FINAL REPORT

INTRODUCTION OF TURTLE EXCLUDER DEVICES/TED (SUPER SHOOTER) ON SMALL SCALE ECO-FRIENDLY TRAWL NET IN MAKASSAR STRAIT AREAS

REDUCTION OF ENVIROMENTAL IMPACT FROM TROPICAL SHRIMP TRAWLING, THROUGH THE INTRODUCTION OF By-CATCH REDUCTION TECHNOLOGIES AND CHANGE OF MANAGEMENT (FAO Symbol EP/GLO/201/GEF)

Tarakan – East Kalimantan Province, November 12th – 16th 2006

DIRECTORATE GENERAL OF CAPTURE FISHERIES
MINISTRY OF MARINE AFFAIRS AND FISHERIES
REPUBLIC OF INDONESIA
2006

ACKNOWLEDGEMENT

First of all, we would like to express our sincere thank to the honourable:

1. Mr. Daniel G Foster (Biologist Expert from NOAA - USA)
2. Mr. dr. H. Jusuf S. K. (Mayor of Tarakan City)
3. Mr. Ir. H. Khaerani Saleh, MM (Chief of Fisheries and Marine Affairs Office of East Kalimantan Province)
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6. Mr. Thomas M Poulsen (Project Operations Coordinator, FAO-Rome)
7. Mr. Man Ho So (FAO Representative in Indonesia)
8. Mr. Benni H Sormin (FAO Representative in Indonesia)

for their valuable advices and participations with the workshop of Introduction of Turtle Excluder Devices/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas which has successfully held from November 12th - 16th 2006 in Tarakan – East Kalimantan Province, Indonesia.

The workshop was aimed to disseminate the installation of TED (Super Shooter type) for the trawl net. Also by the workshop, the Code of Conduct for Responsible Fisheries (CCRF) discourse is expected to be largely discussed by the small scale fishers. We expect by this kind of dissemination and training the fishers will realize the importance of using the selective fishing gear and understood the BRDs/ TED instalment and operation.

The Workshop was successfully conducted as a result of collaboration among all of the committees (both steering and organizing committee), Directorate General of Capture Fisheries, FAO – Rome, FAO Rep in Indonesia, Fishing Technology Development Centre Semarang, Reseach Institute for Marine Fisheries Jakarta and Bogor Agriculture University. Herewith we highly appreciate for them who have fully participated and supported in this workshop.

Jakarta, November 2006
Directorate of Fishing Vessels and Fishing Gears

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1. INTRODUCTION

1.1. Background

Trawl net is the most effective fishing gear in the world. Nevertheless, lately this fishing gear catch indicates some decreases. The decreases was caused by 2 (two) matters, are: 1). The degradation of the environment carrying capacity, 2). The pressure of the trawl net fishing gear. The pressure was occurred by the amount of this fishing gears operated by fishermen and the method this fishing gear operated.

In the fishing method, one of the way to reduce by catch fish is introducing a selective fishing gear by using By Catch Reduction Devices.

In the implementing of CCRF (*Code of Conduct for Responsible Fisheries*), from some countries and fisheries international organizations have a commitment to put selective fishing gear as a priority in utilising fish resources. In President Decree no. 39/1980 about “Prohibition usage of trawl net in Indonesian territorial” and in President Decree no. 85/1982 about “By-catch Reduction Devices Implementation installed on the fishing shrimp trawl gear in Arafura sea”. However, the implementing of the mentioned devices have not effective yet, due to caught sea shrimps decrease till 30%.

Regarding to the above background, we would like to conduct an Introduction of Turtle Excluder Device/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas.

1.2. OBJECTIVES AND PURPOSE

1.2.1. Objectives

1. To give an understanding about the benefit of eco-friendly trawl net implementation;
2. To introduce design, construction and technical operation of eco-friendly trawl net;
3. To extent the proper installment of TEDs to the trawl net fishing gear;
4. To train the filling and using of fishing logbook.

1.2.2. Purpose

Responsible fishing technology implementation will influence food security as a human food resources, ie:

1. Using TEDs, especially for shrimp trawl net, will reduce undeliberated caught of endanger species, such as: sea turtle, dugong, cucut.
2. Demonstration and experimental of TEDs proposed to Introduce responsible fishing technology.
3. As an implementation of Sustainable Fisheries Management Program for contribution of sea aquatic organism resources for food security and safety.

1.3. Funding

This workshop was financed by FAO/GEF Symbol EP/ GLO/ 201/ GEF Project.

2. MATERIALS AND METHODS

2.1. Training Materials

The workshop was focused on the installation of By-catch Reduction Devices/TEDs. The materials, are (*both classical theory and outdoor practical*), such as:

a The Technical aspect of fishing gears;
b The Selectivity aspect of fishing gears;
c The Sustainability aspect of fisheries resources;
d The Legal aspect of fisheries regulation.

