



**Establishment and Operation of a Regional System of  
Fisheries *Refugia* in the South China Sea and Gulf of Thailand**

**REPORT**

**WORKSHOP ON FISHERIES REFUGIA BOUNDARY MARKING AT  
SURAT THANI SITE**

**SURAT THANI, THAILAND**

**31 MAY 2022**

Prepared by  
**Department of Fisheries  
Thailand**

---

**SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER  
TRAINING DEPARTMENT**



Southeast Asian Fisheries  
Development Center



United Nations  
Environment Programme



Global Environment  
Facility

First published in Phrasamutchedi, Samut Prakan, Thailand in July 2022 by the SEAFDEC-UNEP-GEF Fisheries Refugia Project, Training Department of the Southeast Asian Fisheries Development Center

Copyright © 2022, SEAFDEC-UNEP-GEF Fisheries *Refugia* Project

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder provided acknowledgment of the source is made. The SEAFDEC-UNEP-GEF Fisheries *Refugia* Project would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose without prior permission in writing from the SEAFDEC Secretary-General at.

Southeast Asian Fisheries Development Center  
Training Department  
P.O.Box 97, Phrasamutchedi, Samut Prakan, Thailand  
Tel: (66) 2 425 6100  
Fax: (66) 2 425 6110  
<https://fisheries-refugia.org> and  
<https://seafdec.or.th>

**DISCLAIMER:**

The contents of this report do not necessarily reflect the views and policies of the Southeast Asian Fisheries Development Center, the United Nations Environment Programme, and the Global Environment Facility.

For citation purposes this document may be cited as:

DOF/Thailand, 2022. Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand, Report of Workshop on Fisheries Refugia Boundary Marking at Surat Thani Site. Southeast Asian Fisheries Development Center, Training Department, Samut Prakan, Thailand; FR/REP/TH45, 15 p.

## REPORT

### AGENDA 1 OPENING OF THE WORKSHOP

The Workshop on Fisheries *Refugia* Boundary Marking at Surat Thani Site was organized by Surat Thani Fisheries Provincial Office on 31<sup>th</sup> May 2022, back to back with the workshop on Fisheries *Refugia* Operational Management at Surat Thani Site on 30<sup>th</sup> May 2022. The workshop was conducted at fisheries *refugia* site around Koh Sed in Chaiya District of Surat Thani Province, aimed at being the initial activity for operational management at Surat Thani fisheries *refugia* site and for strengthening cooperation of fishers, civil society, and community organizations in the management of fisheries *refugia* at site. Besides boundary marking, seed releasing of significant aquatic animals was done in fisheries *refugia* for the purpose of fisheries resources enhancement and for celebrating the success of fisheries *refugia* establishment in the area as well. The workshop were participated by members of Operational Management Board for Fisheries *Refugia* in Surat Thani Site, small-scale fishers, officers of Department of Fisheries, and fisheries *refugia* project officers. The activities were aerial recorded using drone by officers of Southeast Asian Fisheries Development Center (SEAFDEC), and aerial photographed by the members of Paramotor Club Surat Thani. In total, there were 56 participants cooperated in the workshop. Agenda and list of participants are shown in Annex 1 and Annex 2, respectively.

#### 1.1 OPENING ADDRESS BY DIRECTOR OF SURAT THANI FISHERIES PROVINCIAL OFFICE

By the fishing pier at the mouth of Phum Rieng Canal in Phum Rieng Subdistrict, **Mr. Itthiphon Kwathai**, Director of Surat Thani Fisheries Provincial Office, expressed his appreciation to all participants for their participation in the workshop on fisheries *refugia* boundary marking around Koh Sed of Surat Thani Site, another one day back to back with the previous day of the workshop on operational management. He noted that this was the further step for ecosystem-based management at fisheries *refugia* site by cooperation of the communities. He thanked small-scale fishers in Phum Rieng Subdistrict and officers of Surat Thani Fisheries Provincial Office for their collaboration in preparing the buoyage for boundary marking. He mentioned that beside the marking activity, there would be seed releasing of significant aquatic animals in the area which were penaeid shrimps and blue swimming crabs. In this regard, he conveyed his thanks to Viya Crab Products Co., Ltd. for support of blue swimming crabs and to Surat Thani Coastal Aquaculture Research and Development Center for support of penaeid shrimps for seed releasing. He thanked SEAFDEC for support of drone aerial recording and members of Paramotor Club Surat Thani for their joyful participation. Finally, he expressed his hope that the workshop would complete with high achievement leading to proper management of fisheries *refugia* at Surat Thani Site from now on.

