. Indicate needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>Teaching of MARPOL Annex V & London Protocol</p> <p>Teaching / Training: FAO</p>	<p>Indian Maritime University, The Mercantile Marine Department/ DG-Shipping</p> <p>FSI, MPEDA, Coastal State Governments, CMFRI, CIFT, CIFNET</p>
	<ul style="list-style-type: none"> List any existing training programmes and materials used in national training programmes for seafarers and fishing vessel personnel in education and training centers (i.e. (adaptations of the) IMO model course on marine environmental awareness). Indicate gaps, needs and priorities if revision/updating is necessary to address SBMPL, specifically. 	<p>In preparation</p>	<p>Indian Maritime University & CIFNET</p> <p>The Mercantile Marine Department/ DG-Shipping</p>
	<ul style="list-style-type: none"> Identify and list any existing outreach and information campaigns (national/regional/local) specifically addressing fishing and other coastal communities. 	<p>Government of India and local administrations are implementing various flagship clean-up programmes including <i>Swachhta Abhiyaan; Suchitwa Sagaram, Sundara Teeram; Swachh Sagar, Surakshit Sagar</i>/'Clean Coast Safe Sea', coastal clean-up campaign, etc., which cover entire nation or state level clean-up programmes. In addition, several local/beach level clean-up programmes are being regularly conducted at local levels.</p>	<p>Ministry of Earth Science, Ministry of Ports, Shipping and Waterways/ DG-Shipping, MoEF& CC, Indian Coast Guard, Coastal State Governments/UTs, Ministry of Fisheries, Animal Husbandry and Dairying, Indian Fisheries Research and Education Institutes etc.</p>
7. Any other relevant national or regional projects/action plans focusing on SBMPL	<ul style="list-style-type: none"> List any relevant projects and national or regional contributors. 	<p>Yes. National Centre for Coastal Research (NCCR) under MoES, GoI having bilateral programmes with UK, Australia and Japan regarding MPL.</p>	<p>TERI, NCCR/MoES, CIFT, Green Waves Environmental Solutions etc., other institutions.</p>

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
		<p>NCCR is actively tackling marine plastic pollution through international collaborations. They partnered with Cefas (UK) on the "Fate of plastics" project, standardizing microplastic analysis methods and sampling beaches, coastal waters, and mangroves (2019-2023). With Norway, they developed a Marine Spatial Planning framework for Puducherry and Lakshadweep (2021-2023). Collaborating with JAMSTEC (Japan), they analyzed Arctic microplastics and explored AI-powered beach litter monitoring (2021-2023). Finally, alongside Australia and Singapore, they hosted a workshop on marine plastic debris in the Indo-Pacific region (2022).</p>	
	<ul style="list-style-type: none"> List other relevant cross-sectoral activities (maritime-fisheries-environment), if any. 	In preparation	
8. Other issues of relevance	<ul style="list-style-type: none"> List other issues of importance. 		
9. Active registered fleet operating in your waters and main ports	<ul style="list-style-type: none"> Number of vessels registered under national active fleet, including domestic operating fleet and fishing vessels. 	<p>Total number of Registered Fishing vessels = 2, 55, 476 Traditional = 48,686 Traditional Motorised = 1,42,532 Mechanized = 67,254 Deep Sea = 107</p>	Dept. of Fisheries
	<ul style="list-style-type: none"> Number and characteristics (vessel type and length) of foreign flagged vessels active or licensed in your waters. 	There are no foreign flagged vessels active or licensed in Indian waters.	Dept. of Fisheries

Framework/Issue	Type of relevant information	Gaps and priorities identified (refer to EOI/Baselines you provided and update as necessary)	Agency or organization responsible
	<ul style="list-style-type: none"> List major ports for handling cargos and fishing fleet. 	Major Fishing Harbours = 07 1. Visakhapatnam 2. Chennai 3. Cochin 4. Kolkata (Roychowk) 5. Paradip 6. Mumbai (Sassoon Dock) 7. Petuaghat For port please see the list at page No..23	Dept. of Fisheries / Port Trusts/DG-Shipping
	<ul style="list-style-type: none"> List of fishing harbors and landing sites with associated number of vessels and fishers. 	Available in ReALCraft (fishcraft.nic.in)	Dept. of Fisheries
10. Dimension of the marine plastic pollution problem caused by ships	<ul style="list-style-type: none"> Any estimate/study of the current share of marine plastic litter that originate from ships (incl. fishing vessels) in the marine environment. 	SwachhhSagar Report available for Merchant vessels; (not available for fishing vessels).	Dept. of Fisheries/ DG-Shipping
	<ul style="list-style-type: none"> If available, identify and list most frequently found plastic waste objects from ships (incl. from fishing vessels such as Abandoned, Lost or Otherwise Discarded Fishing Gear (ALDFG) and Fish Aggregating Devices (FAD)) on beaches and/or in port waters. 	Fishing nets in trawling grounds, PET bottles, Plastic pouches etc.	Dept. of Fisheries

