



# **National Progress Report in Cambodia**

**ESTABLISHMENT AND OPERATION OF A REGIONAL SYSTEM OF FISHERIES REFUGIA IN THE SOUTH CHINA SEA  
AND GULF OF THAILAND**

**LENG SY VANN**

**Deputy Director of Department of Fisheries Conservation,  
Fisheries Administration of Cambodia and  
National Scientific and Technical Focal Point**

**Supported by Fisheries *Refugia* SEAFDEC/UNEP/GEF**

**21-23 May 2019**

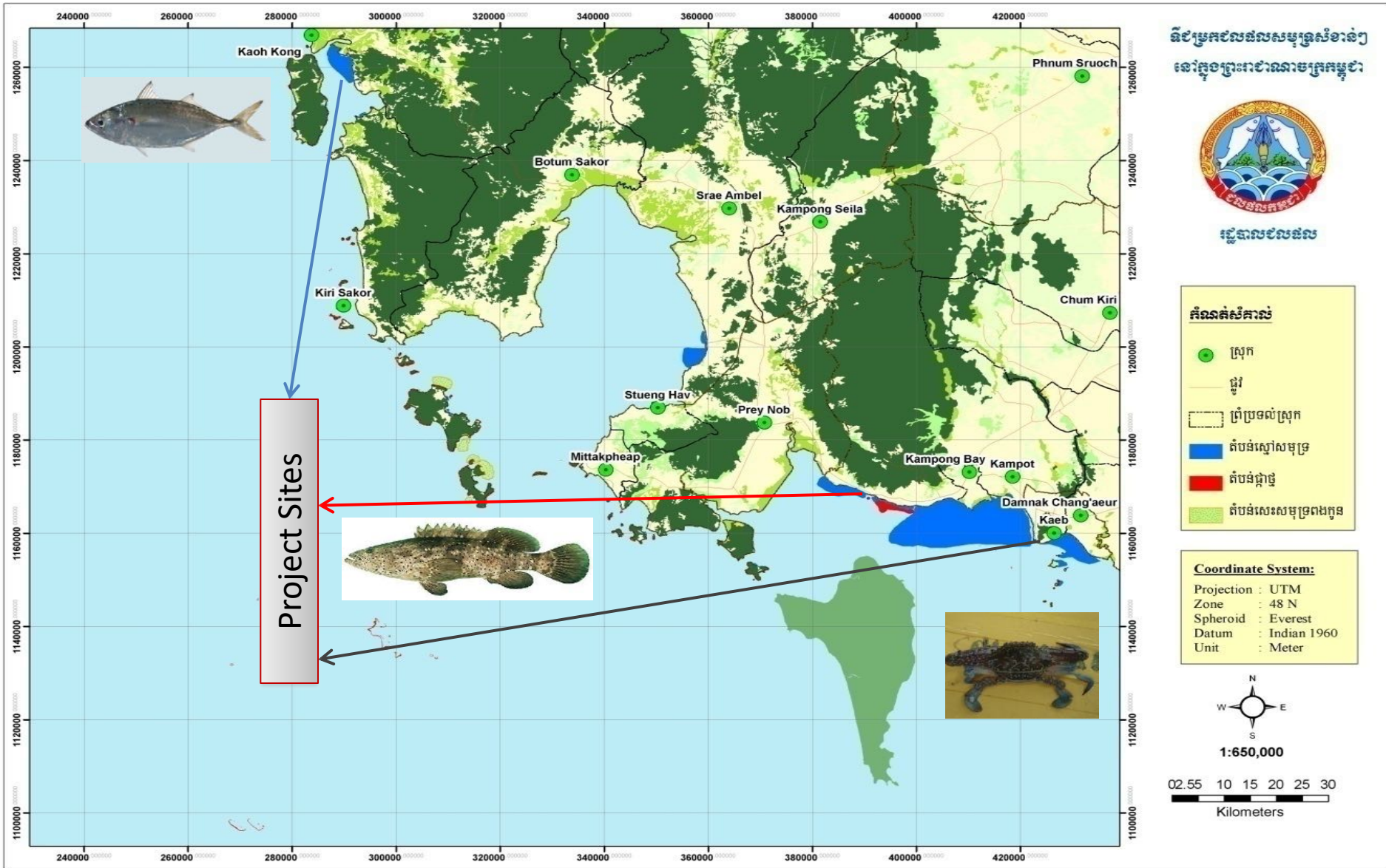
**Thansur Sokha Hotel, Kampot Province, Cambodia**



