

DMD/RM/26 (81)

ISBN 978-983-9114-50-8
SEAFDEC-MFRDMD/RM/26
MARCH 2010



**REPORT OF THE REGIONAL PLANNING WORKSHOP
ON RESEARCH AND MANAGEMENT
ON FORAGING HABITAT OF SEA TURTLES
IN THE SOUTHEAST ASIAN WATERS
(JAPANESE TRUST FUND V PROGRAM)**

**Melaka, Malaysia
10 - 11 March 2010**

**Marine Fishery Resources Development and Management Department
SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER**



**THE REGIONAL PROGRAM PLANNING WORKSHOP ON
"RESEARCH AND MANAGEMENT OF SEA TURTLES
IN FORAGING HABITAT IN THE SOUTHEAST ASIAN WATERS"**

(Japanese Trust Fund V)

10 - 11 March 2010, Melaka, Malaysia



First row from right: Dr.Sukarno, Mr.Abu Talib, Mr.Sato, Dr.Abe, The Hon. Dato' Ahamad Sabki, Ms.Hjh.Mahyam, Dr.Katoh, Mr.Kamaruddin, Mr.Syed Abdullah and Prof. Liew
Second row from right: Ms.Maznah, Ms.Wahidah, Ms. Wint Wint Tun, Ms.Lau Min Min, Dr.Juanita, Mr.Dung, Mr. Irwan, Dr.Worawit Mr.Mickmin and Mr. You Chanpraseth.
Third row from right: Mr.Hariel, Mr.Sheikh Al Idrus, Dr.Ngurah, Dr. Renato, Mr.Zabawi, Ms.Mazalina, Ms.Syuhada and Mr. Taha
Fourth row from right: Mr.Ahmad Adnan, Mr.Mohammad Faisal, Mr.Gangaram, Dr.Kongkiat and Mr.Douglas Hykle.



**REPORT OF THE REGIONAL PLANNING WORKSHOP
ON RESEARCH AND MANAGEMENT
ON FORAGING HABITAT OF SEA TURTLES
IN THE SOUTHEAST ASIAN WATERS
(JAPANESE TRUST FUND V PROGRAM)**

**Melaka, Malaysia
10-11 March 2010**

Prepared by:

**Syed Abdullah bin Syed Abdul kadir
Osamu Abe**

Marine Fishery Resources Development and Management Department
SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER

MARCH 2010

Workshop on Research and Management of Sea Turtles in Foraging Habitat in the Southeast Asian Waters: (Japanese Trust Fund IV Program) (2010: Melaka)

Report of the Regional Planning Workshop on Research and Management of Sea Turtles on Foraging Habitat in the Southeast Asian Waters: (Japanese Trust Fund V Program), 10-11 March 2010, Melaka, Malaysia

ISBN 978-983-9114-50-8

1. Sea turtles-Habitat-Research-Congresses. 2. Sea turtles – Research-Congresses.
 3. Sea turtles –Conservation-Congresses. 4. Habitat (Ecology) – Research-Congresses. I. Title
- 597.928

Copyright @ 2010 SEAFDEC-MFRDMD

All Right Reserve. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise, without the prior permission of the copyright owner.

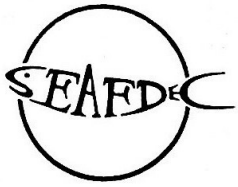
Bibliographic citation:

Syed Abdullah, S.A.K., Osamu Abe (Editors). 2010. Report of the Regional Planning Workshop on Research and Management of Sea Turtles on Foraging Habitat in the Southeast Asian Waters: (Japanese Trust Fund IV Program).
SEAFDEC-MFRDMD/RM/26 24pp

Marine Fishery Resources Development and Management Department
Southeast Asian Fisheries Development Center
Taman Perikanan Chendering, 21080 Kuala Terengganu, Malaysia
Tel: +609-6175940, 6177867 Fax: +609-6175136
Email: .mfrdmd@seafdec.org.my Website: <http://www.seafdec.org.my>

Contents

Introduction	1
Objectives	2
Opening of Meeting	2
Adoption of Agenda	2
Overview of the Program	3
Regional Information of Tagging and Satellite Telemetry Studies	3
Program Planning of the Japanese Trust Fund V	3
<u>RECOMMENDATIONS</u>	
REGIONAL INFORMATION OF TAGGING AND SATELLITE TELEMETRY STUDIES	4
• Report on satellite telemetry activity in Brunei Darussalam	4
• Report on satellite telemetry activities in Peninsular Malaysia	4
• Report on satellite telemetry activity in Myanmar	4
• Report on regional information on tagging exercises	4
• Report on regional information on satellite telemetry study	4
PROGRAM PLANNING OF THE JAPANESE TRUST FUND V	5
• Overall proposals for the 5 years implementation plan and 2010 implementation plan	5
• Tagging and satellite telemetry study	6
• Genetic study of sea turtle	6
• Training on scientific survey in selected foraging habitats	7
• Information collections, data analysis, and management plans	7
• Sea turtle interaction in marine capture fisheries	7
Proposal for the 5-Year Program on Japanese Trust Fund V (2010-2014)	8
List of Participants	13



**Report of the Regional Planning Workshop on Research
and Management on Foraging Habitat of Sea Turtles
in the Southeast Asian Waters
(Japanese Trust Fund V Program)
11-12 March 2010, Melaka, Malaysia**