#### AGENDA 2 INTRODUCTION OF BUOYAGE PREPARATION

**Mr. Somporn Kuasakul**, Head of Fisheries Administration and Management Group of Surat Thani Fisheries Provincial Office and concurrently a member of the Operational Management Board, informed the participants that preparation of the buoyage was already done at the place of Local Fishing Community Organization of the Group for Releasing Blue Swimming Crab into Ban Don Bay of Thai Seas, Ban Leam Pho, Phum Rieng Subdistrict, Chaiya District, Surat Thani Province. He introduced to the participants the composition of buoyage for fisheries *refugia* boundary marking, numbers of buoys for

placing, interval for each buoy, depth of sinkers, how to place the buoys, and the layout of boundary marking at site.

The buoy is made of 30-liter polypropylene bucket, filled with polyurethane foam. Logo and the name “Department of Fisheries” was water-proofed spray painted at one side of the buoy while “Conservation Area” was painted at the opposite side. Reflective stripe was placed at its upper side. The total of 40 buoys was prepared for boundary marking. Ready-prepared buoys are shown in Figure 1.



**Figure 1** Buoys for fisheries *refugia* boundary marking at Surat Thani Site

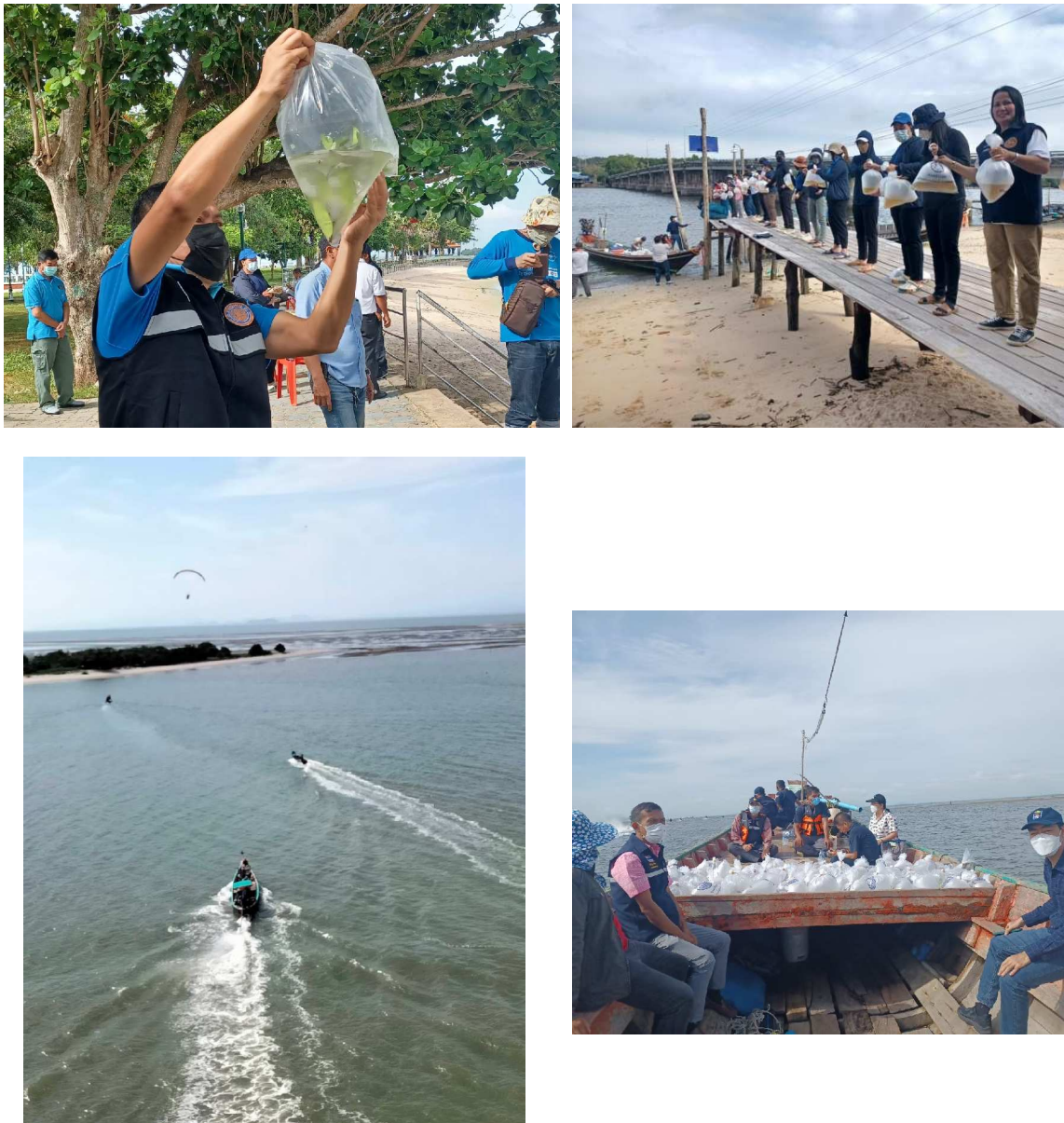
A concrete pipe, 80 centimeters in diameter and 40 centimeters in depth, was used as a sinker for each buoy. A buoy and a sinker were connected together by a 12-meters polypropylene rope, 18 millimeters in diameter. Concrete sinkers and connecting ropes can be seen in Figure 2.



