FINAL REPORT OF WORK DONE BY THE SIFT ON THE TED PROJECT UNDER THE GOI-UNDP SEA TURTLE PROJECT.

(August 2001 to April 2002)

STATE INSTITUTE OF FISHERIES TECHNOLOGY
KAKINADA
FINAL REPORT OF WORK DONE BY THE SIFT, KAKINADA UNDER THE GOI UNDP OLIVE RIDLEY SEA TURTLE CONSERVATION PROJECT.

A contract under the GOI-UNDP Olive Ridley Sea Turtle Conservation Project, was entered into by the Wildlife Institute of India, Dehradun (implementing agency) and the State Institute of Fisheries Technology, Kakinada (recipient organization) in August 2001 with the following broad terms of reference:

- To conduct a workshop for the fishing communities, fisheries officials and other stakeholders on the usage of TED along the coast of A.P.
- To set up a demonstration cum information base at the SIFT, Kakinada for a proposed period of one year for the dissemination of information and practical demonstrations of TED, which they may continue operating after project completion.

Tasks to be accomplished:

- To conduct a two day workshop primarily for fishing communities and also for Fisheries officials and other stakeholders on the usage of TED along the coast of A.P. including a practical demonstration and a theoretical workshop.
- To conduct demonstrations for trawler operators at sea on the use of TED for the conservation of sea turtles.
- To educate the fisherfolk on the need to conserve turtles.
- To serve as a state wide information center for dissemination of information on turtle conservation for fishers, students, general public and gear technologists.
- To train and encourage fishers in the use of TED.

The implementing of the project by the SIFT was carried out in a phased and planned manner to achieve the intended results. The tasks put forth were accomplished in the following manner:

1. Awareness programs were conducted in the vulnerable areas during the Turtle Preenesting period in the fisherman villages to create an awareness among the fisherfolk about the need to conserve turtles and their habitat for protecting the marine environment.

2. A two day workshop on the “Operation of the TED” was conducted at Kakinada on the 24th and 25th January 2002, wherein about 200 members consisting mostly of fishermen from all over the state participated.

3. A TED demonstration cum information centre was established on 26-1-02 at the SIFT, Kakinada in the second floor of the Administrative Building.

4. Demonstrations of the operation of the TED were conducted at all the Fishing Harbors and jetties in the state to encourage the fishermen in the use of TED.

5. The “Save Turtle Team” comprising the Faculty of the SIFT conducted beach patrols to make a random survey of the incidental mortality in fishing gear, followed by awareness meetings at the fisherman villages.

6. Literature in Telugu consisting of three catchy pamphlets were prepared and distributed during the awareness programs and TED demonstrations to make the mission more effective.

7. A poster in Telugu and English on sea turtle conservation was printed to convey the message to most interior fisherman villages.

8. Audio visual equipment was purchased with the balance of TED workshop funds to exhibit the activities taken up by the Fisheries Department for conservation of sea turtles and implementing the use of the TED, even to the fishermen living in interior villages.

Detailed reports of the work done on these lines is submitted in the following pages.
AWARENESS PROGRAMS IN THE PRE-NESTING PERIOD

Awareness programs at the village-level were conducted by the Faculty of the SIFT at the vulnerable areas, especially the marine fisherman villages close to the Orissa state border in November 2001:

- to create an awareness about the need to conserve sea turtles.
- to inform them on ways to deal with stranded turtles in fishing gear.
- to encourage the practice of protecting the eggs of turtles.
- to inform them of the use of the TED to prevent incidental mortality in trawl nets.

The details of the awareness programs conducted is as submitted hereunder.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>District</th>
<th>Village</th>
<th>No. of fisherfolk attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visakhapatnam</td>
<td>Pentakota</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Bangarayyaapeta</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Revupolavaram</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Vizag Fishing Harbor</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Pudimadaka</td>
<td>225</td>
</tr>
<tr>
<td>6</td>
<td>Vizianagaram</td>
<td>Kondrajupalem</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Mukkam</td>
<td>200</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Chintapalli</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Srikakulam</td>
<td>Narasaihpeta</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Pedaganagallapeta</td>
<td>60</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Chinnaganagallapeta</td>
<td>30</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Pukkalapeta</td>
<td>70</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Kasipeta</td>
<td>50</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Barua</td>
<td>175</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Kapasaguddi</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>1530</td>
</tr>
</tbody>
</table>

The awareness programs yielded good results as most of the fishermen in the interior villages were not aware of the fact that the sea turtles were endangered and protected under various Acts and readily agreed to cooperate with the authorities in the conservation of turtles.
The Save turtle team of the SIFT.

An awareness programme at the Kakinada fishing harbour on the use of TED.
RANDOM BEACH PATROLS CONDUCTED TO HAVE AN IDEA ABOUT THE INCIDENTAL MORTALITY IN FISHING GEAR

The "Save Turtle Team" of the SIFT conducted random surveys in some of the marine fisherman villages in East Godavari District in the month of December 2001 to have an idea of the incidental mortality in fishing gear. The carcasses of the turtles killed in encounters with gillnets and trawl nets (especially) were washed ashore.