## Content of Presentation

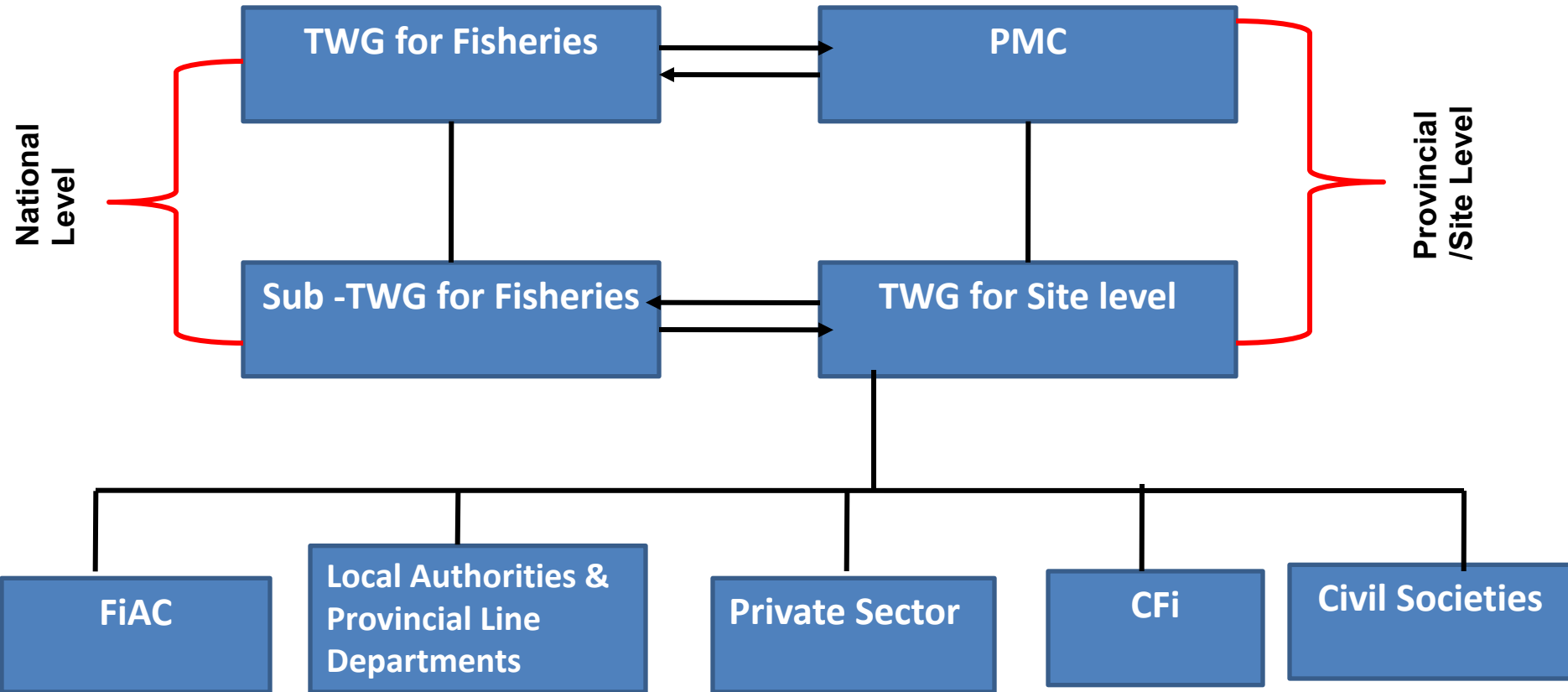
1. General Aspect of Fisheries Refugia Project
2. Management and Coordination Structure
3. Project Progressing Report from September 2018 to May 2019
4. Implementation of Activities in Fisheries *Refugia* Sites
5. Baseline Survey of Short mackerel (*Rastrelliger brachysoma*) in Koh kong
6. Project Benefit into National Fisheries Framework and Policy
7. Next costed work plan for Q3 and Q4 in 2019

# 1. PROJECT SITES





## 2. MANAGEMENT AND COORDINATION STRUCTURE



### 3. PROJECT PROGRESSING REPORT FROM SEPTEMBER 2018 TO MAY 2019



Activities	Kep Province	Koh Kong Province	Kampot Province
Stakeholder consultation workshop	Done August 2017	Done September 2017	Done November 2018
Mapping and Demarcating Fisheries <i>Refugia</i> Boundaries	Done April 2018	Done March 2018	Draft Expect to approve for Q3
Site Base Management Board Establishment	Done Sept 2018	Draft Expect to approve for Q3	Draft Expect to approve for Q3
Fisheries <i>Refugia</i> Proclamation Promulgated by MAFF's Minister	Done April 2018	Draft approved by provincial authority	Draft approved by provincial authority
Management Plan Preparation for Fisheries <i>Refugia</i> Sites	Draft Expect to approve for Q2	Not yet Expect to start for Q3	Not yet Expect to start for Q3
Key Species in Fisheries <i>Refugia</i> Sites	Blue Swimming Crab	Short mackerel	Juvenile Grouper