I. INTRODUCTION

1. SEAFDEC/MFRDMD and TD in collaboration with the ASEAN Member Countries have conducted several programs over the years to enhance regional cooperation for taking initiatives in the conservation and management of sea turtles in the region. In 2010, SEAFDEC launched a new Japanese Trust Fund V (JTF V) Program entitled "Research and Management of Sea Turtles in Foraging Habitats in the Southeast Asian Waters", six years after the implementation of the Japanese Trust Fund IV (JTF IV) Program "Research for Stock Enhancement of Sea Turtles" (2004-2009).
2. One of the major outcomes from the JTF IV Program was that several of the migrating corridors and possible foraging habitats for regional sea turtles were revealed through the analysis of satellite telemetry studies. Most of these foraging areas and migrating corridors have been shared among the ASEAN/SEAFDEC member countries, some of which are located quite far from the original nesting countries.
3. However protection and management actions in the foraging habitats and migration corridors are still lacking and have created critical issues in the region. The lack of management and protection plans/activities of sea turtle foraging populations may also jeopardize the nesting populations of sea turtles in the region.
4. Thus, SEAFDEC/MFRDMD in collaboration with TD proposed plans to conduct a program on the "Research and Management on Foraging Habitats of Sea Turtles in the Southeast Asian Region" under the JTF V Program for the next five years (2010-2014). In this program, several project/activities had been proposed:
 - (i) To conduct/organize regional workshops/meetings
 - (ii) To conduct research on sea turtle foraging populations, which include scientific survey of the foraging habitats, genetics study, tagging study, satellite telemetry study, information collection of sea turtle poaching,
 - (iii) To study on sea turtle interaction in marine capture fisheries, which include information gathering, fishing trails and demonstration of the modified specific fishing gears, and to promote capacity building on the responsible fishing gears and practices, and
 - (iv) To formulate management plans for conservation of regional sea turtles.
5. As a result, SEAFDEC/MFRDMD had organized the Regional Program Planning Workshop on Research and Management on Foraging Habitat of Sea Turtles from 10-11 March 2010 in Melaka, Malaysia. The aim was to discuss on the five year plan under the JTF V program and to finalize the 2010 implementation plan. The workshop was attended by participants from Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, The Philippines, Thailand and Vietnam; and representatives from SEAFDEC-Secretariat, SEAFDEC-TD and SEAFDEC-MFRDMD. Four resource persons were invited from the Department of Fisheries Malaysia, University Malaysia Terengganu, Department of Marine Parks Malaysia and Seikai National Fisheries Research Institute of Japan. The Meeting was also attended by six observers from the Department of Fisheries Malaysia,

II. OBJECTIVES

6. The objectives of the workshop were:
 - (i) To discuss the five year project/activities under the Japanese Trust Fund V Program (JTF V) 2010-2014,
 - (ii) To discuss and finalize the 2010 implementation plan

III. OPENING OF THE MEETING

7. Ms. Mahyam Mohd Isa, the Chief of SEAFDEC-MFRDMD, welcomed all the distinguished guests, participants and observers to the workshop. She trusted that this Regional Program Planning Workshop which brought together 17 participants from eight countries as well as four Resource Persons and six observers would meet its objectives in discussing the five year plan under this JTF V program and to finalize the 2010 implementation plan. She extended her appreciation and also congratulated the Secretariat Committee for making this Regional Program Planning Workshop a reality. She expressed hope that everyone would have a very fruitful discussion. Her welcome speech appears as Annex II.
8. In his Opening Speech, the Deputy Director General of Fisheries Malaysia welcomed all the participants and guests to Malaysia. He mentioned that based on information obtained from satellite telemetry and tagging studies conducted by scientists in the region, it has been indicated that several foraging habitats of sea turtles are actually located in the Southeast Asian waters. After twelve years of implementation on these conservation programs, this research program had successfully identified more than thirty (30) major nesting locations in the Southeast Asian countries. He congratulated SEAFDEC on its tireless contribution towards conserving the sea turtles of Southeast Asia. He stressed that the greatest threat to these animals are Man and his insatiable greed for economic exploitation. He also emphasized confirmation of the areas which form the sea turtle's foraging habitats, and the importance in designing suitable conservation and management measures towards protecting these habitats to ensure these sea turtles can continue to survive and hopefully will increase in number in future. The success of the study on Research and Management of Sea Turtles in their Foraging Habitats in the Southeast Asian Waters would depend very much on the strong cooperation and support among the member countries in the region. He believed this workshop would meet its objectives for finalizing the research activities under the Japanese Trust Fund V Program (JTF V) 2010-2014. With the presence of sea turtle experts in the region, this 2-day workshop would be a successful and enlightening one in that we would now be able to plan good research activities that would contribute towards achieving outstanding results for implementing the management plan in the conservation of these foraging habitats of sea turtles. He expressed his appreciation to the Government of Japan, SEAFDEC and Secretariat Committee for making this workshop a success. He hoped the participants would have a fruitful discussion. The Deputy Director General of Fisheries Malaysia then declared the Workshop open. His Opening Speech appears in Annex III.

IV. ADOPTION OF AGENDA

9. This session was chaired by Chief of SEAFDEC-MFRDMD Ms. Mahyam Mohd Isa. The Agenda as it appears in Annex IV was adopted.

V. OVERVIEW OF THE PROGRAM

10. Dr. Osamu Abe, Deputy Chief of MFRDMD presented the background and expected outcome of the Workshop (Annex V). He explained the concept of expected final goals and "Steps" towards achieving the final goals throughout the Japanese Trust Fund Programs, in relation to sea turtle conservation since 1998. This JTF V program corresponds to "Step 3", and would focus on research and conservation of sea turtles in foraging habitats to follow-up "Step 2" which focused on the nesting populations. He also presented the major achievements of "Step 2", namely the last related project on "Research for Stock Enhancement of Sea Turtles (2004-2009, JTF IV)". He requested the Workshop:

- To discuss on the overall project proposal under JTF V for 5-years from 2010 to 2014
- To finalize the 2010 implementation plan
- To discuss the 2011 plan.

VI. REGIONAL INFORMATION OF TAGGING AND SATELLITE TELEMTRY STUDIES

11. The Workshop expressed its appreciation to all member countries as well as the Regional Technical Coordinator for their good job in carrying out the tagging and satellite telemetry study in the region that was conducted from 2004 until 2010. The study on satellite telemetry of sea turtles which was conducted in Brunei Darussalam, Malaysia, Myanmar and additional regional information on tagging and satellite telemetry studies was presented by particular Responsible officers and Regional Coordinator of MFRDMD (Annex VI to X).