F. No. 27016/5/2021-Fy (IC)
Government of India
Ministry of Fisheries, Animal Husbandry & Dairying
Department of Fisheries

Krishi Bhawan, New Delhi
Dated the 26th August, 2021

ORDER

Subject: Constitution of National Task Force on implementation of the IMO-FAO GloLitter Partnerships (GLP) Project in India -regarding.

The Government of India through the Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying is participating in the IMO-FAO GloLitter Partnership (GLP) Project as a Lead Partnering Country (LPC) with the aim of prevention and reduction of Marine Plastic Litter (MPL) and in particular, sea-based MPL (SBMPL) to reverse the negative environmental impacts of plastic discard and loss. In this regard, Joint Secretary (Marine Fisheries) in this Department has been designated as National Focal Point and Fishery Survey of India (FSI) as Lead Agency for implementation of the said project in the country.

2. In order to facilitate the partnership with GloLitter and to achieve the goal to advance the implementation of the international regulatory framework and best practice for significant reduction of SBMPL on the national level, one of the priority actions suggested in the GLP guidelines is to establish a National Task Force (NTF).

3. Accordingly, with the approval of the competent authority in the Department of Fisheries (DoF), Ministry of Fisheries, Animal Husbandry & Dairying, it has been decided to constitute the National Task Force (NTF) for the GLP Project with the following composition:

- i. Joint Secretary (Marine Fisheries), DoF and GLP National Focal Point - Chairperson
- ii. Director General, Fishery Survey of India (GLP Lead Agency) - Member Convener
- iii. Representative of Directorate General of Shipping - Member
- iv. Representative of Ministry of Environment, Forest & Climate Change - Member
- v. Representative of Marine Products Export Development Authority (MPEDA), Kochi -Member
- vi. Director, Central Marine Fisheries Research Institute, Kochi or his representative- Member
- vii. Director, Central Institute of Fisheries Technology, Kochi or his representative-Member
- viii-xx) Representatives of Maritimes States and Union Territories
- xxi) Fisheries Development Commissioner/Deputy Commissioner/Assistant Commissioner (in-charge of Marine Fisheries), DoF - Member

-2-

4. The Terms of Reference for the NTF will *inter alia* include the following:
- a) To advise and support the DoF in implementation of the GloLitter Partnerships Project (GLP) as Lead partnering Country (LPC).
 - b) To compile the base line information and updating the same.
 - c) To prepare National Action Plan.
 - d) To undertake any other task entrusted by the Department of Fisheries, GOI
5. The Committee may co-opt additional members if deemed necessary.



(Smt. Sheema Chakrabarty)
Under Secretary to the Government of India

To

All members of National Task Force

Copy to:

- 1) PPS to Secretary, Department of Fisheries
- 2) PS to Joint Secretary (Marine Fisheries), DoF
- 3) PS to Fisheries Development Commissioner, DoF

Abandoned, Lost and Otherwise Discarded Fishing Gears (ALDFG) / MPL (Marine Plastic Litter) retrieved in North East coast of India by the Survey vessel MFV *Matsya Shikari* & *Matsya Darshini* of Zonal Base of Fishery Survey of India, Visakhapatnam during 2021-2024 (August)