# STAKEHOLDER CONSULTATION WORKSHOP IN KAMPOT



Stakeholder consultation workshop with community fisheries and fishers in Kampot



Stakeholder consultation workshop with community fisheries and fishers in Kampot



Stakeholder consultation workshop with provincial line departments in Kampot

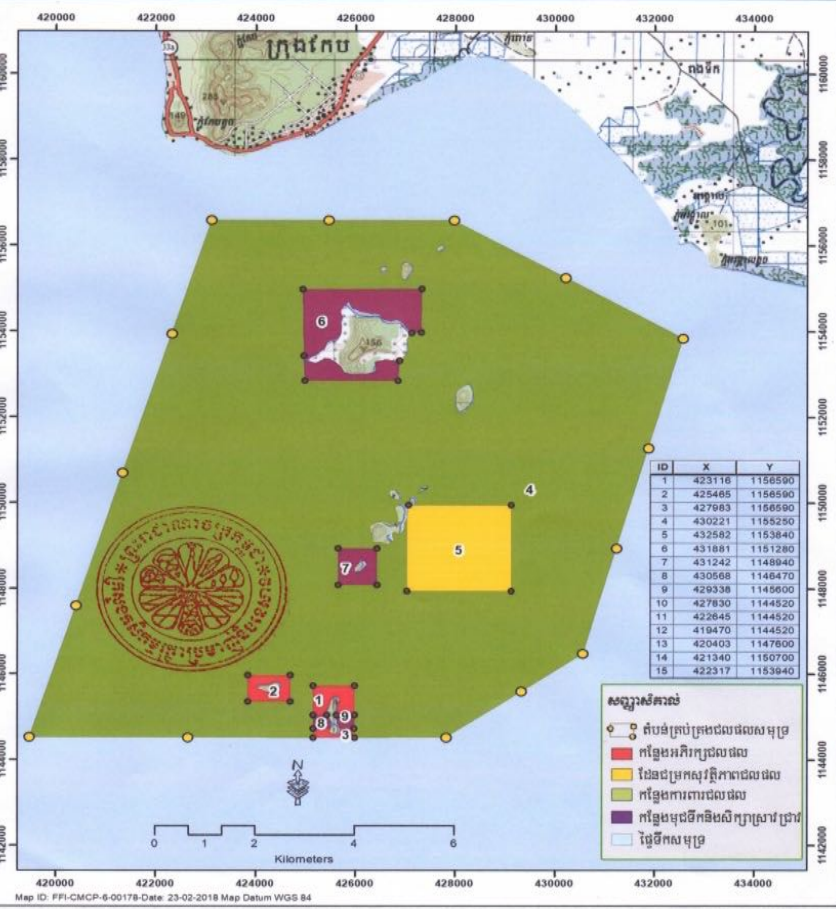


Stakeholder consultation workshop with provincial line departments in Kampot

# MAPPING AND DEMARCATING BOUNDARIES OF FISHERIES REFUGIA SITES



ឧបសគ្គ៥១ នៃប្រកាសលេខ ១៧៧ ចុះថ្ងៃទី ១២ ខែ ៧ ឆ្នាំ ២០១៨ ស្តីពីការបង្កើតតំបន់គ្រប់គ្រងជលផលសមុទ្រនៅប្រជុំកោះកេរីនិងកោះឆ្មារ ខេត្តកែប



Mapping and Demarcating boundary of Blue swimming crab Fisheries Refugia approved by MAFF's Minister

ឧបសគ្គ៥១ នៃប្រកាសលេខ.....ចុះថ្ងៃទី.....ខែ.....ឆ្នាំ២០១៨ ស្តីពីការបង្កើតនិងគ្រប់គ្រងជលផលសមុទ្រអភិរក្សជលផលសមុទ្រកោះកេរីន ខេត្តកោះកុង

