



# **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**

## **Guidelines**

**On**

## **Turtle Excluder Device (TED)**

**Department of Fisheries  
Ministry of Fisheries, Animal Husbandry and Dairying  
Government of India**

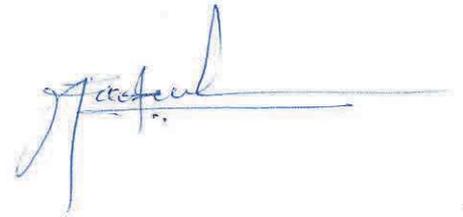
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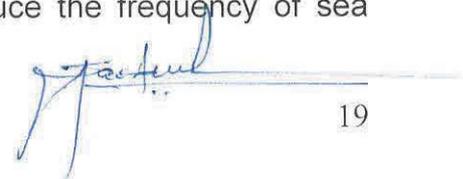
## Implementation of activity on Turtle Excluder Device under the Pradhan Mantri Matsya Sampada Yojana (PMMSY)

### 1. BACKGROUND

- 1.1 India is one of the global leaders in shrimp export, with major markets being the United State of America (USA) and European Union(EU), with more than 50% of Indian shrimp exported to US alone. Shrimp production in India is either based on aquaculture or is harvested naturally from the sea. Naturally harvested shrimps are captured through bottom trawling which involves dragging a net behind a boat to catch fish and shrimps. This operation is treated as unselective and destructive fishing, as it also captures a large quantity of juveniles and non-target species which are wasted, while causing damage to seabed habitats.
- 1.2 Among the 'by-catch' or capture of non-target species during shrimp trawling, a major impact is on four species of marine turtles, all of which are highly endangered and on are the Schedule-I of the Indian Wildlife (Protection) Act. Marine turtles face severe threats due to trawl fisheries in the world over, and India is no exception.
- 1.3 The FAO Code of Conduct for Responsible Fisheries guidelines (FAO, 1995) strongly advocates the need for protecting endangered species like sea turtles. In May 1996, the United States' legislation (Section 609 of Public Law 101-162) prohibited the import of shrimp harvested with fishing equipment such as trawl nets which were not equipped with Turtle Excluder Devices(TEDs). India took necessary measures at the time to continue the shrimp trade and exports. Odisha being a significant state for mass nesting of olive ridleys, the High Court delivered a judgment in 1998 and made it mandatory for all trawlers to use TEDs. Subsequently, various agencies took steps to promote the use of TEDs through workshops and awareness



- 1.4 s programme. The Central Institute of Fisheries Technology(CIFT) developed modified TEDs that were distributed free of cost in Odisha by the Marine Products Exports Development Authority (MPEDA).
- 1.5 The seafood exports of India during last decade (2013-2023) owing to several government initiatives as well as private enterprises crossed US\$ 8 billion in 2022-23 and placed India at sixth largest seafood exporter in the world. While the seafood exports stood at **Rs 30,213 crore** in 2013-14, the same has increased to **Rs. 60,524.89** crore during FY 2023-24 an increase of 111.73% in spite of pandemic imposed challenges in global markets. Today, Indian seafood is exported to 132 countries with largest overseas market being USA.
- 1.6 As stated above, major importing countries like the USA have already imposed sanctions on the import of shrimp from countries that are not complying with the use of TEDs in their shrimp fisheries and the EU Nations are also likely to follow such suit. The USA and EU are the two major overseas markets for Indian seafood export and these nations contribute about 49% of the export from the country. The imposition of the sanctions by USA and EU would cause a major impact on India's seafood exports, shrimp being a major commodity and earning high foreign exchange for the country. Consequently, this could lead to serious impacts on the livelihoods of thousands in the marine fishing community who are dependent on shrimp capture.
- 1.7 In order to protect and conservations of sea turtles population, it is necessary to have a sound conservation and management of turtles population through various measures including mandatory fitment of Turtle Excluder Devices (TEDs) in trawler nets.
- 1.8 The greatest threat to sea turtles is drowning by becoming entangled in fishing equipment. The term for this incidental catch is by-catch and by-catch of sea turtles is a worldwide problem, but it was first noticed in the Gulf of Mexico and South Atlantic shrimp fisheries. Since 1970s, scientists, resource managers, and fishermen have been working together to reduce the frequency of sea

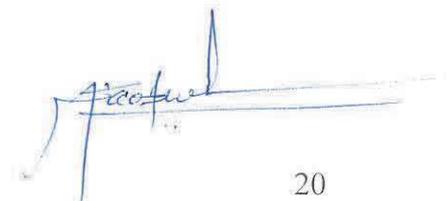


turtles becoming bycatch. They succeeded in development of the turtle excluder device, commonly called as TED.