Some of the training aids was used in the workshop, such as:

a. Two units of Super Shooter Turtle Excluder Devices (TEDs) type Flat Bottom and Round Bottom
b. Two units of fishing vessels were operated during the sea demonstration, ie: MV. Karya Nelayan 2 and MV. Madina. Both of them are stern trawl fishing vessels, 16 GT and 30 GT.

2.2. Training Methods

Generally, the methods used for the workshop as follows:

a. Class meeting
   As a provision materials for the workshop trainees was remarked at the opening and closing ceremony speech.
   The technique and technical requirement; social and environmental advantages and legal instrument of the BRDs installation, etc were introduced theoretically by the trainers during the class meeting.

b. In-land Practical
   This part of the workshop was guided by trainers who demonstrate and practise trainees on the installation of TED on trawl net. The activities consisted of: net cutting, TED installing, net connecting and elevation measuring.

c. On-board Demonstration and Training
   This part of workshop practised the trainees of this workshop how to install the BRDs on trawl net, identify the kinds of caught species, put a part of the caught species as sample, weight and scale the fork length of each species and compare the differences between cod-end and cover net.

3. DEMONSTRATION AND TRAINING IMPLEMENTATION

The Introduction of Turtle Excluder Devices/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas under The Director of Fishing Vessels and Fishing Gears, DGCF Decree No. 2071/KP110/D2/KPA/XI/06, dated on November 1st, 2006. The secretary address: Jl. Medan Merdeka Timur No. 16 Jakarta Pusat.

3.1. Time and Place

The Introduction of Turtle Excluder Devices/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas "Reduction of Environmental Impact From Tropical Shrimp Trawling, Through The Introduction of By-Catch Reduction Technologies and Change of Management" was held either in-land and on-board training from November 12th – 16th , 2006.

The opening ceremony was officially held on November 12th, 2006 in Tarakan Plaza hotel Tarakan, East Kalimantan Province. Meanwhile, the on-board demonstration and training had been in the adjacent of Tarakan and Nunukan waters, Makassar Strait *(as shown in figure 1)*.

Figure 1. On-board Demonstration and Training location

3.2. Opening

The activities was officially opened by Director of Fishing Vessles and Fishing Gears on behalf of Director General of Capture Fisheries, MOMAF (Mr. Dedy H. Sutisna), on:

Day / time : Sunday, November 12th, 2006
Time : 19.00 - 22.00 WIT (Central Indonesian Time)
Place : Tarakan Plaza Hotel, Tarakan – East Kalimantan Province

During the Opening ceremony, other speeches were also remarked by:

a. Welcome Speech by Mayor of Tarakan City by Mr. dr. H. Jusuf S. K
b. Welcome Speech by Chief of Fisheries Office of East Kalimantan Province (Mr. Ir. H. Khaerani Saleh, MM)
c. Report Speech of The Committee by Mr. Jainur Manurung.

d. NOAA Speech on behalf of the FAO by Mr. Daniel Foster
e. Inaugural Speech by Director of Fishing Vessels and Fishing Gears on Behalf of The Director General of Capture Fisheries, MOMAF (Mr. Ir. Dedy H. Sutisna, MS)

The opening ceremony was continued by dialogue between Director of Fishing Vessels and Fishing Gears on Behalf of The Director General of Capture Fisheries, MOMAF accompanied by Chief of Fisheries Office of East Kalimantan Province, Chief of Fisheries Office of Tarakan City with local stake holders regarding the trawl fisheries issues in East Kalimantan Province. Some resumes of the dialogue, are:

1. People from some areas around the East Kalimantan have so many diverse view in regard with the trawl fisheries issue in their own territory;
2. The diversity of the views, are commonly based on some considerations:
   a. The willingness to utilize the (shrimp) resources optimally
   b. The awareness on horizontal conflicts may be occurred as impact of the trawl fisheries operation
   c. The needs to keep the fisheries resources particularly and marine habitat commonly conserved
3. Some proposes and informations during the dialogue will be use as referrences for the next policies
4. The Makassar Strait waters, especially the adjacent waters of Tarakan City is possible to be the pilot project for implementing the responsible fisheries management

3.3. Trainers and Trainees

The trainers of this workshop, are :

a. NOAA of USA	:	1 person
b. Fishing Technology Development Centre, Semarang	:	2 persons
c. Research Institiue for Marine Fisheries	:	2 persons
d. Bogor Agriculture University	:	1 person