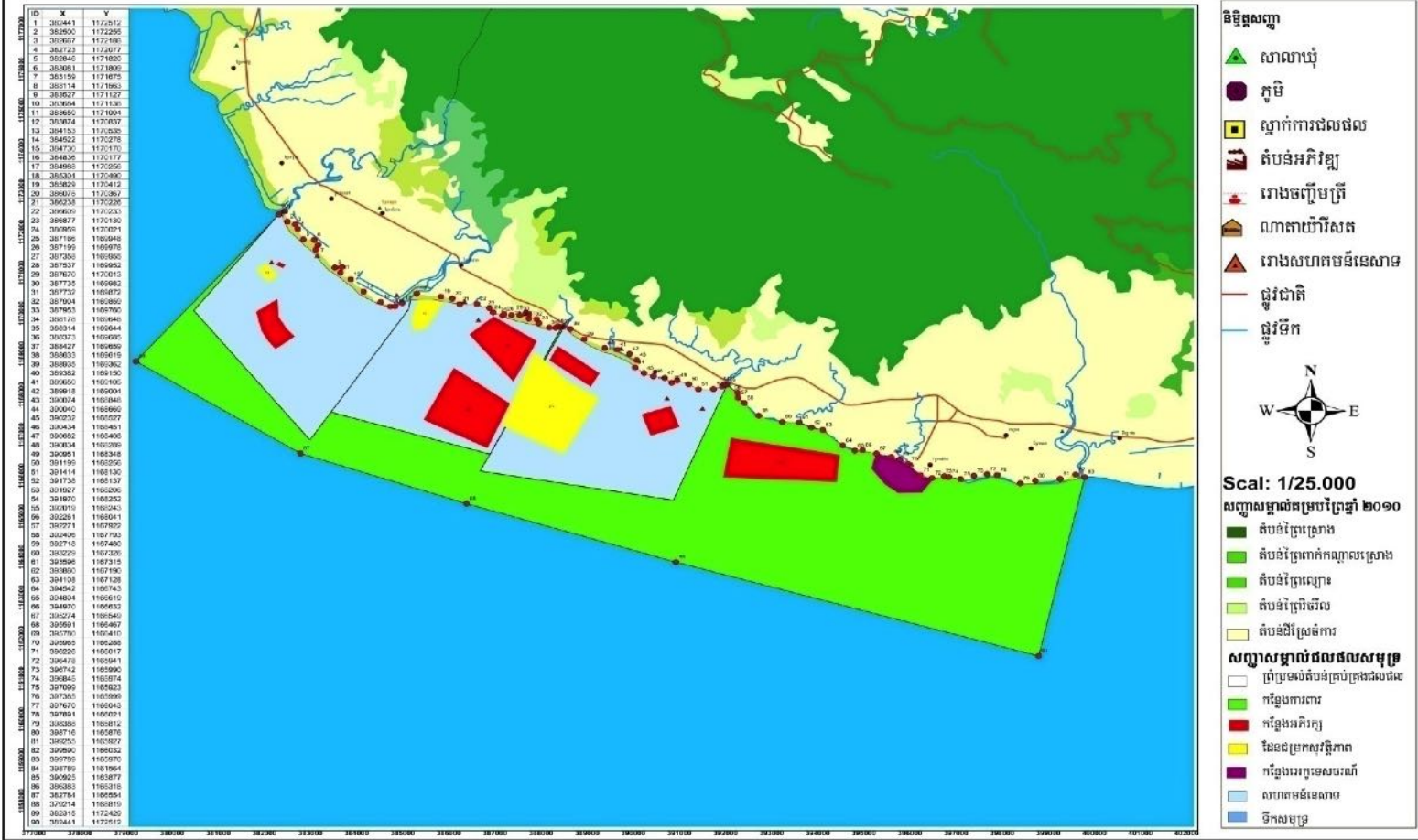


Mapping and Demarcating boundary of Blue swimming crab Fisheries Refugia approved by Koh Kong Provincial Hall Administration



# Mapping and Demarcating draft boundary of fisheries refugia site in Kampot province

ផែនទីប្រាណតំបន់គ្រប់គ្រងជលផលសមុទ្រ ដែលមានទំហំផ្ទៃដី ៨.៤៨៦ ហិកតា ស្ថិតនៅក្នុង ឃុំព្រែកស្ពោត ស្រុកឈូក ខេត្តកំពត



In principal, it has been approved by CFis, local authorities, DoA, and FiAC, but still discuss with provincial governor. It expect to be approved on next quarter



# MEETING WITH PROVINCIAL LINE DEPARTMENTS ON DRAFT PROCLAMATION ON ESTABLISHMENT AND MANAGEMENT OF FISHERIES REFUGIA AT PROVINCIAL LEVEL



Meeting with provincial line departments chaired by Deputy Governor of Kampot



Meeting with provincial line departments chaired by Deputy Governor of Kampot



Meeting with provincial line departments chaired by Koh Kong Governor



Meeting with provincial line departments chaired by Deputy Governor of Koh Kong

# MEETING WITH TWG ON MANAGEMENT PLAN PREPARATION FOR BLUE SWIMMING CRAB FISHERIES REFUGIA IN KEP



Technical Working Group Meeting chaired by Deputy Governor of Kep on Management Plan Preparation for Blue swimming crab Fisheries Refugia in Kep



Technical Working Group Meeting chaired by Deputy Governor of Kep on Management Plan Preparation for Blue swimming crab Fisheries Refugia in Kep



# IMPLEMENTATION OF ACTIVITIES IN FISHERIES REFUGIA SITES



## 1. BLUE SWIMMING CRAB FISHERIES REFUGIA IN KOH PO, KEP

*FiA has collaborated with FiAC in Kep to conduct public awareness on the role and function of blue swimming crab fisheries refugia in Koh Po in March 2019 to wider local authorities, CFIs, and fishermen and demarcate the boundary of that area to ensure effective patrol management, funded by Fisheries Refugia Project SEAFDEC/UNEP/GEF. There are total 150 participants in three events*





