



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

REPORT

**SEAFDEC/UN ENVIRONMENT/GEF Fisheries Refugia Project
Progress Report Q4 2018 to Q2 2019**

JOHOR, MALAYSIA
11 September 2019

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SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER
TRAINING DEPARTMENT



First published in Phrasamutchedi, Samut Prakan, Thailand in September 2019 by the SEAFDEC-UNEP-GEF Fisheries Refugia Project, Training Department of the Southeast Asian Fisheries Development Center

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For citation purposes this document may be cited as:

DOF/Malaysia. 2019. Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand, SEAFDEC/UN ENVIRONMENT/GEF Fisheries Refugia Project Progress Report Q4 2018 to Q2 2019. Southeast Asian Fisheries Development Center, Training Department, Samut Prakan, Thailand; FR/REP/MY20, 26 p.

Introduction to Fishery Refugia in Malaysia

There are two proposed fishery refugia sites in Malaysia, namely the Lobster (*Panulirus* spp.) Refugia in Tanjung Leman, Johor and the Tiger Prawn (*Penaeus monodon*) in Kuala Baram, Miri, Sarawak (Figure 1). For the lobster refugia in Tanjung Leman, the actual site has not been determined yet as scientific data gathering is still ongoing and the Department of Fisheries Malaysia will only announce the refugia area once the spawning site of the spiny lobster has been determined. The main fishing area for spiny lobsters spans from southern Pahang to the tip of east Johor.

As for the tiger prawn refugia, the proposed site is located at the river mouth of Kuala Baram in Miri, Sarawak and the refugia area has been roughly determined by researchers studying the prawn population there. The proposed site for the tiger prawn refugia is located near a mangrove swamp with a river mouth and nearby the border of Brunei Darussalam. The offshore area sloops into deep water as characteristic of a continental sloop area.

This report documents the activities conducted under the Fisheries for the period Quarter 4 2018 to Quarter 2 2019.



Figure 1: The locations of the proposed Lobster Refugia at Tanjung Leman, Johor (Site 1) and Tiger Prawn Refugia at Kuala Baram, Sarawak (Site 2)

Work Progress for the period Quarter 4 2018 to Quarter 2 2019

Component 1:

Identification and management of fisheries and critical habitat linkages at 3 priority fisheries *refugia* in Malaysia

Sub-component 1.1

Developing fisheries and coastal habitat information and data collection programmes for (1) Tg. Leman, Johor and (2) Kuala Baram, Sarawak

Activity 1.1.4

Design and conduct fisheries surveys at the 2 sites and submit data to a national online database.

Progress:

(1) Tg. Leman, Johor

The lobster fishery in the East Coast of Peninsular Malaysia focused mainly at the waters of East Johor and southern part of Pahang state. Fishermen at these areas use traditional gears such as traps and seine nets to catch lobsters at the shoreline area while commercial trawlers sometimes catch adult lobsters as bycatch in deeper waters. The lobsters caught were preferably kept alive and sold to collectors at jetties in Sungai Rengit, Sedili, Tanjung Leman, Mersing and Endau in Johor and Rompin in Pahang, as shown in Figure 1 below.



Figure 1: Spiny lobster fishery area at south Pahang-east Johor.

Live lobsters fetch significantly higher price when sold to nearby seafood restaurants and even exported to Singapore. The pricing of lobsters varies according to size and also seasonality. The jetty price may range from RM100 to RM160 per kilogram of lobster but may change according to supply. The market demand for lobster is strong even if the price is comparatively expensive to other seafood as it is considered a luxury food item.

There are five species of lobsters recorded in the waters of East Johor (*Panulirus polyphagus*, *P. ornatus*, *P. versicolor*, *P. homarus* and *P. logipes*) but the most common species caught by local fishermen is the Mud Spiny Lobster, *P. polyphagus*. This species, together with another type of crustacean called the Slipper Lobster, *Thenus orientalis*, are the main focus of the lobster refugia project.