The trainees of this workshops, are *(detail as attached)*:

a. Trainees from Central Government (Jakarta)	:	2 persons
b. Trainees from Mallacca Strait (Belawan and Riau)	:	2 persons
c. South China Sea & Karimata Strait (West Kalimantan and Jambi)	:	4 persons
d. Java Sea (West Java, Central Java, East Java, Central Kalimantan)	:	8 persons
e. Makassar Strait and Flores Sea (East Kalimantan, South Kalimantan, South Sulawesi)	:	14 persons
f. Banda Sea and Arafura Sea (Maluku, Papua)	:	2 persons
g. Seram Sea, Tomini Bay, Sulawesi Sea & Pasific Ocean (Gorontalo, Central Sulawesi, North Sulawesi)	:	3 persons
h. Hindian Ocean (Sibolga, West Sumatera, Bengkulu)	:	4 persons

3.4. Class Meeting

This section consists of :

a. U.S. TEDs Regulation in the Pasific Area
b. The eco-friendly Fishing Gears
c. The Design and Construction of The TED/ Super Shooter Type
d. Existing Condition of Trawl Net in Makassar strait
e. The Installation and Fishing Technique of The TED/Super Shooter
f. Practice: TED Installation to Trawl Net Fishing Gears
g. Sea Demonstration by 10 – 20 GT fishing vessels for TED
h. Sea Demonstration by 20 – 30 GT fishing vessels for TED
i. Evaluation of experimental
j. Review & Future Action Planning

All of the topics were presented in 2 (two) sessions, were: *1).* The Explanation Session, on which those topics were presented by the trainers; and *2).* The Discussion Session, on which the trainees could ask more explanation on the above topics. This methods were aimed to give more chance for the trainees to understand the topics. It's hoped to fully help the practical activities (both in-land and on-board).

3.5. In-land Practical

This part of the workshop was started by giving the explanation of the theory for BRDs' (TEDs) construction and installation on trawl net. The trainers demonstrated and practised trainees on the installation of TED on trawl net. The activities consisted of: net cutting, TED installing, net connecting and elevation measuring.

This practical was supported by the display as models of the net (had been installed each kind of the TEDs). Therefore, the trainees could directly see the performance of the installed BRDs on trawl net. It was held in the other side of the Tarakan Plaza Hotel – East Kalimantan Province.

3.6. On-board Demonstration and Training

This practical activity was held on the adjacent of Tarakan and Nunukan waters, Makassar Strait. During the sea demonstration, the trainees were divided into 2 (two) groups. The group (1) operated shrimp trawl net on which had been installed TED Super Shooter Flat Bottom type (MV. Madina, 30 GT). The group (2) operated shrimp trawl net on which had been installed TED Super Shooter Round Bottom type (MV. Karya Nelayan 2).

This activity had been conducted since Tuesday, November 14th and Wednesday, November 15th, 2006. MV. Madina shooted the shrimp trawl net for 3 (three) times each day with bottom opening. Meanwhile, MV. Karya Nelayan 2 shooted the shrimp trawl net for 3 (three) times each day with up-opening.

Technical specification of the trawl

No	Spesification	Size	
		Large	Medium
1	Headrope length (A)	25 m	20 m
2	Footrope length (B)	28 m	22,5 m
3	Body mesh size (C)	2”	2”
4	Intermediate circumference (D)	220 - 240	180
5	Codend circumference (E)	220 - 240	180
6	Codend mesh size	1 ¼”	1 ¼”
7	Codend mesh length	200	160 - 180

a. Super shooter specification

Two types of bycatch reduction device round bottom type and flat bottom type built from steinless steel were used the sea trial. The round bottom type was built around a 105 cm high, 90 cm width, distance between bar 9 cm, frame diameter ¾ inch, bar diameter 5/8 inch. The flapper funnel for round bottom type super shooter was set at the upper part of the codend. Meanwhile, the flat bottom type super shooter was built around 117 cm high, 90 cm width, distance between bar 9,5 cm, frame diameter 1 inch, bar diameter ¾ inch. The flapper funnel for round bottom type super shooter was set in the bottom part of the codend. The specification for both types of TED as can be seen in Figure 1 and 2.

During the sea trial a cover net was attached into the exit flapper, in order to investigate the escaped animals through the exit flapper.