On 5-12-01 and 15-12-01 the following villages along a stretch of about 60 km. were surveyed for incidental mortality:

The details of the awareness programs conducted is as submitted hereunder.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Village</th>
<th>No. of carcasses of turtles observed</th>
<th>Probable cause of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coastal area adjoining the Kakinada Fishing harbour</td>
<td>4</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>2</td>
<td>Subbampapeta</td>
<td>7</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>3</td>
<td>Mayapatnam</td>
<td>5</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>4</td>
<td>Christupuram</td>
<td>2</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>5</td>
<td>Konapapapeta</td>
<td>3</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>6</td>
<td>Chodipallipeta</td>
<td>2</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>7</td>
<td>Addaripeta</td>
<td>4</td>
<td>Stranding in trawl gear</td>
</tr>
<tr>
<td>8</td>
<td>Hope Island</td>
<td>17</td>
<td>Stranding in trawl gear; nets for catching prawn seed were seen tied all along the shore for a stretch of about 6km which are bound to prevent the mother turtles from visiting this area for nesting; the local fishermen were advised to refrain from this practice.</td>
</tr>
</tbody>
</table>
SAVE THE MARINE TURTLE - SAVE THE MARINE ENVIRONMENT

TED INFORMATION / DEMONSTRATION CENTRE
(FUNDED BY: WILD LIFE INSTITUTE OF INDIA, DEHRADUN)
STATE INSTITUTE OF FISHERIES TECHNOLOGY
JAGANNAICKPUR, KAKINADA - PHONE: 378552

Designed & Printed by: RAJ SCREENS - RAJ OFFSET, KHA - 369597
In addition to this data considerable number of turtles were reported washed ashore dead at Manchineelapeta and Bhavanapadu villages in Srikakulam districts during the months of January and February 2002; the cause of their death was reported to be death due to entangling in large meshed gill nets, locally known as “teku vala”. The Asst. Director of Fisheries, Srikakulam has taken action to discourage their use in the turtle nesting season.

These observations on incidental mortality of turtles in fishing gear were highlighted through the local Telgu dailies to enable the fishermen to realize the ill effects of not using the TED, inspite of the fact that the use of the TED has been made compulsory in shrimp trawling vide GOMs. NO. 114 of the AH, DD & Fisheries Dept. dated 8-9-01, which empowers the officials to impose a fine of Rs. 2,500/- and confiscation of the catch, when it is not used.

These random surveys have helped to yield effective results as the practical field level information collected in the local areas could convince the fishers that there is incidental mortality of turtles from trawl gear and thus convince them to use the TEDs.

WORKSHOP ON THE “OPERATION OF THE TURTLE EXCLUDER DEVICE” CONDUCTED AT KAKINADA ON THE 24TH AND 25TH JANUARY 2002:

A workshop on the “Operation of the Turtle Excluder Device” was conducted at Kakinada on the 24th and 25th January 2002 in which about 200 participants comprising mostly the fishermen from the mechanized fishing industry and Scientists from the CMFRI, CIFT and the FSI, Faculty of the Andhra University, Forest dept. officers, NGOs the Press and the Fisheries Officials of the Govt. of AP attended.

The Hon’ble Minister for Fisheries & B.C. Welfare formally inaugurated the theoretical workshop on 25-1-02; the inaugural session was attended by the local MLA, MP (Rajya Sabha) and other local political leaders. The Nodal Officer, GOI-UNDP Sea Turtle Project, Dr. B.C. Choudhury attended the workshop on behalf of the Wildlife Institute of India, Dehradun. The workshop comprised a practical demonstration of the operation of the TED by the scientists of the CIFT on 24-1-02, followed by the theoretical workshop on 25-1-02. The interactive sessions were conducted, after the Inaugural Session and was divided into the following sessions:

- Session 1 : Status of sea turtles - Conservation measures
- Session 2 : Fisheries Interface Problems
- Session 3 : Community based participation of fisherfolk in turtle conservation
- Session 4 : Strategy and Planning
- Plenary Session

A detailed report of the individual sessions and the detailed report of the recommendations of the participants is submitted.
The Chief guest, Sri N. Narasimha Rao, Hon’ble Minister for Fisheries and B.C. Welfare addressing the gathering during the TED workshop.

Dr. B.C. Choudhury receiving the Turtle Memento from the Hon’ble Minister for Fisheries & BC Welfare.
A workshop on the Operation of the Turtle Excluder Device [TED]  
Conducted by the  
State Institute of Fisheries Technology, Kakinada  
and  
Wildlife Institute of India, Dehradun  
[Under the GOI UNDP Sea Turtle Project]  
January 24-25, 2002.  
Kakinada, Andhra Pradesh.  
Workshop schedule for the 2nd day of the workshop. (The first day will consist of an onboard demonstration of the TED for fishers and other stakeholders)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Session chair / Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-11am</td>
<td>Inauguration and Opening address</td>
<td>Sri N. Narasimha Rao, Hon’ble Minister for Fisheries &amp; BC Welfare, Govt. of A.P.</td>
</tr>
<tr>
<td>11-11.15</td>
<td>Tea break</td>
<td></td>
</tr>
<tr>
<td>Session I</td>
<td>Status of Sea Turtles – Conservation Measures.</td>
<td>Session chair: Dr. M. Rajagopalan, Scientist, CMFRI, Kochi</td>
</tr>
<tr>
<td>11.15-11.35am</td>
<td>Overview &amp; perspectives, GOI UNDP Sea turtle Project</td>
<td>Sri B.C. Choudhury, Nodal Officer, GOI-UNDP Sea Turtle Project, Wildlife Institute of India, Dehradun</td>
</tr>
<tr>
<td>11.35-11.55am</td>
<td>Role of the Forest Dept. in conservation of sea turtles</td>
<td>Sri N. Vara Prasada Rao, DFO, State Silviculturist, Rajamandry</td>
</tr>
<tr>
<td>11.55-12.15pm</td>
<td>Possible threats &amp; conservation measures for the nesting of sea turtles</td>
<td>Sri P.S. Rajasekhar, Asst. Professor, Andhra University Visakhapatnam</td>
</tr>
<tr>
<td>12.15-1pm</td>
<td>Discussion (followed by lunch)</td>
<td></td>
</tr>
<tr>
<td>Session II</td>
<td>Fisheries Interface Problems</td>
<td>Sri C. Ilaiiah, Addl. Director of Fisheries, Hyderabad</td>
</tr>
<tr>
<td>2-2.15pm</td>
<td>Review of threats to sea turtles and Incidental mortality in fishing gear.</td>
<td>Dr. M. Rajagopalan, Scientist, Central Marine Fisheries Research Institute, Kochi.</td>
</tr>
<tr>
<td>2.15-2.30 pm</td>
<td>Application of the CIFT-TED for conservation of sea turtles</td>
<td>Dr. Percy Dawson, Scientist, Central Institute of Fisheries Technology, Kochi</td>
</tr>
<tr>
<td>2.30-2.45 pm</td>
<td>Fisheries management in the conservation of sea turtles in Malaysia and Australia and its relevance to India</td>
<td>Sri G. Venkata Raju, Asst. Director of Fisheries [Marine] o/o Commissioner of Fisheries, Hyderabad</td>
</tr>
<tr>
<td>2.45-3.15pm</td>
<td>Discussion</td>
<td>(P.T.O.)</td>
</tr>
</tbody>
</table>
Sri C. Iliah, Additional Director of Fisheries receiving the memento from Sri O. Bhavani Sankar, Principal, SIFT, Kakinada.