*FiA has collaborated MCC to build and deploy concrete block into marine fisheries management area in aim of (1) protecting coral reef, sea grass, and spawning ground from illegal fishing , and (2) serving as artificial habitat for some key species.*

*1600concrete block (80 artificial boxes) have been deployed into marine fisheries management area and will plan to deploy furthermore next quarter*



*Officers of FiAC in Kep as patrolling group operated to crack down illegal fishing in marine fisheries management area of fisheries refugia site of blue swimming crab.*



## 2. MACKEREL FISHERIES REFUGIA IN PEAM KRASOB, KOH KONG



*FiA has collaborated with FiAC in Koh Kong to conduct public awareness on the role and function of mackerel FR on March 2019 in Peam Krasob, Koh Sorlao, and Koh Kapi, funded by FR Project SEAFDEC/UNEP/GEGF. There are total 155 participants in three events.*



Dissemination activities of the importance of mackerel FR in Koh Ka Pi



Dissemination activities of the importance of mackerel FR in Koh Sro Lao



Dissemination activities of the importance of mackerel FR in Peam Krasob



# **BASELINE SURVEY OF SHORT MACKEREL (*Rastrelliger brachysoma*) IN KOH KONG**

## **1. PURPOSE**

To provide scientific data to support the establishment and management of mackerel fisheries *refugia* in Koh Kong province

## **2. METHODOLOGY**

*There are several methods to be conducted such as*

- Collecting fish sampling from local market, landing site, and fishing ground
- Operating fish to check its gonad development
- Collecting its DNA
- Harvesting sampling of fish larvae using bongo net with the size of less 500micron



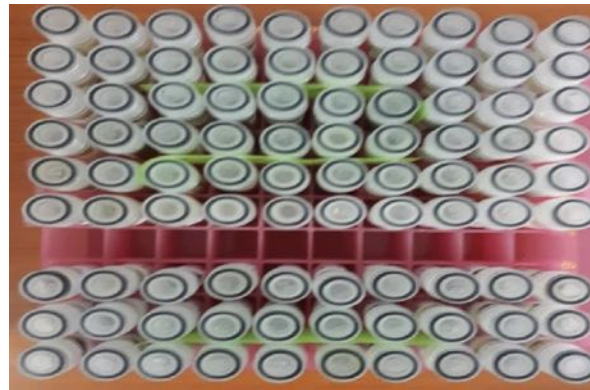
Collecting fish sample at local market in Koh Kong



Operating fish to check its gonad



Collecting DNA



Collecting sample of fish larvae





### 3. RESULTS

**Table1: Monthly distribution of short mackerel by sex**

No.	Month/year	Sex				Total
		Female	%	Male	%	
1	Dec-18	17	40.48	25	59.52	42
2	Jan-19	18	22.22	63	77.78	81
3	Feb-19	62	73.81	22	26.19	84
4	Mar-19	28	32.18	59	67.82	87
5	Apr-19	75	87.21	11	12.79	86
6	May-19	40	63.49	23	36.51	63
		<b><u>240</u></b>	<b><u>54.18</u></b>	<b><u>203</u></b>	<b><u>45.82</u></b>	<b><u>443</u></b>

*In this research, 443 fish sampling were collected from local market, fishing ground, and landing site, including 240 females (54.18%) and 203 males (45.82%) according to t able 1.*

**Table 2: Monthly distribution of short mackerel total length and body weight by sex**

No.	Month/year	Female		Male	
		TL (cm)	BW (g)	TL (cm)	BW (g)
1	Dec-18			14.69	51.77
2	Jan-19	15.22	58.89	14.68	52.12
3	Feb-19	17.70	67.94	17.13	58.9
4	Mar-19	17.03	58.70	16.65	53.52
5	Apr-19	16.25	52.24	16.15	50.17
6	May-19	17.61	58.10	16.65	50.42

*Table 2 showed that Female' mature is total length from 15.22 cm to 17.70 cm and its body weight from 52.24g to 67.94g meanwhile male's mature is total length from 14.68 to 17.13 and body weight from 50.17g to 58.9g*