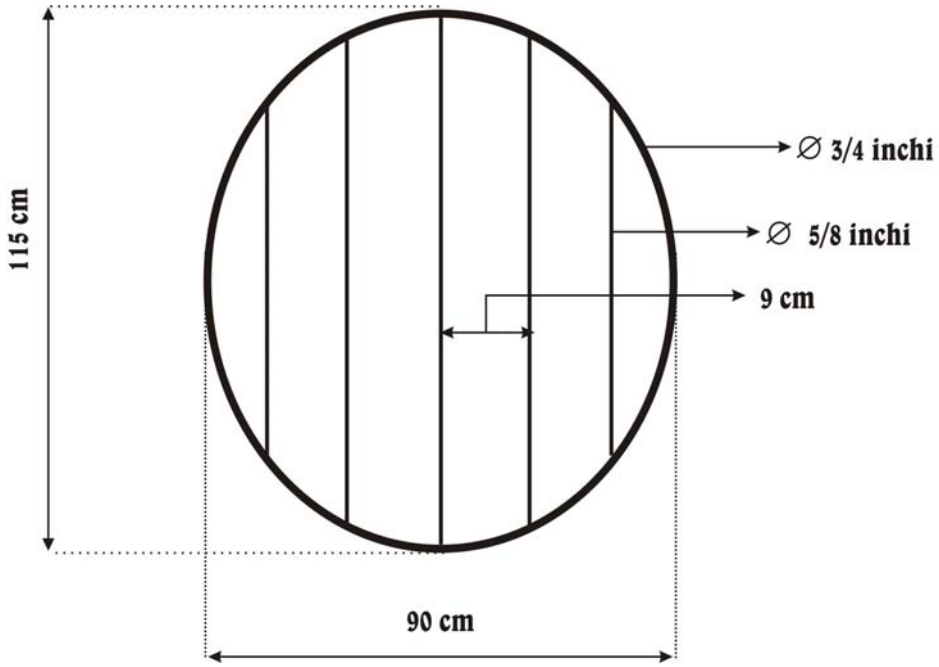
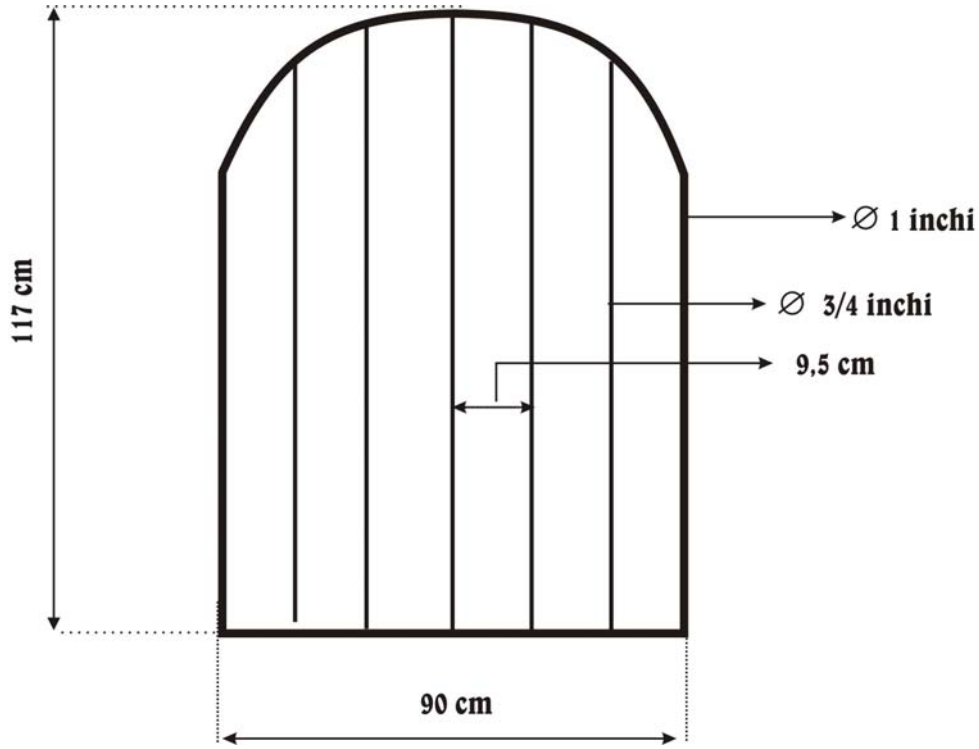


Figure 1. Specification of the round bottom type super shooter



b. Sea trial

Twelve hauls were carried out during daylight, at a towing speed ranged between 2. - 3. knots that lasted between 60 and 120 minutes. Depth ranged from 10 to 20 m. The two flat rectangular otterboards used during towing were 230 cm in length, 100 cm in width and had a depth of 9 cm (200 kg).

c. Data Analysis

After each haul, the total catch from the codend and cover was sorted into species. All of the fish were placed into baskets, weighed and the number of individuals were recorded. The standard length was measured for both codend and cover to the nearest 1.0 cm for determination of length frequency of the catch form codend and cover.

d. Results

Composition of the six times settings catch were devided into 2 (two) groups. First, TED TED Super shooter with round bottom types and second, TED super shooter with flat bottom. Each of which were weighted separately between the cod-end and the cover.

d.1 Catch composition of TED round bottom type

Table 1. The catch composition of TED super shooter round bottom type from codend and cover