VII. PROGRAM PLANNING OF THE JAPANESE TRUST FUND V

12. Dr. Osamu Abe, Deputy Chief of MFRDMD presented the program planning of the Japanese Trust Fund which would begin in 2010 until 2014. He mentioned that this five year program consists three main activities (i) regional workshop/meeting (ii) research on sea turtle foraging population and (iii) :Sea Turtle Interaction in Marine Capture Fisheries which is led by the SEAFDEC- Training Department. The objectives of the study are; (i) to collect ecological parameters of several pilot foraging habitats of sea turtles to study the key factors to manage these areas for sea turtle conservation (ii) to collect, compile, and review information of sea turtles migration corridors, nesting/foraging habitats, and their population structures in the region by genetic, satellite tracking, and conventional tagging studies for conservation and enhancement of the sea turtle populations in the ASEAN region, (iii) to review fishing activities in the region which are possibly interacting with sea turtle populations in their foraging/nesting habitats and migration routes in space and time, (iv) to promote responsible fishing gears and practices by conducting commercial demonstrations and experimental trials of modified specific fishing gears to protect sea turtle populations in the region, (v) to formulate and propose management plans on fishing activities and other activities to conserve and enhance sea turtle populations in the region based on the scientific information. He suggested that the training for scientific survey on foraging habitats will be conducted between May to July 2009 at Brunei Bay. The detail of the proposal appears in Annex XI.

RECOMMENDATIONS

A REGIONAL INFORMATION OF TAGGING AND SATELLITE TELEMETRY STUDIES

A.1. Report on satellite telemetry activity in Brunei Darussalam

1. The Responsible Officer from Brunei Darussalam presented the results of the satellite telemetry study on Olive Ridley turtles which was conducted on 4th July 2009. It was informed that the Olive Ridley turtle which was attached with a Platform Transmitter Terminal (PTT) was released at Muara nesting beach on 4th July 2009. Throughout 236 days when the signal was detected, the turtle was found to be in Brunei waters.
2. This phenomenon was possibly due to the Olive Ridley turtle not being an adult female nester, but was caught in the wild in Brunei Waters where it could be foraging. The workshop requested the Brunei Darussalam participant to analyze carefully the location class of the turtle's position which was obtained from ARGOS satellite.

A.2. Report on satellite telemetry activities in Peninsular Malaysia

3. The Regional Technical Coordinator as well as the Responsible Officer from Peninsular Malaysia reported on satellite telemetry studies on Green turtles which were conducted in Penang and Tioman Islands in the year 2008 and 2009.
4. The workshop was informed that the Green turtle from Penang was released to the sea on 31 July 2009 and migrated southward to Cape Rachardo in Negeri Sembilan waters within 16 days. This turtle inhabited Cape Rachardo waters for three months until the last signal was detected on 6 December 2009.
5. The workshop was informed that the Green turtle from Tioman Island which was attached with a PTT was released to the sea on 15 May 2008. It reached Riau Archipelago waters on 18 August 2008. This turtle continued its migration and reached Kukup Island/Tanjung Piai waters off Johor, Malaysia on 2 December 2008. This turtle inhabited Kukup Island/Tanjung Piai waters until the last satellite signal was detected on 13 February 2009.

A.3. Report on satellite telemetry activity in Myanmar

6. The workshop was informed that the Olive Ridley turtle which was attached with a PTT in Gayetgyi Island, Myanmar was released to the sea on 17 December 2009. The last satellite signal was detected on 26 December 2009 when the turtle was still in Gayetgyi Island.

A.4. Report on regional information on tagging exercises

7. The Regional Technical Coordinator from SEAFDEC-MFRDMD reported on the regional information on tagging of sea turtles. The Coordinator informed that from 1998 to 2008, a total of 12,200 inconel tags were distributed to SEAFDEC participating member countries for the tagging of sea turtles.
8. The workshop requested SEAFDEC-MFRDMD to revise the number of turtles tagged which had been recorded in the region. The number of turtles tagged which was reported by the Regional Technical Coordinator from SEAFDEC-MFRDMD was mainly on adult female sea turtles. In some countries, tagging activities also involved juvenile sea turtles.

A.5. Report on regional information on satellite telemetry study

9. The Regional Technical Coordinator from SEAFDEC-MFRDMD also reported on the regional information on satellite telemetry studies of sea turtles. The Coordinator informed that

this information is based on reports provided by SEAFDEC participating member countries in several workshops organized by SEAFDEC-MFRDMD under the Japanese Trust Fund IV program from 2004-2009.

10. The workshop requested member countries to provide more information on satellite telemetry studies that was conducted under national programs.
11. The workshop was informed there were possibly at least six potential foraging habitats in the region. This was mainly based on satellite signal detections obtained from the sea turtles which inhabited those areas for more than one month.
12. In order to identify the major foraging habitats in the region, the workshop suggested the Regional Technical Coordinator determine the percentage of sea turtles migrating to a particular area, fully utilizing existing satellite telemetry data and nesting populations size.
13. The workshop was informed that the detection of foraging habitats not only depended on satellite telemetry studies but was also identified from other sources, such as information from fishermen, surveys by local researchers, tag returns, and distribution and density of seagrass beds in the region.
14. Considering the importance of gathering information from tagging and satellite telemetry studies which were conducted in the region, the workshop requested SEAFDEC-MFRDMD to organize a special regional workshop for analyzing this data/information.
15. The observer from IOSEA informed the workshop of the existence of an animal tracking meta-database from 1993 to 2010 (http://www.ioseaturtles.org/satellite_search.php). This information can be utilized as a reference for this program.