**Figure 2** Sinkers, buoys and connecting ropes prepared for fisheries *refugia* boundary marking at Surat Thani Site

**AGENDA 3 SEED RELEASING AT SURAT THANI FISHERIES REFUGIA SITE**

In addition to boundary marking, an activity of seed releasing for fisheries resources enhancement was carried out at Surat Thani fisheries *refugia* site. The total of 1,000,000 blue swimming crab megalops was provided by Viya Crab Products Co., Ltd., and 300,000 penaeid shrimp post larvae were provided by Surat Thani Coastal Aquaculture Research and Development Center. In this regard, participants were requested to load the packages of those baby crabs and shrimps in oxygenated water onto 2 boats heading to Koh Sed, the fisheries *refugia* of Surat Thani Site. On arriving at fisheries *refugia* area, all the seeds were released with delight. The activities are shown in Figure 3.



**Figure 3** Activities for seed releasing at Surat Thani fisheries *refugia* site



**Figure 3 (cont.)** Activities for seed releasing at Surat Thani fisheries *refugia* site

#### **AGENDA 4 FISHERIES *REFUGIA* BOUNDARY MARKING AT SURAT THANI SITE**

**Mr. Somporn Kuasakul**, Head of Fisheries Administration and Management Group of Surat Thani Fisheries Provincial Office and concurrently a member of the Operational Management Board, is responsible for leading fisheries *refugia* marking activity. **Mr. Somporn**, in collaboration with members of Operational Management Board and small-scale fishers in the area, loaded all 40 sets of buoys onto 3 fishing boats moored at the mouth of Phum Rieng Canal in Phum Rieng Subdistrict. The buoys-loaded boats then headed to Surat Thani fisheries *refugia* site at Koh Sed where the buoys, together with their sinkers, were placed for marking. At the site, GPS devices were used to locate 40 geographic coordinates, with an interval of 375 meters, for placing the buoys lining as the boundary of fisheries *refugia* at Surat Thani Site. Geographic coordinates for fisheries *refugia* boundary line are shown in Table 1 which were indicated in the satellite maps illustrated in Figure 4.

**Table 1** Geographic coordinates for fisheries *refugia* marking at Surat Thani Site

<b>Point</b>	<b>Latitude North</b>	<b>Longitude East</b>	<b>Point</b>	<b>Latitude North</b>	<b>Longitude East</b>
1 A	9.335300	99.287000	21 C	9.359950	99.337500
2	9.337357	99.289412	22	9.357995	99.335139
3	9.339481	99.292049	23	9.355812	99.332588
4	9.341719	99.294713	24	9.353620	99.329939
5	9.343964	99.297324	25	9.351409	99.327328
6	9.346157	99.299966	26	9.349220	99.324695
7	9.348366	99.302565	27	9.346987	99.322065
8	9.350505	99.305146	28	9.344797	99.319456
9	9.352729	99.307749	29	9.342559	99.316811
10	9.354900	99.310400	30	9.340415	99.314217