Family	Species	Codend		Cover	
		Kg	Qty	Kg	Qty
DASYATIDAE	*Dasyiatis kuhlii*	1,82	2	0	0
	Gymn	7,1	2	0	0
ARIIDAE	*Arius thalassinus*	11,9	9	2,25	7
CYNOGLOSSIDAE	*Cynoglosus cynoglosus*	3,18	50	0	0
CLUPEIDAE	*Dussumieri acuta*	3,67	55	0	0
	Anodonstomata cacunda	0	0	0,1	2
ENGRAULIDAE	*Opistopterus tardore*	24,5	495	0,5	5
	Stelophorus indicus	2,60	578	0,1	15
	Thryssa mystax	0,75	58	0	0
FORMIONIDAE	*Formio niger*	0,35	2	0	0
LEIOGNATHIDAE	*Leiognathus splendens*	4,80	1056	0	0
	Leiognathus sp	54,05	1991	0,2	43
MUGILIDAE	*Mugil sp*	0	0	0,1	2
MULLIDAE	*Upeneus sulphureus*	7,35	339	0,1	5
PLATYCEPHALIDAE	*Platycephalus sp*	0,6	1	0	0
POMADASYDAE	*Pomadasys kaakan*	5,63	14	3,2	1
SCIANIDAE	*Johnius sp*	19,84	5267	0,35	7
SCOMBRIDAE	*Scromberomorus commersoni*	0,25	1	0	0
	Rastreliger canagurta	0,57	2	0	0
STROMATIDAE	*Pampus argenteus*	24,7	73	0,25	1
	Pampus chinensis	6,20	20	0	0
TERRAPONIDAE	*Terapon jarbua*	2,31	17	0	0
TRICHIURIDAE	*Trichiurus lepturus*	4,48	434	0	0
SQUIDS	*Loligo sp*	0,87	140	0	0
CUTTLES	*Sepia sp*	0,27	18	0	0
SHRIMP	*Penaeus monodon*	3,0	130	0	0
	Penaeus merguiensis	2,70	98	0	0
	Metapenaeus esculentus	0,30	11	0	0
	Metapenaeus ensis	13,90	3654	0	0
	Metapenaeus endeavour	7,10	1059	0	0
LOBSTER	*Panulirus sp*	1,3	3	0	0
OTHERS		4,1	147	3,7	3
TRASH FISH	*Diodontidae*	2,7	130	1,25	1
DEBRISH		35,20	na	4,0	na

d.2 Catch composition of TED flat bottom type

Table 1. The catch composition of TED super shooter flat bottom type from codend and cover

Family	Species	Codend		Cover	
		Kg	Qty	Kg	Qty
SPHYRNIDAE	*Sphyrna mokarran*	6,60	11	0	0
DASYATIDAE	*Dasyiatis kuhlii*	22,5	30	150	5
APOGONIDAE	*Apogon sp*	0,97	142	0	0
ARIIDAE	*Arius thalassinus*	5,32	79	0,60	4
BOTIDAE	*Pseudorhombus sp*	3,85	92	0	0
CARANGIDAE	*Alectis cilliaris*	0,54	39	0	0
	Alepes jedaba	5,60	119	0,1	1
	Megalapsis cordila	1,30	26	0	0
	Caranx sexfasciatus	0,20	4	0	0
	Chironemus toll	0,60	8	0	0
CYNOGLOSSIDAE	*Cynoglosus cynoglosus*	17,35	343	0,85	5
CLUPEIDAE	*Dussumieri acuta*	15,20	281	0	0
	Sardinella fimbriata	1,90	53	0,1	2
DREPANIDAE	*Drepana punctata*	0,40	16	0	0
ENGRAULIDAE	*Opistopterus tardore*	104,83	4012	3,15	69
	Stelophorus indicus	8,05	1951	0,1	15
	Thryssa mystax	5,60	496	0	0
FORMIONIDAE	*Formio niger*	0,1	24	0	0
LACTARIDAE	*Lactarius lactarius*	5,25	45	0	0
LEIOGNATHIDAE	*Leiognathus bindus*	84,0	13440	0	0
	Leiognathus equlus	0,78	35	0	0
	Leiognathus splendens	29,95	4048	0,40	24
	Leiognathus sp	0	0	0,1	21
	Gazza minuta	6,75	375	0	0
	Secutor insidiator	19,30	12051	0,2	2
	Secutor ruconius	6,80	1784	0	0
LUTJANIDAE	*Lutjanus decussatus*	4,40	11	0	0
	Caesio caerulourea	3,75	45	0	0
MULLIDAE	*Upeneus sulphureus*	20,80	1415	0,60	12
MURAENESOCIDAE	*Congresox thalapon*	0,20	4	0	0
PLATYCEPHALIDAE	*Platycephalus sp*	7,70	34	0,1	1
POMADASYDAE	*Pomadasys argereus*	0,75	30	0	0
	Pomadasys kaakan	4	20	0	0
POLIMENIDAE	*Eleutheureunema tetradactylum*	2,20	66	0,41	9
SCIANIDAE	*Johnius sp*	88,05	3991	0,75	17
STROMATIDAE	*Pampus argenteus*	52,6	272	0,60	2
	Pampus chinensis	0,90	12	0,90	1
TERRAPONIDAE	*Terapon therap*	3,80	15	1,55	7
	Terapon jarbua	0	0	1,20	3

continued table 2.