S. No.	Date/month	Area	Depth (M)	Type of litter	Weight in kg (appx.)
01	13.10.2021	Lat.17°46.2'N/Long.83°27.06'E (South off Bheemunipatnam)	35	Fibre sheets, Gill net and accessories.	600
02	December 2021	Lat.17°25.1'N/Long.83°02.8'E (off Pudimadaka)	46	HDPE webbings, netting material of trawl nets	75
		Lat.17°19.2'N/Long.82°57.2'E (off Pudimadaka)	53		
03	22.12.2022	Lat. 17°41.9'N/Long.83°31.8'E (off Visakhapatnam)	53	Gill net	60
04	January 2022	Lat.18°02.9'N/Long.83°53.2'E (off Chinthapalli)	37	Gill net	50
05	22.01.2022	Lat.19°28.5'N/Long.85°06.3'E (South off Ganjam)	45	Gill net	100
06	March 2022	Lat.17°15.9'N/Long.82°57.7'E (off Pentakota)	56	Gill net, polythene bags	30
07	18.03.2022	Lat.16°55.1'N/Long.82°31.1'E (off Kakinada)	57	Gill net	15
08	19.04.2022	Lat.19°41.6'N/Long.86°04.1'E (off Puri)	40	Gill net	50
09	20.04.2022	Lat.18°59.2'N/Long.84°48.4'E (off Kaviti)	58	Gill net	50
10	28.04.2022	Lat.17°25.7'N/Long.83°05.0'E (off Pudimadaka)	41	Gill net and accessories.	350
11	16.05.2022	Lat. 18°08.9'N/Long.84°02.9'E (off Kalingapatnam)	32	Gill net	30
12	22.05.2022	Lat.18°00.6'N/Long.83°52.0'E (off Chinthapalli)	44	Gill net	45
13	11.06.2022	Lat.17°46.8'N/Long.83° 29.2'E (off Bhimunipatnam)	42	Gill net	15
14	14.06.2022	Lat.18°33.5'N/ Long.84° 27.2'E (off Baruva)	40	Gill net	10

15	15.06.2022	Lat.18°15.2'N/Long. 84° 12.3'E (south off Kalingapatnam)	47	Gill net	05
16	16.06.2022	Lat.18°02.9'N/Long.83°56.9'E (off Chinthapalli)	47	Monofilament lines, hooks, swivels, nylon twines	15
17	17.06.2022	Lat.17°51.8'N/Long.83°34.5'E (off Bhimunipatnam)	37	Steel wire ropes	25
18	25.06.2022	Lat.19°15.5'N/Long.85°03.3'E (off Chilika)	48	Gill nets with synthetic floats, monofilament lines with hooks, PP ropes, steel wire ropes	90
19	26.06.2022	Lat.19°07.0'N/Long.84°55.9'E (off Gopalpur)	52	Gill nets, trawl nets	25
20	19.07.2022	Lat.18°11.3'N/Long.84°12.1'E (off Kalingapatnam)	54	Gill nets	125
21	24.07.2022	Lat.17°27.5'E/Long.83°04.7'E (Off Pudimadaka)	41	Gill nets	80
22	11.10.2022	Lat.18°00.4'N/Long.83°58.3'E (North off Chinthapalli)	39	Gill Net	20
22	22.10.2022	Lat.17°25.1'N/Long.83°02.8'E (Off Pudimadaka)	39	Gill Nets, Long line gears	92
23	22.10.2022	Lat.17°12.2'N/Long.82°42.7'E (Off Pentakota)	39	Gill Nets, Wire ropes	90
24	27.10.2022	Lat.17°24.9'N/Long.83°02.2'E (South off Pentakota)	39	Gill Net, Fishing Net Trawl Nets, Wooden logs	130
25	28.10.2022	Lat.17°45.6'N/Long.83°28.5'E (South off Bheeminunipatnam)	39	Trawl Nets	30
26	14.11.2022	Lat. 18°05.4'N/ Long. 84°06.3'E (South off Kalingapatnam)	52	Gill Net	10