B. PROGRAM PLANNING OF THE JAPANESE TRUST FUND V

B.1. Overall proposals for the 5 years implementation plan and 2010 implementation plan

Dr. Osamu Abe, Deputy Chief of MFRDMD, presented the overall proposals for the 5 year plan and 2010/2011 implementation plans (Annex XI). The original 5-year plan had been revised based on the recommendations from the Member Countries during the Regional Core Expert Group Workshop (20-21 October 2009, Kuala Terengganu). The revised points are as follows:

- a. Two additional Workshops were proposed. One was "The Regional Technical Workshop on Tagging Study of Sea Turtles in the ASEAN region" to develop standard methods on analyzing tag loss, tagging data, and satellite telemetry data, and to evaluate sea turtle populations using currently existing data.
- b. Another Workshop proposed was "The Regional Workshop on Sea Turtle Research and Conservation in Indonesian Waters" to compile information from research and conservation activities for sea turtles conducted by various organizations in Indonesia. However, to organize this workshop, MFRDMD would require another source of funding in addition to the expected JTF5 budget.
- c. One of the project titles in "Activity 2: Research on Sea Turtle Foraging Population" had been changed from "Scientific survey on selected foraging habitats" to "Training for Scientific Survey on Foraging Habitats". To utilize the limited budget effectively, he suggested training to be conducted for officers from the Member Countries to implement scientific surveys on foraging habitats in each member country.

He requested the Workshop for comments and additional suggestions to the plans. He also requested the Workshop to have a clear understanding of the outcomes of the 5-year program. The Workshop agreed to formulate the action plan for managing foraging habitats of sea turtles

as an outcome of the entire program. In this connection, the Workshop agreed to change the title of Activity 4, from “Management Plans for Conservation of Regional Sea Turtles” to “Action Plan for Managing Foraging Habitats of Sea Turtles”.

1. The Workshop in general agreed to the overall program planning of the Japanese Trust Fund V. Considering the importance of information gathered from the research activities which were conducted under the Japanese Trust Fund programs for promoting the conservation and management of sea turtles in the region, the Workshop suggested the delivery/dissemination of this information in appropriate regional fora for further action by policy makers in the region.
2. The workshop took note on the issue of climate change/global warming which could affect the hatching success and sex ratio of turtle hatchlings. The workshop was also informed that some participating member countries such as Malaysia, The Philippines and Thailand had conducted studies on the effect of temperature on turtle nests. These countries are requested to present their results in the regional workshop/meeting which would be conducted under the Japanese Trust Fund V Program in future. The results/information obtained from this study would improve the hatchery management of sea turtles in the region.

B.2 Tagging and satellite telemetry study

3. The workshop suggested several possible foraging habitats, such as Brunei Bay/Lawas, Tun Sakaran Marine Park/Sipadan Island, Riau Archipelago and Derawan Complex for conducting the training on tagging and satellite telemetry studies in sea turtle foraging habitats. SEAFDEC participating member countries could also suggest other possible training sites to be considered for conducting this study.
4. The workshop also agreed to use inconel tags for tagging exercises in the foraging habitats for the satellite telemetry study and PIT Tags had less priority due to budget limitations.
5. The workshop also suggested on collection of information on estimated number of sea turtles occurrences in the foraging habitats.

B.3. Genetic study of sea turtle

6. The workshop was informed that the objective of this study was to determine the genetic population structure of sea turtles in foraging habitats. For this purpose, information on the genetic population structure of sea turtles in origin nesting beaches was required. Besides results obtained from JTF IV program, member countries were requested to provide additional information from national programs.
7. The member countries were encouraged to collect tissue samples using every opportunity from all species.
8. The Workshop recommended the collection of at least 100 tissue samples for each species when possible. The workshop also suggested conducting population genetic study using both mitochondrial DNA (mtDNA) and microsatellite techniques.
9. The Workshop suggested sharing of sequenced data among ASEAN-SEAFDEC member countries for future sea turtles population genetic studies.
10. SEAFDEC-MFRDMD presented a draft of the questionnaire that would be used to collect and compile information on the potentiality of conducting genetic studies for sea turtle population analysis in the Member Countries. This was based on the recommendations from the Core Expert Group Workshop (20-21 October 2009). The questionnaire would be distributed to the Member Countries after the Workshop through e-mail.

B.4. Training on scientific survey in selected foraging habitats.

11. The Workshop suggested the priority for selection of the training sites would be easy access and logistics, shallow areas, security, visibility of water, existence of certain amount of seagrass and turtles. The workshop also suggested utilizing existing protocols to select study sites for foraging habitats for the other marine species.
12. In this connection, the workshop agreed to select Brunei Bay/Lawas to conduct training on scientific survey of foraging habitats of sea turtles in the year 2010. However, initial survey would be carried out by SEAFDEC-MFRDMD technical officer before conducting the actual training. By this, SEAFDEC-MFRDMD would draft the implementation plan for 2010.
13. The Workshop agreed the training to be conducted within the allocated budget included the following data and information on: water quality parameters (temperature, salinity, turbidity), water currents, bottom fauna and flora especially seagrass (species, density, acreage, etc), bottom substrate, bathymetry, anthropogenic impact, fishing activities, interviews including social aspect, habitat mapping, estimation of sea turtle population. SEAFDEC-MFRDMD would draft the most effective implementation plan for 2010 within the allocated budget, taking into consideration of all the suggestions.
14. The Workshop also suggested that SEAFDEC-MFRDMD would draft and circulate the standard operating procedures for the scientific survey on foraging habitats of sea turtle as one of outcomes of the whole program.

B.5. Information collections, data analysis, and management plans

15. The Workshop agreed that one of the expected outcomes of this program is to formulate the action plan for managing foraging habitats of sea turtles. SEAFDEC-MFRDMD was selected to scrutinize the overall plans and to establish the priority of the proposed activities to achieve this outcome within the limited budget.
16. To formulate the action plan for managing foraging habitats of sea turtles, the Workshop also suggested SEAFDEC-MFRDMD to scrutinize the ASEAN action plan on protection of sea turtles and related National Plan of Action of the Member Countries for the conservation of sea turtles. In 1997 the ASEAN countries also adopted the Memorandum of Understanding (MoU) on ASEAN Sea Turtle Conservation and Protection. In addition the IOSEA MoU also had an existing comprehensive Regional Action Plan.