Family	Species	Codend		Cover	
		Kg	Qty	Kg	Qty
TRICHIURIDAE	*Trichiurus lepturus*	4,0	480	0,60	19
SQUIDS	*Loligo sp*	0,20	20	0	0
SHRIMP	*Penaeus monodon*	0,5	10	0,55	10
	Penaeus merguiensis	0	0	0,40	10
	Penaeus semisulcatus	5,15	1019	0	0
	Penaeus esculentus	6,01	905	0	0
	Metapenaeus ensis	14,08	1477	0,50	43
	Metapenaeus endeavour	4,29	969	0,10	3
	Trachyenus asper	3,18	807	0,25	8
	Solinocera	2,70	708	0	0
LOBSTER	*Panulirus sp*	30,85	43	0	0
OTHERS	*Squilla mantis*	3,59	195	0	0
CRABS	*Scylla serrata*	3,75	15	0,85	2
	Portunus pelagicus	0	0	0,1	2
OCTOPUS		8,25	39	0	0
MOLLOUSCA		12,50	351	0	0
OTHERS FISH		0	0	0,1	1
DEBRIS		0	0	25	na

d.3 Conclusions

1) Based on the catch composition, it shows that shrimp trawl gears catch were dominated by small sized species by-catch;
2) The TED installation (super shooter type) is effective to release big sized species (stingrays, etc);
3) Some species target (shrimp) were released up to 2,0% of total shrimp catch installed by TED super shooter flat bottom type;
4) Meanwhile, for the TED super shooter round bottom type there weren't target species (shrimp) released;

3.7. Closing

The Introduction of Turtle Excluder Devices/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas "Reduction of Environmental Impact From Tropical Shrimp Trawling, Through The Introduction of By-Catch Reduction Technologies and Change of Management" was officially closed by the Chief of Fisheries and Marine Affairs Office of Tarakan City, East Kalimantan Province, at:

Day/Date : Thursday, November 16th, 2006
Time : 09.00 – 10.00 WITA (Central Indonesian Time)
Place : Tarakan Plaza Hotel, Tarakan – East Kalimantan Province

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

During the activities, the trainees show their antusiastic to the issues of the activities. As all of the trainees are the person who have direct relation to the shrimp fisheries. Most of them are: fishermen, fisheries officer, Fisheries compliance officers, Polices, Indonesian Navy, Fisheries Service officers, Skippers (Fisheries Trawl Industry) and NGOs. Some conclusions, are:

a. Trainees realize the importance of conserving the fisheries resources and its habitats. It's proven that so far fishermen have installed a certain instrument/devices (some kind of TED) in their trawl net to release jelly fishes;

b. The city government of Tarakan fully supported to such an activities, as shown by the local government having a conservation area for the mangrove in the downtown;

c. Trainees (fishermen and NGOs, particularly) expecting to be able to operate the shrimp trawl legally with some regulations: installing a certain devices (any kinds of BRDs), open/close season, open/close area

d. The local government (Tarakan City, District of Bulungan dan District of Nunukan) agreed and supported to conduct research (as pilot project) for implementing the responsible trawl fisheries practices.

4.2. Recommendations

1) Further research on BRDs that appropriate with Indonesian waters need to be conducted;

2) Further reseach on trawl fisheries legal instrument, ie: Presidential Decree 39/1980, Presidential Decree 85/ 1982 to Director General of Fisheries Decree on Shrimp Trawl Construction installed by TED;

3) International/regional or other country regulations on trawl fisheries management must be taken into account for the further research must take into account

4) To utilize the fisheries resources optimally by keep concerning with the precautionary approach, a certain area (waters of Macassar Strait) as pilot project need to be determined for implementing the trawl fisheries management.