The participants of the TED workshop
<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Topic</th>
<th>Chair</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>3.15-3.25 pm</td>
<td>Role of the NGOs in sea turtle conservation</td>
<td>Sri Pradeep Kumar Nath, President, VSPCA, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.25-3.35 pm</td>
<td>Green Mercy’s Mission to save sea turtles</td>
<td>Sri K V Ramana Murty, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.35-3.40 pm</td>
<td>Feedback on the observation of demonstration of TED</td>
<td>Office bearer of the Swarna Andhra Mechanised Boat Owners’ Welfare Association, Kakinada</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.40-3.45 pm</td>
<td>-do-</td>
<td>Office bearer of the Mechanised Boat Owners Association, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.45-3.50 pm</td>
<td>-do-</td>
<td>Office bearer of the Dolphin boat operators’ Association, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.50-3.55 pm</td>
<td>-do-</td>
<td>Representative of the mini trawlers association, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.55-4.00 pm</td>
<td>-do-</td>
<td>Representative of the big trawlers Association, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.00-4.05 pm</td>
<td>Feedback on the observation of demonstration of TED</td>
<td>Representative of the mechanized boat owners association, Machilipatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.05-4.10 pm</td>
<td>Feedback on the observation of demonstration of TED</td>
<td>Representative of the mechanized boat owners association, Nizampatnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.10-4.15 pm</td>
<td>Tea &amp; snacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Session</td>
<td>Strategy &amp; Planning</td>
<td>Sri B.C. Choudury, Scientist, Wildlife Institute of India</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.15-4.30 pm</td>
<td>Session planning &amp; group formation</td>
<td>Sri M.A. Yakub Basha, Workshop Coordinator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.30-5.15 pm</td>
<td>Thematic group deliberations</td>
<td>Group Representatives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plenary</td>
<td>Brief presentations by group representatives and finalization of the recommendations of the workshop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>session</td>
<td>5.15-5.30 pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.30-6pm</td>
<td>Valedictory, Closing remarks. Vote of thanks.</td>
<td>Sri Y. Prakasa Rao, Jr. Director of Fisheries (coast), Kakinada</td>
<td></td>
</tr>
</tbody>
</table>
The recommendations put forth by the participants during the "Workshop on the Operation of the TED" conducted by the Dept. of Fisheries and Wildlife Institute of India at Kakinada on 24th & 25th January 2002 have been categorized under 3 heads as follows:

1. Protection, Enforcement & Regulation
2. Monitoring, research & evaluation
3. Community based conservation

The recommendations put forth by the participants have been summarized as follows:

**Recommendations under Protection, Enforcement & Regulation:**

1. Interdepartmental co-ordination among concerned state govt. departments i.e. Fisheries and Forest departments in collaboration with Wildlife Institute of India, ICAR Institutes, Fishermen and NGOs is necessary, as the strategies for conservation of turtles will not be successful with isolated efforts.

2. As the status of sea turtles varies from state to state, strategies for conservation should be as per local conditions.

3. National Marine Turtle Conservation Policy is to be formulated.

4. Existing Legislations need to be reviewed.

5. Reclamations of beaches and protection of nesting beaches should be taken up by the Forest dept.

6. Illumination of nesting beaches by hatcheries should be lessened during nesting season.

7. Strict implementation of the use of the TED in shrimp trawling, as prescribed in the A.P. Marine Fishing Regulation Act

8. An attempt to be made on collection of data on incidental mortality of turtles in fishing gear along the Andhra Pradesh coast

9. Proper regulatory measures for mitigating incidental mortality in gill nets should be formulated by the Fisheries department and the CIFT.

10. The proposal to declare certain areas in A.P. near the Orissa border as turtle sanctuaries needs to be considered.

11. A long term Action Plan for atleast 10 years should be drafted for effective conservation of sea turtles.

12. Identification of nesting beaches along coastline to be confirmed.

13. Feedback from the fisheries department and fishermen must be taken into consideration for future TED designs.

14. The State Institute of Fisheries Technology, Kakinada in coordination with the Jt. Director of Fisheries(coast), NGOs to work out an Action Plan at village level.