27	16.11.2022	Lat. 18°21.9'N/ Long. 84°17.6'E (East off Kalingapatnam)	44	Gill Net	20
28	28.11.2022	Lat. 17°23.2'N/ Long. 83°00.6'E (Off Pudimadaka)	47	Gill Net and Longline	45
29	27.12.2022	Lat.17°59.0'N/ Long.83°44.8'E (Off Chinthapalli)	45	Gill net and accessories	30
30	28.12.2022	Lat.18°02.9'N/ Long.84°01.3'E (Off Chinthapalli)	45	Monofilament lines and Gill nets	40
31	29.12.2022	Lat.18°08.9'N/ Long.84°02.8'E (South off Kalingapatnam)	47	Gill nets	20
32	22.02.2023	Lat.17°45.5'N/ Long.83°27.8'E (South off Bhimunipatnam)	39	Gill nets	30
33	11.07.2023	Lat. 17°47.6' N, Long. 83°36.6' E (south off Bheemunipatnam)	50	Gill nets	30
34	20.08.2023	Lat. 17°52.3' N / Long. 83°45.9' E (north off Bheemunipatnam)	55	Trawl nets, Monofilament lines and Gill nets	50
35	23.12.2023	Lat. 18°54.4' N / Long. 88°57.1' E (155 NM South East off Paradip, Odisha)	1800	Nylon ropes, Gill nets, Trawl nets floats, plastic bottles, bags, buckets, plastic containers, footwear, shampoo packets, thormocol floats, Food covers	2000
36	18.04.2024	Lat.17°45.5'N/ Long.83°27.8'E off Bheemunipatnam	50	Gill net, nylon rope	20
37	10.05.2024	Lat. 18°32.0'N / Long. 084°31.0'E (Southeast off Kalingapatnam)	52	Gill net, nylon, polypropylene rope and plastic debris	40
38	12.05.2024	off Bheemunipatnam	41	Trawl net, vehicle tyres and Plastic Materials	42
39	16.05.2024	Lat. 17°46.2'N / Long. 084°53.5'E	2480	3 year old Vietnami 1000L capacity marine diesel cylinder oil plastic (MPL) container with iron frame	250

40	10.06.2024	Lat. 17°54.'N / Long. 83°45.4'E (South off Bhimunipatnam)	51	gill net, Trawl lines, and Plastic Materials	130
41	15. 06.2024	Lat. 17°57.8'N / Long. 83°53.8'E (off Visakhapatnam)	54	gill net, Trawl lines, and Plastic Materials	70
42	25. 06.2024	Lat. 17°24.9'N / Long. 83°03.2'E (off Pudimadaka, Andhra Pradesh)	44	gill net, Trawl lines, and Plastic Materials	48
43	July, 2024	Lat 18°18.7'N / Long. 84°15.6'E (off Kalingapatnam, Andhra Pradesh)	59	Gill net, fishing accessories, plastic bottles, plastic baskets, plastic covers, etc	70
44	10.08.2024	Lat. 17°42.7'N / Long. 83°32.4'E off Bheemunipatnam		Gill net, wire rope, etc	50
45	11.08.20247	Lat. 17°51.3'N / Long. 83°36.9'E off Bheemunipatnam		Gill net, nylon rope	40
46	13.08.2024	Lat 18°05.0'N / Long. 83°59.1'E (south of Srikakulam, Andhra Pradesh)	40	Gill net along with floats.	80
47	19.08. 2024	Lat. 18°03.5'N / Long. 083°54.9'E (east of Santhapalli, Andhra Pradesh)	34	Gill net, monofilament line, PP rope, float etc.	120
48	27.08.2024	Lat. 17°22.3'N / Long. 82°55.1'E (off Pudimadaka, Andhra Pradesh)	37	Gill net, monofilament line and polypropylene rope	60
49	27.08.2024	Lat. 17°22.3'N / Long. 82°55.1'E (off Pudimadaka, Andhra Pradesh)	37	Wire rope, monofilament line and plastic cover, clothes, and wooden logs	170
TOTAL GHOST GEARS (in kg)					5562

The details of Hotspots along with quantity of ghost gears retrieved by the survey vessels Matsya Shikari & Matsya Darshini off Andhra Pradesh & Odisha coast during the period 2021-2024

S. No.	Hotspots	State	No. of Occasions	Total retrieved (Kg)
1	Off Kakinada	Andhra Pradesh	01	15
2	Off Pentakota	Andhra Pradesh	03	250
3	Off Pudimadaka	Andhra Pradesh	06	872
4	Off Visakhapatnam	Andhra Pradesh	05	368
5	Off Bheemunipatnam	Andhra Pradesh	12	1072
6	Off Chinthapalli	Andhra Pradesh	07	300
7	Off Kalingapatnam	Andhra Pradesh	07	280
8	Off Kaviti	Andhra Pradesh	01	50
9	Off Kuppilli	Andhra Pradesh	01	80
10	Off Baruva	Andhra Pradesh	01	10
11	Off Ganjam	Odisha	01	100
12	Off Chilika	Odisha	01	90
13	Off Gopalpur	Odisha	01	25
14	Off Puri	Odisha	01	50
15	155 NM South East off Paradip	Odisha	01	2000
	Total		49	5562

Summary:

- a) Hotspots : 15
b) No. of Occasions : 49
c) Total quantity retrieved (Kg) : 5562 kgs
d) No. of states : 02 (Andhra Pradesh & Odisha)