B.6. Sea turtle interaction in marine capture fisheries.

17. Major achievements over the past years and overall objectives of the activity on sea turtle interaction with marine capture fisheries were outlined by Dr. Worawit Wanchana, technical staff of SEAFDEC Training Department (TD). Regarding the proposal for the 5 year and 2010 implementation plan, the Workshop was requested to provide comments/suggestions on the issue/activities for further improvement of the activity implementation within the constraint of budget availability.
18. The Workshop requested SEAFDEC-TD to conduct research/trials to confirm whether the application on the use of C-hooks was appropriate for coastal long-line in shallow water (e.g. stingray long-line fishing gear); use of C-hook in tuna long-line using live bait in the case of Indonesia; modification of stingray gill nets to reduce sea turtle by catch. In response, the Workshop was informed that more detailed information collection on the above mentioned issues and/or actual fishing trials would be conducted in order to obtain scientific-based outcomes for further appropriate improvement and modification of such fishing gear and practices.

Proposal for the 5-Year Program on Japanese Trust Fund V (2010-2014)

Research and Management on Foraging Habitat of Sea Turtles in the Southeast Asian Waters

Objectives

- To collect ecological parameters of several pilot foraging habitats of sea turtles to study the key factors in efficient management of these areas for sea turtle conservation,
- To collect, compile, and review information of sea turtles' migration corridors, nesting/foraging habitats, and their population structures in the region by genetic, satellite tracking, and conventional tagging studies for conservation and enhancement of the sea turtle populations in the ASEAN region,
- To review fishing activities in the region which are possibly interacting and interfering with sea turtle populations in their foraging/nesting habitats and migration routes in space and time,
- To promote responsible fishing gears and practices by conducting commercial demonstrations and experimental trials of modified specific fishing gears to protect sea turtle populations in the region,
- To formulate and propose management plans on fishing activities and other activities to conserve and enhance sea turtle populations in the region based on the scientific information.

Activity 1: Regional Workshop/Meeting

1. Regional Planning Workshop (1Q-2010)
 - i. To discuss on the 5-year program,
 - ii. To finalize the implementation plan for 2010
2. The 1st Regional Progress Meeting (2Q-2011)
 - i. To report the progress of activities and to finalize the implementation plans for 2011 and 2012 under JTF5.
3. The Regional Technical Workshop on Tagging Study of Sea Turtles in the ASEAN region (2Q-2011)
 - i. To develop standard methods on analyzing tag loss and tagging information.
 - ii. To develop standard methods on analyzing satellite telemetry and tagging data.
 - iii. To evaluate sea turtle populations using currently existing data.
4. The 2nd Regional Progress Meeting (4Q-2012)
 - i. To report the progress of activities and to finalize the implementation plan for 2013 under JTF5.
 - ii. To start discussions on the management plan of fishing activities and other activities that threaten the sea turtles in the region.
5. (The Regional Workshop on Sea Turtle Research and Conservation in Indonesian Waters (4Q-2012?))
 - Require another Source of Funding -
 - i. To invite the local governments/NGOs to present their sea turtle conservation activities in Indonesia.

6. Regional Technical Workshop (4Q-2013)

- i. To report the progress of activities and to finalize the implementation plan for 2014 under JTF5,
- ii. To provide in-depth discussion on the management plan of fishing activities and other activities that threaten the sea turtles in the region.

7. Regional Technical Consultation Meeting (4Q-2014)

- i. To present the entire output of the program.
- ii. To finalize the proposal of the management plan of fishing activities and other activities that threaten the sea turtles in the region.

Activity 2: Research on Sea Turtle Foraging Population

1. Training for Scientific Survey on Foraging Habitats

- i. To be carried out in selected pilot foraging habitats based on suggestions during the Regional Planning Workshop,
- ii. Technical Officers from selected SEAFDEC member countries will be invited for the trainings of the future ecological survey study in the relevant countries.
- iii. To conduct training for Technical Officers from Member Countries on the following activities;
 - a. To collect information on ecological parameters of foraging habitats for a better understanding of how these ecosystems attract sea turtles in their life cycles,
 - b. To survey Fauna and Flora at the sea bottom of the selected foraging ground,
 - c. To monitor water quality, such as salinity, temperature, turbidity, and chlorophyll content,
 - d. To collect sea turtles inhabiting in a pilot foraging habitats by appropriate methods to conduct genetic, tagging, and satellite telemetry studies.

2. Population genetics study of sea turtles

3. Tagging study

4. Satellite telemetry study

- i. To utilize the (is there a missing word here?)?? to collect sea turtles during the training for scientific surveys on foraging habitat trips,
- ii. To collect tissue samples from these sea turtles and to analyze their mtDNA sequence for the genetic study of sea turtle subpopulation structures in the region,
- iii. To tag these sea turtles with inconel tags and to release them soon after the tissue sampling and measurements of their biological parameters are conducted,
- iv. To conduct satellite telemetry studies with some of these sea turtles.

5. Information collection of sea turtle poaching

- i. To collect and to compile information on illegal direct captures of sea turtles in the region to know the accurate status of sea turtle poaching in the region for further evaluation to address its impact.

The Program Planning Workshop is requested for discussion on the following issues;

- i. To suggest the study sites for the pilot studies of sea turtle foraging habitats.
- ii. To discuss on the guest countries for each of the pilot studies of the foraging habitats for Training,

	Relevant Countries	Guest Countries for Training
Brunei Bay	Brunei DS, Malaysia	Thailand
Sulu Sea	The Philippines, Malaysia	Vietnam
Derawan Complex	Indonesia	Cambodia
Riau Archipelago	Malaysia, Indonesia	Myanmar

- iii. To suggest the ecological parameters which should be collected during the pilot study of the foraging habitats.