- 1.9 The ban imposed by USA reduced the unit value realized for Indian wild-caught shrimp in international market, from USD 9.87/kg to USD 5.68/kg. This has been causing a significant impact on the earnings of fishers and stakeholders in the allied sectors. The selling price of Black Tiger, White Shrimp, Flower Shrimp, Karikadi, Poovalan shrimp, at landing points has reduced by ₹100-200/kg following the US ban.
- 1.10 Besides, global markets access requires compliance with environmental standards, including use of TEDs. By encouraging or mandating the use of TEDs, India can ensure that its seafood products meet these standards, thus maintaining or expanding access to global markets. Many major markets, particularly the United States and European Union, have strict environmental regulations that require use of TEDs in shrimp trawling. It may be worthwhile to reiterate that US being the major export market for India has imposed restrictions on shrimp imports from the countries that fail to meet TED requirements, citing the protection of endangered sea turtles. Compliance with these regulations is often a prerequisite for exporting shrimp to these regions. By using TEDs, Indian exporters can ensure continued access to these lucrative markets.

## **2. Turtle Excluder Devices (TEDs)**

- 2.1 According to the National Oceanic and Atmospheric Administration (NOAA), US Department of Commerce, a "Turtle Excluder Device(TED) is a grid, made of metal bars, that is fit into a trawl nets. Small animals, such as shrimp, pass through the grid into the mesh bag at the end of the trawl and are caught. When larger animals, such as sea turtles, sharks, and stingrays, enter the trawl net, they are stopped by the TED and are able to exit through an opening either at the top or bottom of the net".



### 3. Coverage fishing Vessels for TED

- 3.1 After the Mumbai terroristic attacks on 26<sup>th</sup> November, 2008, it was decided in the GOI to have a uniform registration system for mandatory registration of all types of fishing vessels. The Department of Fisheries, Government of India through the National Informatics Centre(NIC) has devised a uniform web based registration regime (**ReALCraft**) for online registration of all fishing vessels plying in the Indian marine jurisdiction and the system has been put in place.
- 3.2 ReALCraft is a work flow based online application system developed for registration of all category fishing vessels under MS Act and issuance of fishing license under the respective State/UT Marine Fisheries regulation Acts(MFRAs) to the fishing vessels operating along the Indian coast. This registration is done under the Merchant Shipping Act,1958(MS Act) and at present the Fisheries Departments of all Coastal States/UTs have been empowered to do the registration of fishing vessels less than 20 meter under MS Act. The Ministry of Shipping(MoS), who is administrating the MS Act, had on 24<sup>th</sup> June, 2009 notified a format for uniform registration of fishing vessels and also the State-wise registrars as identified by the States/UTs. Registration under the online registration system ReALCraft is being done and as per this system there are a total of 2,44,232 fishing vessels are plying in the Indian coastal waters.
- 3.3 The mechanized fishing vessels are primarily carryout the muti-day fishing and with trawler and gill nets. It is therefore proposed to install Turtle Excluder Device (TED) at least 50% of the existing mechanized fishing vessels.
- 3.4 State-wise details of the existing fishing vessels and the targeted mechanized fishing vessels proposed to be install Turtle Excluder Device (TED) are furnished below:



Sl. No	State/Union Territory	Existing Fishing Vessels (ReALCraft)					Mechanized fishing vessels targeted for fitment of TED (50% of the column (v))
		Deep sea	Motorized Mechanical	Non-Motorized Mechanical	Motorized	Non-Motorized	
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
1	Andhra Pradesh	0	22527	1620	6796	30943	810
2	Goa	0	0	2806	300	3106	1403
3	Gujarat	96	8825	17850	23	26794	8925
4	Karnataka	17	11348	4762	8855	24982	2381
5	Kerala	07	34884	6945	3905	45741	3473
6	Maharashtra	0	0	18776	4582	23358	9388
7	Odisha	0	11550	1752	6990	20292	876
8	Tamil Nadu	0	35828	5226	3234	44288	2613
9	West Bengal	0	3904	3289	3842	11035	1645
10	Andaman & Nicobar	2	2028	177	1796	4003	90
11	Daman and Diu	2	256	1960	0	2218	980
12	Lakshadweep	0	1424	18	187	1629	10
13	Puducherry	0	3238	716	1889	5843	360
	<b>Total</b>	<b>124</b>	<b>135812</b>	<b>65897</b>	<b>42399</b>	<b>244232</b>	<b>32953</b>
			<b>Say</b>	<b>33000 Mechanised Fishing Vessels</b>			