Point	Latitude North	Longitude East	Point	Latitude North	Longitude East
11	9.357122	99.312994	31	9.337969	99.311286
12	9.359363	99.315659	32	9.335903	99.308911
13	9.361519	99.318239	33	9.333740	99.306290
14	9.363731	99.320892	34	9.331547	99.303701
15	9.365940	99.323515	35	9.329308	99.301035
16	9.368085	99.326062	36	9.327153	99.298476
17 <b>B</b>	9.370317	99.328700	37 <b>D</b>	9.324933	99.295800
18	9.367791	99.330874	38	9.327463	99.293660
19	9.365178	99.333067	39	9.330070	99.291440
20	9.362625	99.335253	40	9.332675	99.289232



**Figure 4** Fisheries *refugia* boundary and its buoy-marking points at Surat Thani Site

For thorough involvement, 4 boats were provided for the rest of participants and local reporters to observe activity at sea. They also got ashore at Koh Sed to observe the topography and coastal resources. Along with recording on ground, the activities were aerial recorded as images and videos, by drone and on paramotrs. Activities for fisheries *refugia* boundary marking are shown in Figure 5.

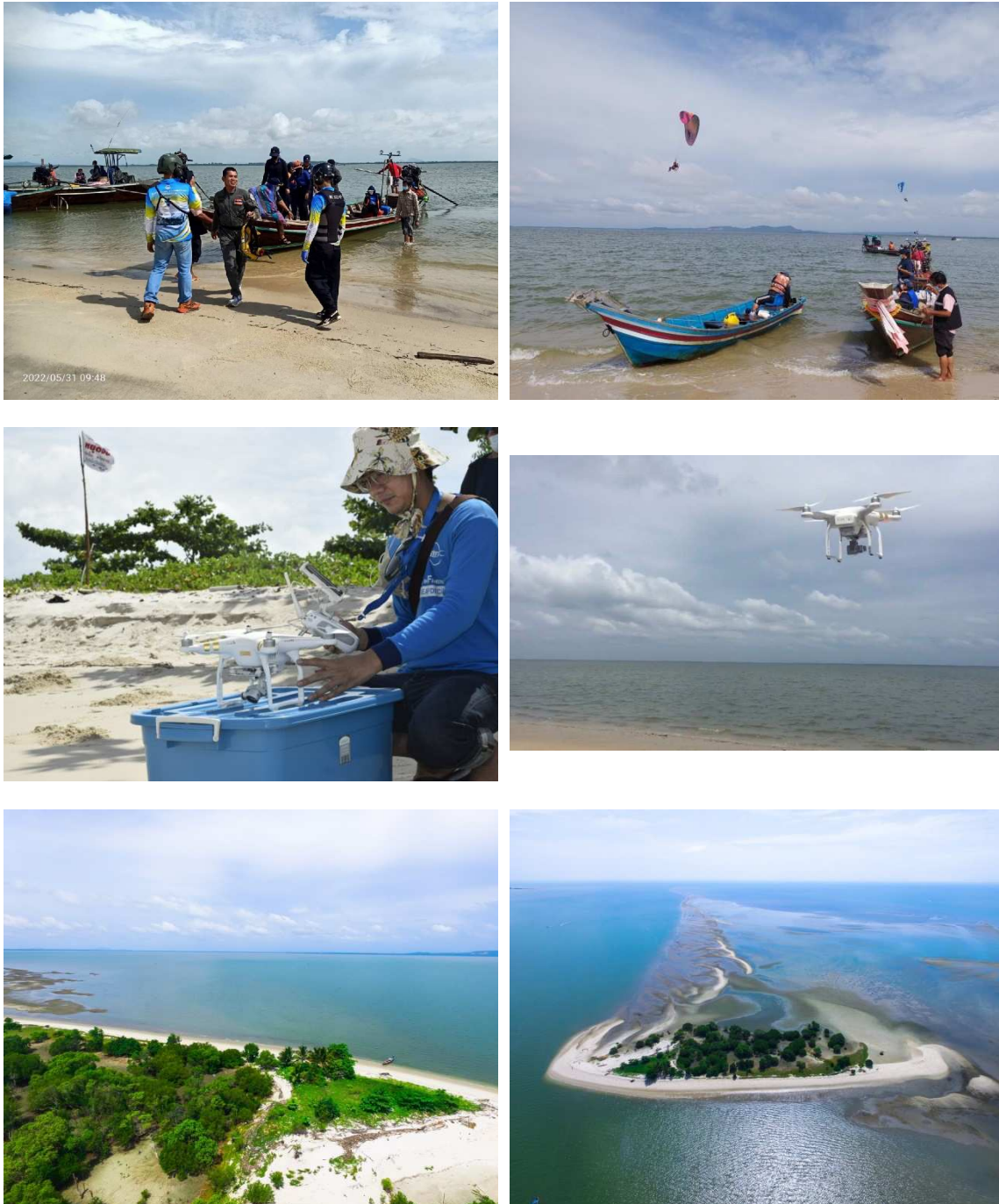


**Figure 5** Activities for fisheries *refugia* boundary marking at Surat Thani Site





**Figure 5 (cont.)** Activities for fisheries *refugia* boundary marking at Surat Thani Site



**Figure 5 (cont.)** Activities for fisheries *refugia* boundary marking at Surat Thani Site

#### **AGENDA 5 PRESS INTERVIEW FOR ESTABLISHMENT AND OPERATION OF FISHERIES REFUGIA AT SURAT THANI SITE**

Following the activities for boundary marking, **Ms. Prulai Nootmorn**, Senior Expert in Marine Fisheries and concurrently the National Focal Point for Fisheries *Refugia* project in Thailand, gave an interview to the National Broadcasting Services of Thailand-Surat Thani, describing the establishment and operation of fisheries *refugia* at Surat Thani Site. She introduced to the media that fisheries *refugia* project was regionally cooperated by