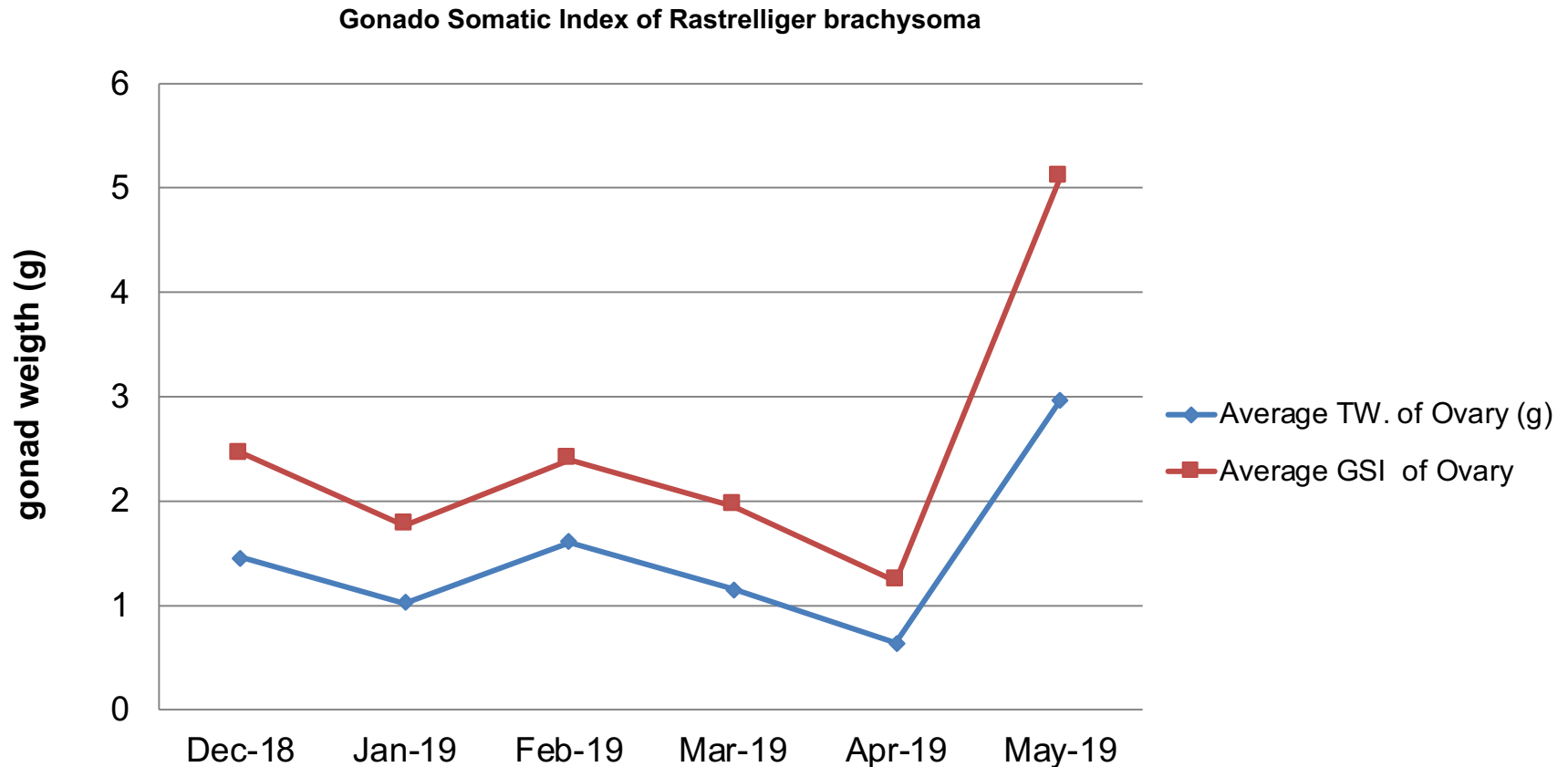
Table3: Monthly distribution of short mackerel's body weight, ovary weight, and gonad somatic index

Month/year	Average T W of Body (g)	Average TW of Ovary (g)	Average GSI of Ovary
Dec-18	58.89	1.45	2.46
Jan-19	57.75	1.02	1.77
Feb-19	67.94	1.63	2.40
Mar-19	58.70	1.15	1.96
Apr-19	52.24	0.64	1.23
May-19	58.10	2.97	5.11

*GSI value of short mackerel ovary varies up on total weight of body and ovary weight. Table 1 showed average GSI value increased 2.46, indicating that fish spawning in December and then GIS value start declining 1.77, indicating fish start releasing egg into sea water in January. Then GSI value increase 2.40, fish start spawning in February and GSI value decrease from 1.96 to 1.23, fish start releasing egg into sea water in March to April. GSI value increase 5.11, fish start spawning again in May*