#### 4. Objectives

- (i) To promote use of TED in trawler net to reduce the 'by-catch' and capture of non-target species during shrimp trawling.
- (ii) To promote sustainable and environmental friendly fishing practices for economic prospects of marine fishers.
- (iii) To augment export of fish and fisheries products with due compliances of trade related national & international regulations and barriers
- (iv) To promote conservations and protection of endangered species with focus on conservation and management of turtles' population



- (v) To promote eco-friendly marine fisheries in compliance of national and international regulations.
- (vi) To sensitize marine fishers on aspects of conservation and management of marine fisheries including associated national & international regulations and FAO codes.

## 5. Sources of funding

- 5.1 The funds requirements for mandatory fitment of Turtle Excluder Devices (TEDs) will be met from the annual budgetary allocation under the Centrally Sponsored Scheme Component of the Pradhan Mantri Matsya Sampada Yojana (PMMSY).
- 5.2 To consolidate outcomes and save public resources, suitable linkages and convergence with the schemes implemented by various Central Ministries/Departments/States including PMEDA will be forged wherever feasible to implement the activity fitment of Turtle Excluder Devices (TEDs).

## 6. Funding Pattern

- 6.1 The Pradhan Mantri Matsya Sampada Yojana (PMMSY) is implemented with two separate components namely (a) Central Sector Scheme (CS) and (b) Centrally Sponsored Scheme (CSS). The Central Sector Scheme Component of PMMSY inter-alia provides 100% central funding for development of fisheries related activities. Whereas the Centrally Sponsored Scheme Component of PMMSY are in association with the State Governments/UTs on cost sharing basis.

- 6.2 The activity on mandatory fitment of Turtle Excluder Devices (TEDs) in the trawl/gill net of marine fishing will be supported under the Centrally Sponsored Scheme Component of PMMSY as non-beneficiary activity. The unit cost of a Turtle Excluder Device (TED, other administrative and implementation costs will be shared between the Central and State Governments. Details of the funding pattern are as below:

- (a) Central share : 60% and State Government share : 40%

- (b) Union Territories (with legislature and without legislature): 100% Central share.

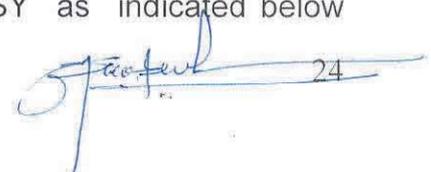
## 7. Implementing Agency

- 7.1** The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, GoI will be the implementing agency at the central level to implement the activities relating TED through the concerned States/UTs.
- 7.2** The Concerned State Government/UT, Department of Fisheries will be the nodal implementing agency in the respective States and UTs to implement the activities of TED. In case felt necessary, the State Government/UT may designate any one from the below mentioned Departments/State Entities as their End Implementing Agencies(EIA) in the State/UT for implementation of the activity on fitment of Turtle Excluder Devices (TEDs):

- (a) Department of Fisheries itself
- (b) Fisheries Engineering Department
- (c) State/UT PWD
- (d) Maritime Board
- (e) Port Department
- (f) Coastal Engineering Department
- (g) Fisheries Harbour Circle
- (h) Fisheries Development Corporation/Federation
- (i) State Infrastructure Development Corporation/Company
- (j) Any others State/UT entity directly associated in development of fisheries in the State/UT.

## 8 Governing Structure

- 8.1** The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India will be nodal agency in the central to implement the activity on fitment of Turtle Excluder Devices (TEDs) in the trawler net under the PMMSY.
- 8.2** The activity on fitment of Turtle Excluder Devices (TEDs) in the trawler nets will be implemented as non-beneficiary oriented activity under the PMMSY. Accordingly the existing Governing structure of PMMSY as indicated below

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will govern the end-to-end implementation of the activity on fitment of Turtle Excluder Devices (TEDs):

Central level		State/UT level	
(a)	Central Standing Committee(CSC)	(i)	District Level Committee (DLC)
(b)	Project Monitoring and Evaluation Unit (PMEU) in DoF	(ii)	State Level Approval and Monitoring Committee (SLAMC)
(c)	Project Monitoring Unit in NFDB		
(d)	Project Appraisal Committee (PAC) in NFDB		
(e)	Central Apex Committee (CAC)		

**8.3** As far as approvals and funding of the activity on fitment of Turtle Excluder Devices (TEDs) taken up in convergence with other schemes of Central and State Governments including MPED are concerned, their respective governing structure will govern for end-to-end implementation such convergence activity on fitment of Turtle Excluder Devices (TEDs).