15. Eco-tourism to be linked with conservation of turtles.

**Recommendation Under Monitoring, Research & Evaluation:**

1. a) Monitoring of the use of the TED by the fishing trawlers has to be monitored at sea by means of the patrol boats.
   
   b) Monitoring of nesting zones along the entire coastline of A.P. to be surveyed for nesting and incidental mortality; landside monitoring to be done by the Forest dept and sea based to be taken by the Fisheries Dept.
   
   c) Monitoring the regulatory measures should be taken up by the Fisheries Officials of the concerned areas.

2. Apex monitoring team comprising of officials of Save turtle team of S.I.F.T.; other departmental officers of A.P. State Fisheries, Forest Department, CMFRI, Andhra University, NGOs and local fishermen.

3. On-going research on TED technology to be a long term process to suit to the needs of local fishing.
4. Tagging and Telemetric methods to be taken up by NRSA and WII.

5. Collection of data of incidental mortality of turtles all along coast. Computerization of the same- Comparing it with the base line data, Evaluation to be done every year by the apex team and disseminate the same to all concerned.

6. Based on Evaluation - Intermediary meet of all department officials involved to revalidate the effectiveness of the plan.

7. Research on TED designs to be explored by CIFT.

8. Funding by concerned agency throughout the action plan period is necessary.

9. Study tour of SIFT faculty to Gaharimata in the forthcoming month is to be arranged to study different aspects of turtle conservation.

10. TED - information centre of SIFT - to act as Nodal monitoring and information centre.

11. Training to faculty of SIFT on conservation of sea turtles to be given at Orissa coast and on design of TED at CIFT, Cochin.

12. Research on probes for identification of entry of turtles in trawls nets to be done by WII and NRSA.

13. Periodic trial netting with new designs of TED need to be experimented in order to decide its efficiency.

Recommendations for Community based Conservation:

1. SIFT - should play a vital role in bringing about awareness and co-ordination among all the stake holders viz. NGOs, Fisherfolk and Forest department.

2. Awareness programmes should be conducted throughout A.P. Coast line about conservation of turtles.

3. For popularization of TED awareness at all leading fishing harbours of A.P. it is necessary to safeguard the interests of fisherfolk.

4. Regional level work-shop on small scale may be organized in order to bring all concerned for a better understanding about conservation of sea turtles, as fishing activities vary from region to region.

5. Forest department officials should take ample interest to see that volunteers of VSS also cater to the interests of turtle conservation.

6. Awareness among fisherfolk children regarding conservation can be initiated at school level onwards by arranging competitions like debate, painting and poster making etc.

7. Sea Turtle Conservation messages may be disseminated to the coastal communities vide plays, skits, folk songs, dramas and display of placards, by organizing rallies, posters etc.

8. Formation of Turtle clubs at village level may be taken up and the best club may be awarded incentive.
ESTABLISHMENT OF THE TURTLE EXCLUDER DEVICE (TED) INFORMATION CUM DEMONSTRATION CENTER AT THE STATE INSTITUTE OF FISHERIES TECHNOLOGY, KAKINADA

The TED Information cum Demonstration centre was established at the State Institute of Fisheries Technology, Kakianda on 26-1-02 in the second floor of the administrative building. The centre was formally inaugurated by Dr. B.C.Choudhury, Nodal Officer, GOI-UNDP sea Turtle Project, Wildlife Institute of India, Dehradun. The TED Center has been established to conduct demonstrations of the operation of the TED at sea for fishermen and for disseminating information on the TED and sea turtle conservation. The centre is well equipped with the TED model on display, a photo exhibition, literature in Telugu, poster in Telugu and English, display boards on the life history, different species and other basic facts about turtles and their conservation.

The TED center established at the SIFT is visited by the departmental officers, who are on refresher training, students, fishermen, the press and the general public. The Faculty attached to the TED center have conducted demonstrations of the operation of the TED at all the fishing harbors and Jetties in the state of A.P. They have also conducted awareness programs at these places about the need to conserve sea turtles.

A detailed report on the TED demonstrations conducted is submitted in the following pages.
The SIFT Faculty explaining the working of the TED to the departmental officer trainees in the TED Centre.

Dr. B.C. Choudhury, Scientist / Nodal Officer, Wildlife Institute of India formally inaugurating the TED information centre at the SIFT, Kakinada on 26-1-02.
DEMONSTRATIONS OF THE OPERATION OF THE TED
AT ALL THE FISHING HARBOURS IN THE STATE OF ANDHRA PRADESH

As part of the duties entrusted under the project the Faculty of the SIFT conducted demonstrations of the TED operation at Kakinada, Visakhapatnam, Machilipatnam, Vadarevu, Nizampatnam and Krishnapatnam. The demonstrations were intended:

• To erase the common misconception among fishers that targeted catch to some extent is lost in the TED with the exclusion of turtles. The demonstrations were successful in convincing the fishers that only a very negligible quantity of catch is lost.

• To convince the fisherfolk of the immediate need to conserve sea turtles.

• To assure the fishers that fuel consumption is not increased due to additional load of the TED on the trawl. This was also clarified that the TED loses its weight, when immersed in water, hence its weight does not tell on the fuel consumption of the fishing vessel.

• To acquaint the fishermen about the fabrication and working of the TED, which is suited to their local requirement.