**Figure 1: Monthly distribution of short mackerel's Gonad Somatic Index**

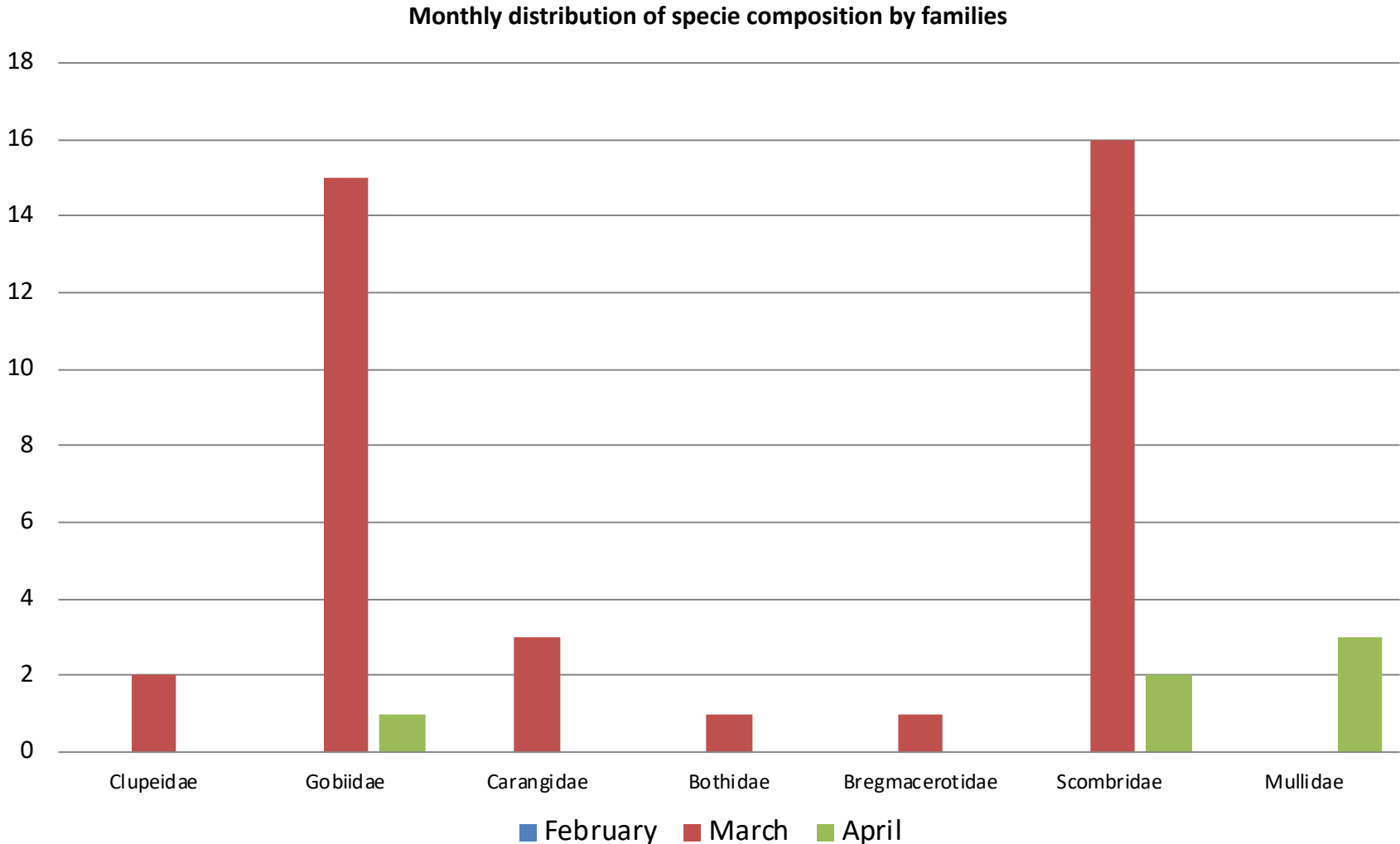


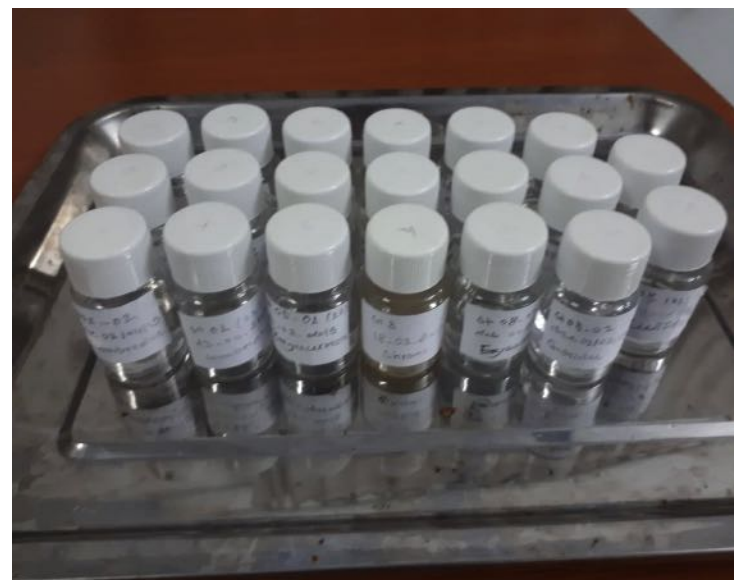
*Figure 1 showed average GSI value increased 2.46, indicating that fish spawning in December and then GIS value start declining 1.77, indicating fish start releasing egg into sea water in January. Then GSI value increase 2.40, fish start spawning in February and GSI value decrease from 1.96 to 1.23, fish start releasing egg into sea water in March to April. GSI value increase 5.11, fish start spawning again in May*