six countries in Southeast Asian Region objected to establish a regional system of fisheries *refugia* in the South China Sea and Gulf of Thailand. She explained that Koh Sed in Surat Thai Province was one of the two fisheries *refugia* established in Thailand; it played as a safeguard zone for young aquatic animals, particularly blue swimming crabs, in the Gulf of Thailand. She stressed on the technical information supported and the involvement of multi-stakeholders, particularly local fishers, in establishing fisheries *refugia* in the area. In her conversation, Operational Management Board for Surat Thani Fisheries *Refugia* Site at Koh Sed was already established, the members of which were local fishers and related stakeholders in the area. She mentioned that in order to support managing, Department of Fisheries had just conducted the workshop at the community to improve acceptance of ecosystem-based approach to fisheries management. **Ms. Praulai** finally stated that boundary markers for fisheries *refugia* around Koh Sed would help fishers to notice the *refugia* area with ease, and the area would be the best practice for sustainable management of blue swimming resources onwards. Press interview took place on Koh Sed at Surat Thani fisheries *refugia* site as shown in Figure 6.



**Figure 6** Press interview for establishment and operation of fisheries *refugia* at Surat Thani Site

#### **AGENDA 6 CLOSURE OF THE WORKSHOP**

On arrival at mainland Phum Rieng Subdistrict, **Mr. Itthiphon Kwathai**, Director of Surat Thani Fisheries Provincial Office, expressed his appreciation to all participants for taking their times to participate in the activities of fisheries *refugia* boundary marking and seed releasing. He thanked fishers for their involvement in this initial fisheries *refugia* management and support of fishing boats. He conveyed his hope that fisheries *refugia* boundary marking around Koh Sed would contribute to sustainable management of blue swimming crab resources in Surat Thani Province. Finally, he wished all participants safe travels back home.

.....