• Finally to convince them that the CIFT-TED was 100% efficient to exclude sea turtles without a concomitant loss of targeted catch. This was achieved as in one of the demonstrations an Olive Ridley turtle was successfully excluded in the cover net.

The detailed reports of each TED demonstration is submitted.
Report on the demonstration of the Operation of the TED conducted by the Scientists of the CIFT and the Faculty of the SIFT on 24-1-02 for the fishermen.

The demonstration of the Operation of the TED for the benefit of the fishermen was conducted on the first day of the workshop on 24-1-02 from 7 a.m. at the SIFT jetty. At the outset the very purpose of the use of the TED, the functioning of the TED, its assembling in the trawl net, its fabrication and the compulsory use of the TED as prescribed in the AP MFR Act were explained to the fishermen by the Faculty and the Scientists. About 40 fishermen engaged in mechanized trawling from Visakhapatnam, Kakinada, Machilipatnam, Nizampatnam and Nellore attended the demonstration at sea. Four fishing boats (Sorrah type) were operated, with 2 Scientists from the CIFT, one Scientist from the CMFRI, one Asst. Professor from the Andhra University, 2 NGOs the ADF, SIFT [Gear Section] and the FDO, SIFT [Boasts] on board along with the fishermen. The results and observations boat-wise are submitted hereunder:

**First boat:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regn. No.</td>
<td>FKKD 1234 (hired by SIFT)</td>
</tr>
<tr>
<td>Depth of operation</td>
<td>About 30m; towards Hope Island</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
<tr>
<td>Catch in cod-end on hauling</td>
<td>About 35 kgs [retained target catch]</td>
</tr>
<tr>
<td>Catch composition</td>
<td>Baracuda, Nemeperus, Carangids, Anchovis, Prawn, Mackeral, Mulllet, Silver bellies, Puffer fish, Ribbon fish, Squids, Squilla.</td>
</tr>
<tr>
<td>Catch in cover net</td>
<td>About 0.5 kg [excluding the wt. of turtle]</td>
</tr>
<tr>
<td>Percentage escapement</td>
<td>1.43%</td>
</tr>
<tr>
<td>Percentage retention of target catch</td>
<td>98.57%</td>
</tr>
<tr>
<td>Efficiency of TED operation</td>
<td>As escapement of catch in cover net is negligible, the TED efficiency is almost 100% with escape of turtle.</td>
</tr>
</tbody>
</table>

**Second boat:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regn. No.</td>
<td>FKKD 1219 (hired by SIFT)</td>
</tr>
<tr>
<td>Depth of operation</td>
<td>About 30m; towards Hope Island</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
</tbody>
</table>
An Olive Ridley turtle successfully excluded in the cover net during the TED demonstration.

The TED demonstration in progress at Kakinada on the first day of the workshop.
Catch in cod-end on hauling: About 30 kgs [retained target catch]

**Catch composition:**
- Flat fish, Nemepterus, Carangids, Anchovis, Prawn, Mackeral, Mullet, Silver bellies, Puffer fish, Ribbon fish, Squids, Squilla.

Catch in cover net: About 300gm

**Catch composition:**
- Mackeral 5 nos.
- Sardines 8 nos.
- Upinoids 2 nos.
- Nemepterus 4 nos.

**Percentage escapement:** 1.00%

**Percentage retention of target catch:** 99.00%

**Efficiency of TED operation:** As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

**Third boat:**
- **Regn. No.:** FKKD 1021 (SIFT boat)
- **Depth of operation:** About 30m; towards Hope Island
- **Towing speed:** 2 knots
- **Towing period:** 1.5 hours
- **No. of hauls:** one haul
- **Catch in cod-end on hauling:** About 15 kgs [retained target catch]

**Catch composition:**
- Ribbon fish, Nemepterus, Carangids, Anchovis, Prawn, Mackeral, Mullet, Silver bellies, Puffer fish, Squids, Squilla.

Catch in cover net: About 200 gm

**Catch composition:**
- Ribbon fish 4 nos.
- Sardines 5 nos.
- Upinoids 3 nos.
- Nemepterus 2 nos.

**Percentage escapement:** 1.33%

**Percentage retention of target catch:** 98.67%

**Efficiency of TED operation:** As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

**Fourth boat:**
- **Regn. No.:** FKKD 1030 (SIFT boat)
- **Depth of operation:** About 30m; towards Hope Island
A fisherman fondling a sea turtle excluded in the cover net before setting it free into the sea during the TED demonstration.

Making observations before setting the turtle free into the sea.
Towing speed : 2 knots
Towing period : 1.5 hours
No. of hauls : one haul
Catch in cod-end on hauling : About 25 kgs [retained target catch]

Catch composition:
Nemipterus, Carangids, Anchovis, Prawn, Mackeral, Mullet, Silver bellie, Puffer fish, Squids, Squilla & Ribbon fish

Catch in cover net : About 400 gm

Catch composition
Mackeral 10 nos.
Sardines 7 nos.
Upinoids 5 nos.
Nemipterus 6 nos.
Ribbon fish 4 nos.

Percentage escapement : 1.60%
Percentage retention of target catch : 98.40%
Efficiency of TED operation : As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

At the end of the demonstration when all 4 boats reached the Fishing Harbour the fishermen were convinced that the loss of targeted catch was almost nil, with 99% retention of targeted catch. Further discussion and interaction with the fishermen was taken up in the third technical session in the theoretical workshop on 25-1-02.