Parameters	Study Point	How?
Temperature	Mesh Matrix, Vertical	
Salinity	Mesh Matrix, Vertical	
Turbidity	Mesh Matrix, Vertical	
Chlorophyll content M	Mesh Matrix, Vertical	
Bottom Fauna and Flora	Mesh Matrix	Diver
Substrate	Mesh Matrix	Diver

- iv. To suggest the appropriate methods to capture sea turtles in each of the foraging habitats.

Methods	Note
Large Mesh-Size Drift Net	Launch the gear and observe the gear at least once an hour not to draw the captured turtles No special training may be necessary Low cost Permission from relevant authorities may be required for the use of this fishing gear
Direct Capture (Diving from Boat)	Special training is required

- v. To discuss on the possibility to conduct mtDNA analysis in the member countries.
vi. Other issues to be discussed.

Activity 3: Sea Turtle Interaction in Marine Capture Fisheries (Lead by Training Department)

1. Information gathering on sea turtle interaction in marine capture fisheries
 - i. To gather information of all concerns on sea turtle interaction in marine capture fisheries such as sea turtle by-catch from specific fishing gears in the Southeast Asian Region based on the existing data.
2. Fishing trails and demonstration of the modified specific fishing gears
 - i. To develop and to modify specific fishing gears and devices which were directly or indirectly harmful to sea turtles.
 - ii. To conduct fishing trails and demonstration on research vessels, and in cooperation with commercial fishing vessels to improve and reduce sea turtles by-catch.

3. Promotion and capacity building on the use of responsible fishing gears and practices to reduce sea turtles bycatch
 - i. To conduct Onsite Training Workshop for promotion and capacity building to fishers and government officers on the use of responsible fishing gears and practices,
 - ii. To build awareness on the use of non-responsible fishing gears and their impact on sea turtle mortality by users.

Activity 4: Management Plans for Conservation of Regional Sea Turtles

1. Formulation of management plans for conservation of regional sea turtles
 - i. To formulate the management plans on fishing activities and other activities that threaten the regional sea turtles based on the information of sea turtle ecology and fisheries collected during the current and the former programs,
 - i. To initiate drafting of the 1st Regional Technical Workshop in 2012 and to finalize it in the Regional Technical Consultation Meeting in 2014

The Program Planning Workshop is requested for discussion on the following issues;

1. To discuss and have a clear vision on the outcome of this activity.

Activities for 2010

1. Meeting/Workshop
 1. The Regional Planning Workshop
 - (i) To discuss on the overall project proposal for five years from 2010 to 2014,
 - (ii) To select pilot foraging habitats for the ecological survey,
 - (iii) To finalize the research implementation plans for 2010.
2. Research on Sea Turtle Foraging Populations
 1. Training for Scientific Survey on Foraging Habitats
 - (i) Fauna and Flora on the sea bottom of the selected foraging ground will be surveyed by divers along transect lines from coast to off shore.
 - (ii) Water quality, such as salinity, temperature, turbidity, and chlorophyll content will be monitored.
 - (iii) Technical Officers from selected SEAFDEC member countries will be invited for Training of the ecological survey.
 - (iv) Suggested Pilot Study Sites, Season and Period for 2010; from May to September, for one week, at Brunei Bay.
 2. Genetic study
 - (i) Tissue samples from these sea turtles will be collected, preserved appropriately, and its mtDNA sequence analyzed for the genetic study of sea turtle subpopulation structures in the region.
 3. Tagging study
 - (i) Those sea turtles will be tagged with inconel tags and released soon after the tissue sampling for the genetic study and measurements of their biological parameters,
 - (ii) Inconel tags and tag applicators will be purchased and distributed to MCs. Therefore, MCs are requested to inform the required amount of materials needed for the assessment by SEAFDEC.
 4. Satellite telemetry study
 - (i) Satellite telemetry study will be conducted for one turtle captured during the above pilot study.

3. Interaction between sea turtles and fishing (TD)
 1. Information collection on the sea turtles interaction with fishing Information dissemination
 - (i) Continuation on the study for modification of responsible fishing gears to reduce the sea turtles by-catch,
 - (ii) Promotion and awareness raising on the use of c-hooks in hook-and-line fishing in selected countries.

Activities for 2011

1. Meeting/Workshop
 1. The 1st Regional Progress Meeting (2Q-2011)
 - (i) (i) To report the progress of activities and to finalize implementation plans for 2011 and 2012 under JTF5.
 2. *The Regional Technical Workshop on Tagging Study of Sea Turtles in the ASEAN region (2Q-2011)
 - (i) To develop standard methods on analyzing tag loss and tagging information.
 - (ii) To develop standard methods on analyzing satellite telemetry and tagging data.
 1. To evaluate sea turtle populations using currently existing data.
2. Research on Sea Turtle Foraging Populations
 1. Training for Scientific Survey on Foraging Habitats
 - (i) Fauna and Flora at the sea bottom of the selected foraging grounds will be surveyed by divers along transect lines from coast to off shore.
 - (ii) Water quality, such as salinity, temperature, turbidity, and chlorophyll content will be monitored.
 - (iii) Technical Officers from selected SEAFDEC member countries will be invited for Training of the ecological survey.
 - (iv) Suggested Pilot Study Sites, Season and Period for 2010; from May to September, for one week, at Brunei Bay/Lawas Waters.
 2. Genetic study
 - (i) Tissue samples from these sea turtles will be collected, preserved appropriately, and its mtDNA sequence analyzed for genetic study of sea turtle subpopulation structures in the region,
 3. Tagging study
 - (i) Those sea turtles will be tagged with inconel tags and released soon after the tissue sampling for genetic study and measurements of their biological parameters.
 4. Satellite telemetry study
 - (i) Satellite telemetry study will be conducted for one turtle captured during the above pilot study.
3. Interaction between sea turtles and fishing (TD)
 1. Information collection on the sea turtles interaction with fishing Information dissemination
 - (i) Continuation on the study for modification of responsible fishing gears to reduce the sea turtles by-catch,
 - (ii) Promotion and awareness raising on the use of c-hooks in hook-and-line fishing in selected countries.