**ANNEX 1****AGENDA**

<b>TIME</b>	<b>AGENDA</b>
06:30-07:00	<b>ASSEMBLING AT PHUM RIANG FISHING PEIR</b>
07:00-07:15	<b>AGENDA 1    OPENING OF THE WORKSHOP</b>
	1.1 OPENING ADDRESS BY DIRECTOR OF SURAT THANI FISHERIES PROVINCIAL OFFICE
07:15-07:45	<b>AGENDA 2    INTRODUCTION OF BUOYAGE PREPARATION</b>
07:45-09:00	<b>AGENDA 3    SEED RELEASING AT SURAT THANI FISHERIES <i>REFUGIA</i> SITE</b>
09:00-12:00	<b>AGENDA 4    FISHERIES <i>REFUGIA</i> BOUNDARY MARKING AT SURAT THANI SITE</b>
12:00-14:00	<b>LUNCH BREAK AND OBSERVATION ON KOH SED</b>
14:00-14:30	<b>AGENDA 5    PRESS INTERVIEW FOR FISHERIES <i>REFUGIA</i> ESTABLISHMENT AT SURAT THANI SITE</b>
14:30-15:45	<b>TRAVELLING BACK TO PHUM RIANG FISHING PEIR</b>
15:45-16:00	<b>AGENDA 6    CLOSURE OF THE WORKSHOP</b>

**ANNEX 2****LIST OF PARTICIPANTS****Operational Management Board for Fisheries *Refugia* in the Coastal Seas around the Area of Koh Sed, Phum Rieng Subdistrict, Chaiya District, Surat Thani Province**

1.	Mr. Chatchai Bunmueang	Deputy Mayor of Phum Rieng Subdistrict, Chaiya District (represented the Mayor)	Chairman
2.	Mr. Prasert Chanjukorn	Li Let Subdistrict Head, Phun Phin District	Vice-Chairman
3.	Mr. Sunan Yangon	Takrop Subdistrict Head, Chaiya District	Committee
4.	Mr. Sutham Aepmani	Chairman of the Local Fishing Community Organization of the Group for Releasing Blue Swimming Crab into Ban Don Bay of Thai Seas	Committee
5.	Mr. Saran Rueangduk	Chairman of the Local Fishing Community Organization of Had Sai Kaew Small-scale Fishing Group	Committee
6.	Mr. Jirok Puakkliang	Representative of Tha Chang District: Mr. Jirok Puakkliang	Committee
7.	Mr. Pramot Salee	Representative of Phun Phin District: Mr. Pramot Salee	Committee
8.	Mr. Jarong Plodchum	Representative of Kanchanadit District: Mr. Jarong Plodchum	Committee
9.	Mr. Supaluk Tieobut	Representative of Don Sak District: Mr. Supaluk Tieobut	Committee
10.	Ms. Praween Chullaphakdi, Ph.D.	Chairman of Forest and Sea for Life Foundation	Committee
11.	Ms. Pilaiporn Thongmak	Tha Chana Fisheries District Chief	Committee
12.	Mr. Sanae Rattanasamnieng	Chaiya Fisheries District Chief	Committee
13.	Ms. Waraporn Chuenwiset	Tha Chang Fisheries District Chief	Committee
14.	Mr. Suvicha Jaipium	Phun Phin Fisheries District Chief	Committee
15.	Mr. Siwa Thanapol	Muang Surat Thani Fisheries District Chief	Committee
16.	Ms. Samruay Choomworathayi	Kanchanadit Fisheries District Chief	Committee
17.	Mr. Suchart Detchdaeng	Head of Lang Suan Marine Fisheries Patrol Unit (Chumphon)	Committee
18.	Mr. Somporn Kuasakul	Head of Fisheries Administration and Management Group, Surat Thani Fisheries Provincial Office	Committee

- |     |                           |  |                               |
|-----|---------------------------|--|-------------------------------|
| 19. | Mr. Akanit Kuapuag        | Senior Fisheries Technical Officer,<br>Chumphon Marine Fisheries Research and<br>Development Center                          | Committee                     |
| 20. | Mr. Charin Choeichoeichom | Chairman of the Local Fishing<br>Community Organization of Phum Rieng<br>Subdistrict Aquatic Resources<br>Conservation Group | Committee<br>and<br>Secretary |

**Small-scale Fishers in the Area of Koh Sed, Phum Rieng Subdistrict, Chaiya District, Surat Thani Province**

1. Mr. Jare Ainoakson
2. Mr. Atichart Renseb
3. Mr. Chirasak Matmani
4. Mr. Narong Chaengoakson
5. Mr. Rungrot Wanwiriya
6. Mr. Sakthanut Chansorot