**Table 4: Monthly identification of specie composition by families and by station**

Families	Station1	Station2	Station3	Station4	Station5	Station6	Station7	Station8	Total
<b>February</b>									
Small shrimp									
Sea weed									
worm									
<b>March</b>									
Clupeidae	1			1					2
Gobiidae					13			2	15
Carangidae					3				3
Bothidae					1				1
Bregmacerotidae					1				1
Scombridae		1	14				1		16
<b>sub-Total</b>	<b>1</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>38</b>
<b>April</b>									
Scombridae	2								2
Mullidae							3		3
Gobiidae	1								1
<b>Sub-Total</b>	<b>3</b>						<b>3</b>		<b>6</b>
<b>Grand Total</b>	<b>4</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>18</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>44</b>

**Figure 2: Monthly distribution of specie composition by families**





# PROJECT BENEFIT INTO NATIONAL FISHERIES FRAMEWORK AND POLICY



Fisheries *refugia* concept will be integrated into national fisheries framework and policy such as

- ✓ Fisheries Law

At least 5 articles (Chapter on protection and conservation of fisheries , and Penalties) related to fisheries *refugia* establishment and management including zoning type, certain period of closed season for particular species as well as sanction to the fishing offender

- ✓ National action plan on combating IUU,
- ✓ 10 year strategy plan for fisheries conservation, and
- ✓ 5 year management plan for fisheries conservation,



# NEXT COSTED WORKPLAN FOR Q3 & Q4 IN 2019



Project Components/Activities		Estimated Costed-Workplan for Q3 and Q4/2019		
<b>Component 1</b>	<b>Identification and management of fisheries and critical habitat linkages at priority fisheries refugia in the South China Sea</b>	Q3	Q4	Total
<b>Activity 1.2</b>	Facilitating agreement among stakeholders on the boundaries of fisheries refugia at 14 priority fisheries refugia sites	3,000.00		3,000.00
<b>Activity 1.3</b>	Developing Community-Based Management Plans for 14 priority fisheries refugia sites	5,000.00	5,000.00	10,000.00
<b>Activity 1.4</b>	Establishing operational management for 14 priority fisheries refugia sites	10,000.00	10,000.00	20,000.00
<b>Activity 1.5</b>	Strengthening civil society and community organization participation in the management of 14 fisheries refugia sites	500.00	500.00	1,000.00
	<b>sub-total</b>	<b>18,500.00</b>	<b>15,500.00</b>	<b>34,000.00</b>
<b>Component 2</b>	<b>Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-base for fisheries refugia management in the South China Sea</b>	Q3	Q4	Total
<b>Activity 2.3</b>	Development of national guidelines on the establishment and operation of fisheries refugia and reflected in an updated regional refugia action plan	3,000.00	5,000.00	8,000.00
<b>Activity 2.5</b>	Enhancing access to information relating to status and trends in fish stocks and their habitats in waters of the SCS marine basin	4,000.00	8,000.00	12,000.00
<b>Activity 2.6</b>	Improved national and regional-level management and sharing of information and data on fish early life history in the waters of SCS	6,000.00	6,000.00	12,000.00
<b>Activity 2.8</b>	Strengthening the information base for the planning, monitoring and evaluation of management at priority fisheries refugia sites	1,500.00	1,500.00	3,000.00
	<b>sub-total</b>	<b>14,500.00</b>	<b>20,500.00</b>	
<b>Component 3</b>	<b>Information Management and Dissemination in support of national and regional-level implementation of the fisheries refugia concept</b>	Q3	Q4	Total
<b>Activity 3.2</b>	Improving community acceptance of area based approaches to marine management in the 6 participating countries		2,000.00	2,000.00
	<b>sub-total</b>	<b>-</b>	<b>2,000.00</b>	<b>2,000.00</b>
<b>Component 4</b>	<b>National and regional cooperation and coordination for integrated fish stock and critical habitat management in the South China Sea</b>	Q3	Q4	Total
<b>Activity 4.3</b>	Catalyzing local community action via establishment and operation of site-based management boards at 14 priority refugia sites	2,000.00	2,000.00	4,000.00
	<b>sub-total</b>	<b>2,000.00</b>	<b>2,000.00</b>	<b>4,000.00</b>
	<b>SUB TOTAL PROJECT COST (\$)</b>	<b>2,000.00</b>	<b>2,000.00</b>	<b>4,000.00</b>
	<b>TOTAL PROJECT COST (2019) (\$)</b>	<b>35,000.00</b>	<b>40,000.00</b>	<b>75,000.00</b>



**Thank you very much for your attention**