## 9. Unit Cost of a Turtle Excluder Devices (TED)

9.1 The Central Institute of Fisheries Technology(CIFT), Kochi in consultation with Marine Products Export Development Authority (MPEDA) and other stakeholders has worked out unit cost of a Turtle Excluder Device (TED) at Rs. 25,950/- per unit. Including the administrative, contingency and other unforeseen expenses in implementation of the TED related activities, the unit cost of a TED works out Rs. 26600/TED. Component-wise, specification and unit cost of TED materials and unit cost of a finished TED are furnished below:

SI No	COMPONENT	SPECIFICATION	COST
(i)	(ii)	(iii)	(iv)
1	<b>GRID MATERIAL</b>		
1.1	Aluminium Alloy 6082, Grade T6 Pipes	Diameter: 1 inch, Wall Thickness: 3.2mm	

*Actual*

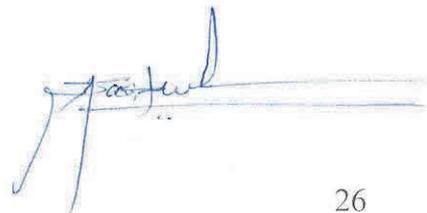
1.2	Grid Size:	48x41 inches and 40x36 inches (oval shape)	
1.3	Quantity of Pipe	6 kg	₹2,400 (@400/kg)
1.4	Welding Type	Tungsten Inert Gas (TIG) Welding	
1.5	Fabrication of Grid		₹15,000 per grid
<b>2</b>	<b>NETTING FOR TED EXTENSION</b>		
2.1	Netting Material	HDPE net (depth stretched)	
2.2	Mesh Size	25mm, Twine Size: 2.5mm	
2.3	Weight of Netting	5 kg	₹2,500 (@500/kg)
<b>3</b>	<b>Flap (Cover for TED Opening)</b>		
3.1	Flap material	HDPE, Mesh Size: 40 mm, Twine size: 2.5mm (depth stretched)	
3.2	Weight of Flap Material	1 kg	₹500 (@₹500/kg)
<b>4</b>	<b>NYLONE ROPE</b>		
4.1	Diameter of Rope	10 mm, Wright: 1kg	₹550 (@₹550/kg)
<b>5</b>	<b>FABRICATION CHARGES</b>		₹5000
	<b>Total Cost of Finished TED</b>		<b>₹25,950.00</b>

9.2 Accordingly, the maximum unit cost Rs.26,600/TED has been considered for funding under the PMMSY. The State Government, UT and other implementing agency will arrive at and firm up the unit cost of TED unit cost based on the competitive process and take up implementation of the activity under PMMSY.

9.3 The unit cost of a TED is shared between the Centre and concerned State Governments at 60:40 sharing basis under the PMMSY. Accordingly sharing of unit cost of a TED with a ceiling in respect of States are as below:

Central share (60%)	Rs. 15570.00
State share (40%)	Rs. 10380.00
<b>Total</b>	<b>Rs. 25950.00</b>

9.4 For UTs the entire unit cost of Rs.26600/TED of the Turtle Excluder Device (TED) will be met by the Government of India, Department of Fisheries under the PMMSY.



## 10. Convergence

10.1 In order to consolidate outcomes and effective utilization of available financial resources, efforts will be made to bring in synergies between the different schemes implemented by other Central Ministries /Departments /States. Suitable convergence and dovetailing of funds from such other sources including MPED and Ministry of Commerce, wherever feasible will also be explored.