**Officers of Department of Fisheries**

- |     |                                    |  |
|-----|------------------------------------|--|
| 1.  | Mr. Itthiphon Kwathai              | Director, Surat Thani Fisheries Provincial Office  |
| 2.  | Ms. Jinda Petchkamnerd             | Director, Chumphon Marine Fisheries Research and<br>Development Center                         |
| 3.  | Mr. Tanut Srikum                   | Director, Rayong Marine Fisheries Research and<br>Development Center                           |
| 4.  | Mr. Pavarot Noranarttragoon, Ph.D. | Senior Fisheries Technical Officer, Marine Fisheries<br>Research and Development Division      |
| 5.  | Mr. Udom Khrueniam                 | Senior Fisheries Technical Officer, Rayong Marine<br>Fisheries Research and Development Center |
| 6.  | Ms. Tassawan Khaosrichan           | Senior Fisheries Technical Officer, Rayong Marine<br>Fisheries Research and Development Center |
| 7.  | Ms. Waririn Premrith               | Fisheries Technical Officer, Rayong Marine<br>Fisheries Research and Development Center        |
| 8.  | Ms. Phanida Bualangka              | Fisheries Technical Officer, Rayong Marine<br>Fisheries Research and Development Center        |
| 9.  | Mr. Jirawut Kumpirod               | Fisheries Technical Officer, Chumphon Marine<br>Fisheries Research and Development Center      |
| 10. | Ms. Phuongphorn Prabsed            | Fisheries Technical Officer, Chumphon Fisheries<br>Research and Development Center             |
| 11. | Mr. Yanaphat Siriphong             | Fisheries Technical Officer, Chumphon Fisheries<br>Research and Development Center             |
| 12. | Mr. Thanith Poonthong              | Head of Fisheries Administration and<br>Management Group, Trat Fisheries Provincial<br>Office  |

- |     |                           |  |
|-----|---------------------------|--|
| 13. | Ms. Parichat Songchuay    | Legal Officer, Surat Thani Fisheries Provincial Office               |
| 14. | Ms. Ketsuda Saengmanee    | Fisheries Technical Officer, Surat Thani Fisheries Provincial Office |
| 15. | Ms. Sakulthip Phutthakaew | Fisheries Officer, Surat Thani Fisheries Provincial Office           |
| 16. | Mr. Chareonphong Sukkho   | Fisheries Officer, Surat Thani Fisheries Provincial Office           |

#### **Fisheries *Refugia* Project Officers for Department of Fisheries**

- |    |   |  |
|----|---|--|
| 1. | Ms. Praulai Nootmorn<br>(Senior Expert in Marine Fisheries) | National Focal Point for Thailand                  |
| 2. | Ms. Ratana Munprasit  | Assistant for Fisheries <i>Refugia</i> Project     |
| 3. | Ms. Panita Choopan  | Fisheries <i>Refugia</i> Project Technical Officer |
| 4. | Ms. Nattha Chalomklang                                      | Fisheries <i>Refugia</i> Project Officer           |

#### **Drone Aerial Recorders**

- |    |                         |  |
|----|-------------------------|--|
| 1. | Mr. Weerasak Yingyuad   | Senior Technical Officer, Southeast Asian Fisheries Development Center       |
| 2. | Mr. Krit Phusirimongkol | Training and Extension Officer, Southeast Asian Fisheries Development Center |

#### **Aerial Photographers/Observers**

- |    |                                      |   |
|----|--------------------------------------|---|
| 1. | Pol.Capt. Suchart Phuttharath        | Members of Paramotor Club Surat Thani                                     |
| 2. | Sub Lt. Chuen Chusaeng               | Members of Paramotor Club Surat Thani                                     |
| 3. | Pol. Snr. Sgt. Maj. Khanchit Taochan | Members of Paramotor Club Surat Thani                                     |
| 4. | Mr. Montri Lornnong                  | Members of Paramotor Club Surat Thani                                     |
| 5. | Mr. Panya Phetting                   | Members of Paramotor Club Surat Thani                                     |
| 6. | Mr. Thanaphong Waiphan               | Members of Paramotor Club Surat Thani                                     |
| 7. | Mr. Decho Saksri                     | Members of Paramotor Club Surat Thani                                     |
| 8. | Mr. Surasit Larao                    | Representative of seafood processing plant (Viya Crab Products Co., Ltd.) |

.....