Principal,
SIFT, Kakinada.
Report on the demonstrations of the Operation of the TED conducted by the Faculty of the SIFT during the month of February 2002, under the UNDP Sea Turtle Project for the benefit of the fishermen at Nizampatnam, Machilipatnam, Kakinada and Visakhapatnam.

The demonstrations of the Operation of the TED for the benefit of the owners and crew of the mechanized boats were conducted at Nizampatnam on 13-2-02, at Machilipatnam on 14-2-02, on 21-2-02 at Kakinada and on 25-2-02 at Visakhapatnam. At the outset the very purpose of the use of the TED, the functioning of the TED, its assembling in the trawl net, its fabrication and the compulsory use of the TED as prescribed in the AP MFR Act were explained to the fishermen by the Faculty. The place wise reports are submitted hereunder.

Nizampatnam:

The demonstration of the operation of the TED was conducted at the Fishing Harbour, Nizampatnam on 13-2-02 in coordination with the staff of the o/o the ADF (Coast) Nizampatnam. About 20 participants, comprising both boat owners and crew participated in the on-board demonstration in 2 sorrah type boats at sea at 7 a.m. on 13-2-02.

First boat:

Regn. No. : FNZM 343
Depth of operation : About 25m
Towing speed : 2 knots
Towing period : 1.5 hours
No. of hauls : one haul
Catch in cod-end on hauling : About 20 kgs [retained target catch]

Catch compositions:
Nemepterus, Carangids, Prawn, Indian Mackeral, Small shark, 2 tiger prawns, Puffer fish, Ribbon fish, Squids, Squilla, Clupids, Bombay duck, flatfish.

Catch in cover net : About 100 gms.

Catch compositions:
Clupids 6 nos.

Percentage escapement : 0.50
Percentage retention of target catch : 99.50%
Efficiency of TED operation : As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

Second boat:

Regn. No. : FNZM 12
Depth of operation : About 25m.
Towing speed : 2 knots
Towing period : 1.5 hours
No. of hauls : one haul
The TED demonstration at sea at Nizampatnam, Guntur District

The gathering of the crew and boat owners of fishing boats during the interaction session at Nizampatnam
<table>
<thead>
<tr>
<th>Catch in cod-end on hauling</th>
<th>About 15 kgs [retained target catch]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catch composition</strong></td>
<td>Flat fish, Nemepterus, Carangids, Anchovies, Prawn, Indian Mackeral, Silver bellies, Puffer fish, Ribbon fish, Squids, Squilla.</td>
</tr>
<tr>
<td>Catch in cover net</td>
<td>About 150 gm</td>
</tr>
<tr>
<td><strong>Catch composition</strong></td>
<td>Nemepterus 2 nos.</td>
</tr>
<tr>
<td></td>
<td>Clupids 2 nos.</td>
</tr>
<tr>
<td>Percentage escapemt</td>
<td>1%</td>
</tr>
<tr>
<td>Percentage retention of target catch</td>
<td>99.00%</td>
</tr>
<tr>
<td><strong>Efficiency of TED operation</strong></td>
<td>As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.</td>
</tr>
</tbody>
</table>

An awareness / interaction program was conducted after the demonstration to discuss about the opinions of the participants about the TED. Almost all the participants were positive and agreed to the use of the TED as they were convinced that its use will not result in loss of targeted catch. The need for conservation of sea turtles and their role in the marine environment was also emphasized by the Faculty in the meeting.

**Machilipatnam**

At Machilipatnam the demonstration of the actual operation of the TED at sea could not be conducted as scheduled on 14-2-02, as the boat owner’s association could not mobilize the fishermen engaged in mechanized fishing. The ADF, Machilipatnam was also helpless as the fishermen were not coming forward to participate in the demonstration. However an awareness program was conducted at the fishing harbour, which was attended by the fishermen leaders, boat crew and the local Fisheries departmental staff. The very purpose of the use of the TED, the functioning of the TED, its assembling in the trawl net, its fabrication and the compulsory use of the TED as prescribed in the AP MFR Act were explained to the gathering by the Faculty.

**Kakinada**

The demonstration at Kakinada could not be conducted on 19-2-02, as scheduled due to poor turnout of the fishermen; it was therefore conducted on 21-2-02. The demonstration was conducted on board 2 sorrah type boats of the SIFT, which was attended by about 20 participants comprising both boat owners and crew. The results of the demonstration are submitted hereunder.

**First boat:**

<table>
<thead>
<tr>
<th>Regn. No.</th>
<th>FKKD 1030 (SIFT boat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of operation</td>
<td>About 30m; towards Hope Island</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 horas</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
<tr>
<td>Catch in cod-end on hauling</td>
<td>About 18 kgs [retained target catch]</td>
</tr>
</tbody>
</table>
Most convincing result. The catch excluded is almost nil. (Shown in basket)

The SIFT Faculty with the fisherman leaders during the TED demonstration at Machilipatnam
Catch composition:
Ribbon fish, Nemepterus, Carangids, Pomfret (one big fish and 2 smaller ones) brown Prawn, one big sized tiger prawn, Indian Mackeral, Barracuda, Puffer fish, Squids & Squilla.

Catch in cover net: About 300gm

Catch composition:
Ribbon fish 3 nos.
Sardines 4 nos.
Upinoids 3 nos.
Nemepterus 3 nos.