LIST OF PARTICIPANTS

BRUNEI	
1. Mr. Sheikh Haji Al Idrus bin Sheikh Hj. Nikman Fisheries Officer	Fisheries Department Ministry of Industry and Primary Resources Jalan Menteri Besar, Berakas, BB3910 Brunei Darussalam. ☎: 673-2771061/2770066 Fax: 673-277-065 E-mail: idrus.nikman@fisheries.gov.my
CAMBODIA	
2. Mr. You Chanpraseth Fishery Officer	Fisheries Administration #186, Norodom Blvd., P.O. Box 582 Phnom Penh, Cambodia. ☎: 855-92626210 Fax: 855-23-219-256 / 215-470 E-mail: chanpraseth@yahoo.com
INDONESIA	
3. Prof. Dr. Ngurah Nyoman Wiadnyana Researcher/Head of Monitoring and Evaluation Division	Research Centre for Capture Fisheries (RCCF), Agency For Marine and Fisheries Research Ministry of Marine Affairs and Fisheries Jln. Pasir Putih 1, Ancol Timur Jakarta 14430, Indonesia. ☎: 62-21-6471-1940 ext. 103 Fax: 62-21-640-2640 E-mail: ngurah_prpt@indo.net.id
MALAYSIA	
4. Ms. Maznah Othman Fisheries Officer	Department of Fisheries Malaysia Wisma Tani, Level 1, Block 4G2, Precint 4 Federal Government Administration Centre 62628 Putrajaya, Malaysia. ☎: 603-8870-4405/ 019-2767389 Fax: 603-8889-1233 E-mail: maznahoth@dof.gov.my
5. Mr. Taha Wahab Biologist	Protected Area & Biodiversity Conservation Unit Sarawak Forestry Corporation Level 11, Office Tower, Hock Lee Centre Jalan Datuk Abang Abdul Rahim 93450 Kuching, Sarawak, Malaysia. ☎: +6082-302-315 (DL) / 348-001 (GL) Fax: +6082-341-550 E-mail:
6. Mr. Irwan bin Isnain Marine Research Officer	Sabah Park Block K, Lot 1-3, Taman-Taman Sabah Kota Kinabalu, P.O. Box 10626 88806 Kota Kinabalu, Sabah, Malaysia. ☎: 6088-229-572 / 211-881 Fax: 6088-211-001 / 201-169 E-mail: Irwan.Isnain@sabah.gov.my

MYANMAR	
7. Ms. Wint Wint Tun Fisheries Officer	Department of Fisheries Ministry of Livestock and Fisheries Sinmin Road, Ahlone Township, Yangon, Myanmar. ☎: 95-1-223036, 220597 Fax: 95-1-228-258 E-mail: mttun@myanmar.com.mm, tunwint@gmail.com
PHILIPPINES	
8. Dr. Renato D. Cruz Project Leader	Pawikan Conservation Project, Protected Areas and Wildlife Bureau, Department of Environment and Natural Resources, Ninoy Aquino Parks and Wildlife Center, Diliman, Quezon City, The Philippines. ☎: 632-925-8946 Fax: 632-924-0109 E-mail: pawbpcp@yahoo.com renatodalmaciocruz@yahoo.com.ph
9. Dr. Kongkiat Kittiwattanawong Senior Marine Biologist	Phuket Marine Biological Center Department of Marine and Coastal Resource Ministry of Natural Resources and Environment 51 Sakdides Rd. Phuket 83000, Thailand ☎: 66-76-391-128 Fax :66-76-391-127 E-mail: kkongkiat@gmail.com
10. Mr. Mickmin Charuchinda Senior Marine Biologist	Marine and Coastal Resource Department 309 Moo 1 Pranampasare, Klang District, Rayong Province 21170, Thailand ☎: +66-38-661693 Fax : +66-38-661694 E-mail: mickmin_charuchinda@yahoo.com
VIETNAM	
11. Mr. Phan Hong Dung Marine Senior Scientist	Research Institute for Marine Fisheries (RIMF) 170 Lelai Street, Ngo Quyen District, Haiphong, Vietnam. ☎: 84-31-35594923767277 Fax: 84-31-383-6812 E-mail: dung1960@yahoo.com phdung@rimf.org.vn
RESOURCES PERSON	
12. Dr. Sukarno bin Wagiman Director	Human Resource Development Division, Department of Fisheries Malaysia Wisma Tani, Level 1, Block 4G2, Precint 4 Federal Government Administration Centre 62628 Putrajaya, Malaysia. ☎: 603-8870-4601 Fax: 603-8889-1233 E-mail: sukarno@dof.gov.my

13. Assoc. Prof Liew Hock Chark	Universiti Malaysia Terengganu 21030 Kuala Terengganu, Malaysia ☎: 609-668-3251 / 016-2069098 Fax 609-669-2166 E-mail: davliew@gmail.com
14. Mr. Kamarruddin bin Ibrahim	Jabatan Taman Laut Malaysia Aras II, Wisma Sumber Asli, No. 25, Persiaran Perdana, Presint 4, Pusat Pentadbiran Kerajaan Persekutuan, 62574 Putrajaya, Malaysia. ☎: 603-88861365 Fax : 603-88880481 E-mail:kamarruddin@NRE.GOV.MY :
15. Dr. Masaya Katoh	Seikai National Fisheries Research Institute, Fisheries Research Agency, Taira-machi 1551-8, Nagasaki-shi, Nagasaki 851- 2213, JAPAN ☎: +81-95-860-1600 Fax: +81-95-850-7767 E-mail: mkatoh@fra.affrc.go.jp
SEAFDEC DEPARTMENTS	
SEAFDEC- Secretariat	
16. Mr. Akito Sato	SEAFDEC Secretariat, P.O.Box 1046, Kasetsart Post Office Bangkok 10903, Thailand ☎: +66 2 940 6326 Fax : +66 2940 6336
SEAFDEC-TD	
17. Dr. Worawit Wanchana Senior Researcher	Capture Fishery Technology Training Department, Southeast Asian Fisheries Development Center P.O. BOx 97, Phrasamutchedi, Samutprakan 10290, Thailand ☎: 66-2425-6140 Fax: 62-2425-6110 e-mail: worawit.wanchana@gmail.com
SEAFDEC-MFRDMD	
18. Ms. Hjh. Mahyam bt. Mohd Isa Chief SEAFDEC-MFRDMD	Fisheries Garden, Chendering 21080 Kuala Terengganu, Malaysia. ☎: 609-617-5940 Fax: 609-617-5136 e-mail: mahyam@seafdec.org.my
19. Dr. Osamu Abe Deputy Chief SEAFDEC-MFRDMD	Fisheries Garden, Chendering 21080 Kuala Terengganu, Malaysia. ☎: 609-617-5940 Fax: 609-617-5136 E-mail: abe@seafdec.org.my