## 11. Financial implication

11.1 As indicated in para-3.4 above, Turtle Excluder Device (TED) are proposed to be fitted in a total 33000 mechanised fishing vessel involved in multi day fishing and creating threat to Turtles. Accordingly, the cost implication on fitment of TED in these vessels works out to Rs 8778 lakh details as below:

S. No	Activities	Unit (Nos)	Unit Cost (Rs)	Amount (Rs in lakhs)		
				Central Share	State Share	Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
1	Fitment of Turtle Excluder Device (TED) in States	31560	25950	4913.892	3275.928	8189.820
	Fitment of Turtle Excluder UTs	1440	25950	373.680	0.00	373.680
	<b>Sub-total</b>	<b>33000</b>	<b>25950</b>	<b>5287.572</b>	<b>3275.928</b>	<b>8563.50</b>
2	Cost toward Administrative, contingency, unforeseen items, administrative and implementation cost including training and extension, seminar workshops meeting demonstration publicity etc (2.5% of the cost of the project)	--		132.189	81.898	214.087
	<b>Total</b>	<b>33000</b>	<b>25950</b>	<b>5419.761</b>	<b>3357.826</b>	<b>8777.587</b>
	<b>Rounded</b>			<b>5420.00</b>	<b>3358.00</b>	<b>8778.00</b>

## **12. Identification of Mechanized Fishing Vessels**

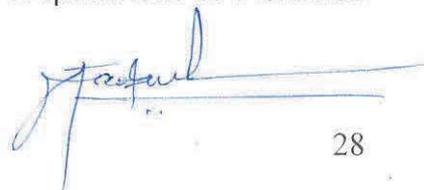
12.1 It may be seen from the para-3.4 above, that out of 65,897 mechanized fishing vessels presently operating, TED is proposed to be fitted/installed in a total 33,000 mechanized fishing vessels operating in 9 Coastal States and 4 Union Territories. The State Government and UTs may identify the mechanized fishing vessels operating in their respective States/UTs for fitment and operation of TED. The broad criteria to be adopted for identification of mechanized fishing vessels are as below:

- a. Mechanized fishing vessels having valid fishing license and registration certificate.
- b. Mechanized fishing vessels registered with Marine Products Export Development Authority (MPEDA), if any, for fisheries export
- c. All mechanized fishing vessels involved in trawling/Gill netting (identified vessels are less than the target indicated in para-3.4 above)
- d. Mechanized fishing vessels of higher OAL (in the order of priority) and involved in trawling.

## **13. Mode of Implementation**

13.1 The mode of Implementation of TED related activities will be same as the other fisheries developmental activities being implemented under PMMSY. However, some of the main activities are highlight below:

- a. Identification of mechanized fishing vessels involved in trawling as per the criteria indicated in para-9.2 above
- b. Formulation of district level proposals and seeking approval of the concerned District Level Committee (DLC)
- c. Consolidation of all District Plans as State Plan/proposal including the firmed up project cost
- d. Seeking approval of State Level Approval & Monitoring Committee (SLAMC). Submission of such approved State/UT Plans/proposal to National Fisheries Development Board (NFDB) with a copy to the Department of Fisheries, Government of India
- e. Appraisal of State/UT proposals by Project Appraisal Committee (PAC) of PMMSY in NFDB and submission of such apprised proposals with appropriate recommendations of PAC to the Department of Fisheries by NFDB



- f. Processing of such PAC recommended proposals for issuance of necessary administrative approvals and financial release as per the extant financial Guidelines/Regulations (SNA & SNA-SPARSH etc).
- g. Selection of Agency by the State/UT through adoption of extant competitive bidding process for supply installation/fitment of specified TED in the identified mechanized fishing vessels in the State/UTs
- h. Installation and operation of TED as per the specified specifications, quality, timeline indicated in the supply order issued by the respective State Government/UTs to the identified suppliers.
- i. Financial release to the suppliers and other agencies as per the schedule specified in the work/supply order.
- j. Reporting of physical and financial progress to the Department of Fisheries, Government of India as well as to the National Fisheries Development Board (NFDB) regularly on monthly basis (Both through physical and MIS of PMMSY)

#### **14. Post-installment management of TED**

- 14.1 The concerned State/UT Department of Fisheries shall devise appropriate mechanism to ensure that the TED installed/fitted in the fishing net/vessels under the PMMSY are satisfactory management and operated.
- 14.2 The States/UTs may devise a mechanism include financial incentivization to the fishing vessels owners who will satisfactory install and operate the TED in his /her fishing vessels.
- 14.3 The State Governments/UTs may also devise and implement an appropriate mechanism to ensure that all the identified and gill netting fishing vessels are fitted with the specified TED and operated satisfactory. The States/UTs may also taken appropriate action against the defaulter owners of the identified fishing vessels. This may include stoppage of governmental assistance and subsidies, cancellation of fishing license, fishing vessels registration of the fishing vessels/owners who violate and government directives with regards to satisfactory management of TED.

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