Percentage escapement: 1.66%
Percentage retention of target catch: 98.34%
Efficiency of TED operation: As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

Second boat:
Regn. No.: FKKD 1021 (SIFT boat)
Depth of operation: About 30m; towards Hope Island
Towing speed: 2 knots
Towing period: 1.5 hours
No. of hauls: One haul
Catch in cod-end on hauling: About 10kgs [retained target catch]

Catch composition:
Indian mackerel, brown prawn, Anchovis, Prawn, Mullet, Silver bellies, Puffer fish, Squids, Squilla & Ribbon fish

Catch in cover net: About 100 gm

Catch composition:
Sardines 4 nos.
Upinoids 2 nos.
Nemepterus 1 no.
Ribbon fish 2 nos.

Percentage escapement: 1.00%
Percentage retention of target catch: 99.00%
Efficiency of TED operation: As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

An awareness/interaction program was later conducted at about 1.30 p.m. at the SIFT, after returning from the sea, which was attended by the Principal and the Faculty. The participants expressed
the view that the fuel consumption may be increased due to the use of the TED and weight of the TED needs to be further decreased. The participants were informed that the TED used has been introduced to the fishermen only after prolonged field trials and research by the CIFT, hence there is no need for apprehensions about its use.

**Visakhapatnam:**

The demonstration of the TED operation was conducted in 2 Sona boats at Visakhapatnam Fishing Harbour on 25-2-02, which was attended by about 20 fishermen comprising both the boat owners and the crew. The results are submitted hereunder.

**First boat:**

<table>
<thead>
<tr>
<th>Regn. No.</th>
<th>FVSP 506</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of operation</td>
<td>About 40m; towards Bhimili</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
<tr>
<td>Catch in cod-end on hauling</td>
<td>About 6 kgs [retained target catch]</td>
</tr>
</tbody>
</table>

**Catch composition:**

- Ribbon fish, Nemepterus, Carangids, one big sized tiger prawn, Indian Mackerel, Clupids, Gobids, Sardines, Scianids, Squids & Squilla.

| Catch in cover net | About 50gm |

**Catch composition:**

- Ribbon fish 1 no.
- Sardines 2 nos. Nemepterus 3 nos.

| Percentage escapement | 0.83% |
| Percentage retention of target catch | 99.17% |
| Efficiency of TED operation | As escapement of catch in cover net is negligible, the TED efficiency is almost 100%. |

**Second boat:**

<table>
<thead>
<tr>
<th>Regn. No.</th>
<th>FVSP 836</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of operation</td>
<td>About 40m; towards Bhimili</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
<tr>
<td>Catch in cod-end on hauling</td>
<td>About 7kg [retained target catch]</td>
</tr>
</tbody>
</table>

**Catch composition:**

Catch in cover net: About 150gm

**Catch composition:**
- Ribbon fish 3 no.
- Sardines 4 nos; Nemepterus 5 nos.

**Percentage escapement:** 2.14%

**Percentage retention of target catch:** 97.86%

**Efficiency of TED operation:** As escapement of catch in cover net is negligible, the TED efficiency is almost 100%.

At the end of the demonstration, an awareness cum interaction was conducted in the Fishing Harbour which was attended by about 70 fishermen comprising both boat owners and crew. The meeting was presided over by the RDDF, Visakhapatnam and attended by the other local officers of the department and the ADF, Srikakulam. Some of the queries raised by the participants are:

1. TEDs have to be supplied to all the 600 odd mechanized boats operating at Visakhapatnam.
2. Incidental mortality of sea turtles in gill nets is equally alarming, hence some steps have to be taken to mitigate this mortality rate.
3. In case an already dead turtle has entered the trawl net using TED, the boat owner should not be penalized, when intercepted by the concerned patrolling officials.
4. Weight of the TED should be decreased, as it may increase fuel consumption.
   - For item no.1 above the Regd. Dy. Director of Fisheries, Visakhapatnam agreed to take up this matter with the MPEDA, Visakhapatnam and the Joint Director of Fisheries (COAST) Kakinada.
   - Regarding mitigation of mortality of turtles in gill nets, decreasing the soaking time and ban on their use during peak nesting season, with regulation on mesh size are the measures proposed. The ADF, Srikakulam informed that there was a spurt in turtle mortality at Manchineelapeta (V), due to use of large meshed gill nets, locally called “teku vala”
   - Regarding item no. 3 above the JDF (COAST) Kakinada, may monitor such cases and take suitable action.
   - Regarding the weight of the TED, the participants were informed that the TED used has been introduced to the fishermen only after prolonged field trials and research by the CIFT, hence there is no need for apprehensions about its use, as there is some loss in weight when immersed in water, which will not increase the fuel consumption. This view was agreed to by the Scientist, CIFT, Visakhapatnam who attended the meeting and the demonstration.

Principal
SIFT, KAKINADA.
Report on the demonstrations of the Operation of the TED conducted by the Faculty of the SIFT during the month of March 2002, under the UNDP Sea Turtle Project for the benefit of the fishermen at Krishnapatnam (Nellore dist) and Vadarevu (Ongole Dist).

The demonstration of the Operation of the TED for the benefit of the owners and crew of the mechanized boats were conducted at Krishnapatnam in Nellore district on 14-3-02 and at Vadarevu in Ongole district on 15-3-02. At the outset the very purpose of the use of the TED, the functioning of the TED, its assembling in the trawl net, its fabrication and the compulsory use of the TED as prescribed in the AP MFR Act were explained to the fishermen by the Faculty. The place wise reports are submitted hereunder.