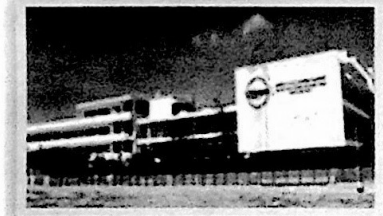
<p>20. Mr. Abu Talib Ahmad Research Officer</p>	<p>Fisheries Garden, Chendering 21080 Kuala Terengganu, Malaysia. ☎: 609-617-5940 Fax: 609-617-5136 E-mail: abutalib@seafdec.org.my</p>
<p>21. Mr. Syed Abdullah Syed A. Kadir Research Officer</p>	<p>Fisheries Garden, Chendering 21080 Kuala Terengganu, Malaysia. ☎: 609-617-5940 Fax: 609-617-5136 E-mail: syedabdmfrdmd@yahoo.com</p>
<p>22. Ms. Wahidah Mohd Arshaad Research Officer</p>	<p>Fisheries Garden, Chendering 21080 Kuala Terengganu, Malaysia. ☎: 609-617-5940 Fax: 609-617-5136 E-mail: wahidah@seafdec.org.my</p>
<p>OBSERVERS</p>	
<p>23. Mr. Hariel Hj.Simpol</p>	<p>Fisheries Department Ministry of Industry and Primary Resources Jalan Menteri Besar, Berakas, BB3910 Brunei Darussalam. ☎: 673-277-2786/2773693/2383067 Fax: 673-277-065 / 673-238-2069 E-mail: turtlebrunei@yahoo.com</p>
<p>24. Mr. Gulamsarwar Jan Mohammad</p>	<p>Department of Fisheries Malaysia Wisma Tani, Level 1,Block 4G2,Precint 4 Federal Government Administration Centre 62628 Putrajaya, Malaysia. ☎: 603-8870-4405/ 019-2767389 Fax: 603-8889-1233</p>
<p>25. Muhammad Zabawi bin Saat</p>	<p>Department of Fisheries Malaysia Wisma Tani, Level 1,Block 4G2,Precint 4 Federal Government Administration Centre 62628 Putrajaya, Malaysia. ☎: 603-8870-4405/ 019-2767389 Fax: 603-8889-1233 E-mail:zabawi@dof.gov.my</p>
<p>26. Dr. Juanita Joseph</p>	<p>Universiti Malaysia Terengganu 21030 Kuala Terengganu, Malaysia ☎: 609-668-3251 / 016-2069098 Fax 609-669-2166 E-mail: juanita@umt.edu.my</p>
<p>27. Mr. Gangaram Pursumal</p>	<p>WWF-Malaysia , 19 Jalan SS23/15 47400 Petaling Jaya , Selangor,Malaysia ☎:603-78033772 H/P: 012-3060279 E-mail:gpursumal @wwf.org.my website:www.wwf.org.my</p>

<p>28. Ms. Lau Min Min</p>	<p>1836 Jalan TBJ2,Taman Bidara Jaya2, 78300 Masjid Tanah,Melaka ☎: 606-3851559/60133908802 Fax 606-3851559 E-mail:mmlau@wwf.org.my</p>
<p>29. Mr. Douglas Hykle</p>	<p>IOSEA Marine Turtle MoU Secretariat c/o UNEP Regional Office for Asia and the Pacific, United Nation Building, Rajdamnern Nok Avenue, Bangkok 10200, Thailand ☎: 66-2288-1471 Fax: 66-2280-3829 E-mail: iosea@un.org</p>



THE SECRETARIAT

P.O.Box 1046, Kasetsart Post Office
Bangkok 10903 Thailand
Tel: (66-2)940-6326 Fax: (66-2)940-6336
E-mail: secretariat@seafdec.org
<http://www.seafdec.net>



TRAINING DEPARTMENT (TD)

P.O.Box 97, Phramutchedi
Samut Prakan 10290 Thailand
Tel:(66-2)425-6100 Fax:(66-2)425-6110/11
Email:td@seafdec.org
<http://td.seafdec.org>



MARINE FISHERIES RESEARCH DEPARTMENT (MFRD)

2 Perahu Road, off Lim Chu Kang Road,
Singapore 718915
Tel:(65)790-7973 Fax:(65)861-3196
E-mail:mfrdlibr@pacific.net.sg
<http://mfrd.seafdec.net/>



AQUACULTURE DEPARTMENT (AQD)

Main Office: Tigbauan, 5021 Iloilo, Philippines
Tel:(63-33) 511-9171, 336-2965
Fax:(63-33) 335-1008, 511-8709, 511-9070
E-mail: aqdchief@adq.seafdec.org.ph
<http://www.seafdec.org.ph>



MARINE FISHERY RESOURCES DEVELOPMENT AND MANAGEMENT DEPARTMENT (MFRDMD)

Taman Perikanan Chendering,
21080 Kuala Terengganu.
Tel: (609) 617-5940 Fax: (609) 617-5136
E-mail: mfrdmd@seafdec.org.my
<http://www.seafdec.org.my>

SEARCHED

ISBN 978-983-9114-50-8



9789839114508