ANNEXES

Annex 1 : Name of Trainees and Trainers

Name of Trainees

No	Name	Institution
1	Wilson S., A.Pi, MMP	Marine Affairs and Fisheries Officer of North Sumatera Province, Medan
2	Tinus Pirade, S.Pi	Marine Affairs and Fisheries Officer of District Sibolga - North Province
3	Maychel Daniel	Marine Affairs and Fisheries Officer of Papua Province, Merauke
4	Raharjo	Marine Police, Tarakan - East Kalimantan
5	Junaidi, S.Pd	Fisheries High School, Tarakan - East Kalimantan
6	Allo	KPLP Tarakan - East Kalimantan
7	Irfan, A.Md. Pi	Marine Affairs and Fisheries Officer of District Nunukan - East Kalimantan
8	H. Alunan	Marine Affairs and Fisheries Officer of West Sumatera Province, Padang
9	Fredrik Sibulo, S.Pi	Marine Affairs and Fisheries Officer of North Sulawesi Province, Manado
10	Suparno	Marine Affairs and Fisheries Officer of Central Java Province, Semarang
11	M. Alinurdin, S.St. Pi	Marine Affairs and Fisheries Officer of West Kalimantan Province, Pontianak
12	Suriansyah	Marine Affairs and Fisheries Officer of South Kalimantan Province, Banjarmasin
13	Rachmat, ST	Marine Affairs and Fisheries Officer of South Kalimantan Province, Banjarmasin
14	Fajar P. Pramono, A.Pi	Marine Affairs and Fisheries Officer of South Kalimantan Province, Banjarmasin
15	Febrian Budianto, S.Pi	Marine Affairs and Fisheries Officer of South Sulawesi Province, Ujung Pandang
16	Sahabudin	Marine Affairs and Fisheries Officer of Bengkulu Province, Bengkulu
17	Misyadi	Marine Affairs and Fisheries Officer of District Tarakan - East Kalimantan
18	R. Abdul Gafur	Marine Affairs and Fisheries Officer of Gorontalo Province, Gorontalo
19	Dicky Hariyono	Marine Affairs and Fisheries Officer of Maluku Province, Ambon
20	Toni Syahril	KP3 Tarakan - East Kalimantan
21	Imran	Marine Affairs and Fisheries Officer of Jambi Province, Jambi
22	M. Idee Nurdin, SE	Marine Affairs and Fisheries Officer of West Java Province, Bandung
23	Fadly, S.Pi	Marine Affairs and Fisheries Officer of East Java Province, Surabaya
24	H. Sahibuddin	Marine Affairs and Fisheries Officer of Riau Province, Pekanbaru

25	Harun Al Rasyid, S.Pi	Marine Affairs and Fisheries Officer of District Paser - East Kalimantan
26	M. Adriani	Marine Affairs and Fisheries Officer of East Java Province, Surabaya
27	Amirullah, S.Pi	Directorate General of Capture Fisheries, MOMAF - Jakarta
28	Alimuddin	Marine Affairs and Fisheries Officer of West Kalimantan Province, Pontianak
29	Hamzah	Marine Affairs and Fisheries Officer of West Kalimantan Province, Pontianak
30	Ir. Suprianto HP, M.Si	Marine Affairs and Fisheries Officer of District Nunukan - East Kalimantan
31	Kamilan, SP	Marine Affairs and Fisheries Officer of Central Java Province, Semarang
32	M. Firdaus	Marine Affairs and Fisheries Officer of District Sibolga - North Province
33	Ir. Bakri Rizal, M.Si	Marine Affairs and Fisheries Officer of East Kalimantan Province, Samarinda
34	Ign. Joko F.	Marine Affairs and Fisheries Officer of East Kalimantan Province, Samarinda
35	Rudi	Marine Affairs and Fisheries Officer of Central Kalimantan Province, Palangkaraya
36	Ansyaruddin	Directorate General of Capture Fisheries, MOMAF - Jakarta
37	Darwis Manurung, SH, MH	Marine Affairs and Fisheries Officer of North Sumatera Province, Medan
38	Asbar Laga, ST, M.Si	Marine Affairs and Fisheries Officer of Central Sulawesi Province, Palu
39	Suardi Sulaksana	Marine Affairs and Fisheries Officer of Central Kalimantan Province, Palangkaraya
40	Baskoro	Marine Affairs and Fisheries Officer of Central Java Province, Semarang

Name of Lecturers

No	Name	Institution
1	Ir. Dedy H. Sutisna, MS	National Steering Committee, Jakarta
2	Ir. Tyas Budiman, MM	National Project Coordinator, Jakarta
3	Ir. Agustinus Anung W., M.Si	Research Institute for Marine Fisheries, Jakarta
4	Ir. Ronny I. Wahyu, M.Phill	Bogor Agriculture University, Jakarta
5	Ir. Suhariyanto	Fishing Technology Development Center, Semarang
6	Yoyok Suariyoto, S.St.Pi	Fishing Technology Development Center, Semarang
7	Mr. Daniel G Foster	NOAA - USA
8	Mr. Sujianto	Research Institute for Marine Fisheries, Jakarta