Krishnapatnam

The demonstration of the operation of the TED was conducted at the Fishing Harbour, Krishnapatnam on 14-3-02 in coordination with the ADF, Nellore and ADF(Coast) Nellore. This program formed a part of the Celebration of the Fishermens' week at Krishnapatnam, which was attended by considerable number of fisherfolk. About 15 participants, comprising both boat owners and crew participated in the onboard demonstration in one sorrah type boat at sea at 7 a.m. on 14-3-02. Two faculty members from the Fisheries College also attended the TED demonstration.

Result of the TED demonstration:

Regn. No. of the boat : F MRPM 020
Depth of operation : About 20m
Towing speed : 2 knots
Towing period : 1.5 hours
No. of hauls : one haul
Catch in cod-end on hauling : About 15 kgs [retained target catch]

Catch composition:

- Pomfret (medium sized) 15 nos.
- Prawn (small sized) Trichurus, Silver bellies (abot 5kg)
- Puffer fish, about 5kg of jelly fish.

Catch in cover net : About 500 gms.

Catch compositions:

- Silver bellies - 100gms, Ribbon fish - 100gm Jelly fish - 1kg

Percentage escapement : 3.33%
Percentage retention of target catch : 96.67%
Efficiency of TED operation: Though the escapement of catch observed in the cover net is negligible, it was slightly higher when compared to previous results; the reason may be due to the large quantity of jelly fish, which entered the net.

An awareness / interaction program was conducted after the demonstration to discuss about the opinions of the participants about the TED. Almost all the participants were positive and agreed to the use of the TED as they were convinced that its use will not result in loss of targeted catch. The
The participants of the TED demonstration at sea at Vadarevu, Ongole District.

Mr. Basha, TED Centre In-Charge is seen clearing the fishermen's doubts on the TED at Krishnapatnam, Nellore District.
need for conservation of sea turtles and their role in the marine environment was also emphasized by the Faculty in the meeting.

**Vadarevu**

The demonstration of the operation of the TED was conducted at Vadarevu in Ongole district, on 15-3-02 in coordination with the ADF, Ongole. As anchor fishing is practiced at Vadarevu, the participants proceeded on a BLC to a sorrah boat anchored about one km. from the shore. About 15 participants, comprising both boat owners and crew participated in the on-board demonstration in one sorrah type boat at sea at 9 a.m. on 15-3-02. The fishermen's society president and other local fisherman leaders also attended the TED demonstration.

Result of the TED demonstration:

<table>
<thead>
<tr>
<th>Name of the boat owner</th>
<th>Sri Oripalli Babilu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of operation</td>
<td>About 25m</td>
</tr>
<tr>
<td>Towing speed</td>
<td>2 knots</td>
</tr>
<tr>
<td>Towing period</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>No. of hauls</td>
<td>one haul</td>
</tr>
<tr>
<td>Catch in cod-end on hauling</td>
<td>About 10 kgs [retained target catch]</td>
</tr>
</tbody>
</table>

**Catch composition:**

- Ribbon fish, Carangids, Prawn (small sized) Silver Bellies, Small sized prawns, Saurida, Puffer fish and 3 tiger prawns.

<table>
<thead>
<tr>
<th>Catch in cover net</th>
<th>About 200 gms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catch composition:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silver bellies - 50 gms, Ribbon fish - 100gm Thrash - 50gms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage escapement</th>
<th>2.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage retention of target catch</td>
<td>98.00%</td>
</tr>
</tbody>
</table>

**Efficiency of TED operation:** The escapement of catch observed in the cover net in negligible.

An awareness / interaction program was conducted after the demonstration to discuss about the opinions of the participants about the TED. Almost all the participants were positive and agreed to the use of the TED as they were convinced that its use will not result in loss of targeted catch. The need for conservation of sea turtles and their role in the marine environment was also emphasized by the Faculty in the meeting.

As identification of fisherman beneficiaries for distribution of TEDs was not taken up, this may be initiated.

Principal
SIFT, KAKINADA.
WORK PROPOSED TO BE DONE

Demonstrations of the operation of the TED could not be done in the months of April and May 2002 due to the closed season for fishing operations in the state. However the TED operations were conducted in the first spell at all the fishing harbours and jetties in the state, but there is need to continue the demonstrations as past experience shows that complete use of the TED throughout the state may take some time, inspite of the fact that the MPEDA distributing TEDs in a phased manner free of cost. The SIFT has judiciously spent the funds of Rs. 2.00 lakhs released for the TED information center, against the original proposal for an amount of Rs. 3.00 lakhs and the SIFT will be in a position to conduct the TED demonstrations and awareness programs in sea turtle conservation for the next nesting season i.e. December 2002 - March 2003. There is every need to continue these activities for another two years also.

There has been a spurt in mortality of sea turtles along some of the coastal fisherman villages in Srikakulam and Visakhapatnam districts, which requires that the proactive role of the SIFT should be further boosted up to achieve meaningful results, if not the mission to save turtles in the state of A.P. may lose momentum.

There is further every need to promote the fabrication / manufacture of the TEDs amongst the Gear manufacturers and the enterprising fishermen, as per the CIFT specifications to inculcate the sense of self-sufficiency and lessen the dependency on the free supply of TEDs. Database of the Gear manufacturers and fishermen interested in this activity should be prepared and a workshop may be conducted at an important place of fishery importance in A.P. like Visakhapatnam to bring together all the stakeholders. The SIFT has already conducted one workshop on the TED operation successfully, SIFT would be willing to take up this responsibility as well for making the Sea Turtle Project a grand success.

PRINCIPAL
SIFT, KAKINADA.

*****

Director of Fisheries (Training)
State Institute of Fisheries Technology
KAKINADA. E.G. Dr.