Note: No 1 - 6 were funded by FAO-GEF Project

Annex 2: Schedule of Activities

No	Day / Date	Activity	Remarks
1	**Sunday, Nov 12th, 2006**		
	14.00	Check in: Committees, Participants, Trainers	Hotel
	15.00 -	Preparation	Committee
	19.30 – 19.40	Opening ceremony (ackhowledgement, Indonesia Raya)	(mc&dirigen)
		Acknowledgement	Widi Anggraeni/mc
		Indonesia Raya	Agustina T.T.
	19.40 – 19.50	Mayor of Tarakan City welcome speech	Mr. dr. H. Jusuf S. K.
	19.50 – 20.00	Chief of Fisheries Office of East Kalimantan Province *(welcome speech)*	Mr. Ir. H. Khaerani Saleh, MM
	20.00 – 20.10	Report Speech of The Committee	Mr. Tyas B./Mr. Jainur M.
	20.10 – 20.20	NOAA Speech on behalf of the FAO	Mr. Daniel Foster
	20.20 – 20.35	Director of Fishing Vessels and Fishing Gears on Behalf of The Director General of Capture Fisheries, MOMAF *(inaugural speech*)	Mr. Ir. Dedy H. Sutisna, MS
		Invocation	Mr. Muklis
	20.35 – 20.50	Coffee break	committee
	20.50 – 22.20	Dialogue: DG with local stake holders	Mr. Dedy HS/ Mr. Chaerani/ Mr. Major of Tarakan
2	**Monday, Nov 13th, 2006**		
	08.30 – 09.30	U.S. TEDs Regulation in the Pasific Area	Mr. Daniel Foster (NOAA)
		Discussion	Mr. Ronny I. Wahyu (moderator)
	09.30 – 10.30	The eco-friendly fishing gears	Mr. Ronny I. Wahyu (FPIK-IPB)
		Discussion	Mr. Agustinus Anung (moderator)
	10.30 – 10.45	Coffee break	Committee
	10.45 - 11.45	The design and construction of the TED (super shooter) and JTED (semi curve rigid sorting grid)	Mr. Agustinus Anung/ Mr. Sujianto (RIMF)
		Discussion	Mr. Suhariyanto (moderator)
	11.45 – 13.00	Lunch Break	Committee
	13.00 – 14.00	Existing condition of trawl net in Makassar strait	Mr. Zainuri/ Mr. Juliani (Mulawarman University)
		Discussion	Mr. Tyas B. (moderator)
	14.00 – 14.15	Coffee break	Committee
	14.15 – 16.15	The installation and fishing technique of the TED (super shooter)	Mr. Dan Foster (NOAA), Mr. Suhariyanto/ Mr. Yoyok Suariyoto (BBPPI Team)
		Practice: TED installation to trawl net fishing gears	
3	**Tuesday, Nov 14th, 2006**		
	… - 08.00	Breakfast	Hotel
	08.00 – …	Sea Demonstration by 10 – 20 GT fishing vessels for TED Sea Demonstration by 20 – 30 GT fishing vessels for TED	Team of instructors (2 groups)
	14.30 – …	Back to fishing base	Team of instructors
4	**Wednesday, Nov 15th, 2006**		
	… - 08.00	Breakfast	Hotel
	08.00 – …	Sea Demonstration by 20 – 30 GT fishing vessels for TED Sea Demonstration by 20 – 30 GT fishing vessels for TED	Team of instructors (2 groups)
	14.30 - …	Back to fishing base	Team of instructors
	19.00 - 20.00	Evaluation of experimental	Team of instructors

5	**Thursday, Nov 16th, 2006**		
	… - 08.00	Breakfast	Hotel
	08.00 – 09.00	Review & Future Action Planning	National SC
	09.00 - 10.00	Closing ceremony	Committee
		Acknowledgement	Widi Anggraeni/mc
		Padamu negeri	Agustina T.T.
		Report of committee	committee
		Closing address	Mr. Ir. Abidinsyah, M.Si
		Invocation	Mr. Muklis
	10.00 - …		Committee

Annex 3: Documentation of The Introduction of Turtle Excluder Devices/TED (Super Shooter) on Small Scale Eco-friendly Trawl Net in Makassar Strait Areas

Inaugural speeches on The opening ceremony: Major of Tarakan, Head of East Kalimantan Fisheries Services, NOAA Expert, Director of Fishing Vessels and Fishing Gears

Dialogue between Director of Fishing Vessels and Fishing Gears on Behalf of The Director General of Capture Fisheries, MOMAF accompanied by Chief of Fisheries Office of East Kalimantan Province, Chief of Fisheries Office of Tarakan City with local stake holders regarding the trawl fisheries issues in East Kalimantan Province.

In-class meeting:
Mr. Daniel Foster (NOAA – USA); Mr. Ronny I Wahyu (Univ of Bogor Agriculture)
Mr. Agustinus Anung W (RIMF – Jakarta); Mr. Suhariyanto (FTDC – Semarang)
Mr. Zainuri and Mr. Juliani (Mulawarman Univ)

In-land practices:
TED installation (net cutting, mesh counting, float attaching, etc)







On-board demonstration and training

Closing ceremony

Annex 4: Publications

Annex 5: Hand Out

Hand Out