At present, the exact size and location for the lobster refugia in East Johor-South Pahang is still not determined yet as more scientific data is needed to support the formation of the refugia area. However, groundwork to gather the necessary information has already begun since year 2016. These activities include the collection of lobster landing data from selected jetties at Endau, Tanjung Leman and Sedili, lobster resource surveys at sea using trawl nets, lobster larvae (phyllosoma) studies and socio-economic surveys of lobster fishermen.

The average weight of Mud Spiny Lobster (*P. polyphagus*) landed by fishermen at Sedili, from July 2017 to March 2019 was 256 gram but varied from 153 to 354 gram, as shown in Figure 2 below.

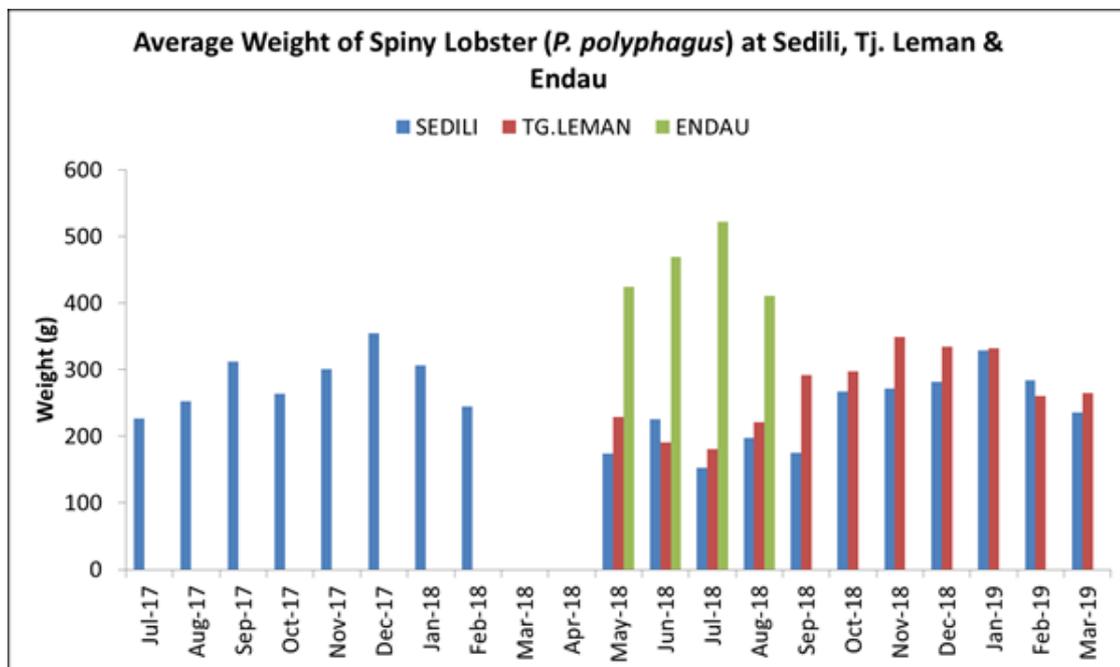


Figure 2: Average weight of Mud Spiny Lobster (*P. polyphagus*) landed by fishermen at Sedili, Tanjung Leman and Endau jetties in East Johor from July 2017 to March 2019.

For Tanjung Leman, the average weight of Mud Spiny Lobster landed by fishermen was 268 gram and ranged from 180 to 349 gram while at Endau jetty the average weight of Mud Spiny Lobster was 457 gram and ranged from 411 to 522 gram. From the landing data, the size of Mud Spiny Lobster increased and peaked during the rainy season which coincide with the North-East monsoon. Bigger sized lobsters may be induced to come out from their burrows due to the influx of freshwater from the land during the rainy season and subsequently caught by the fishermen (personal comm. Prof. M. Ikhwanuddin, UMT). As there were some gaps in the data collected, the lobster landing data collection activity has to be continued further so as to be able to provide more useful trend analysis.

A resource survey was conducted in the waters surrounding Tioman Island and Tinggi Island on 24-28 October 2018. The study area was estimated to be about 6294 kilometer square and sampling was conducted onboard a research vessel (KK Senangin II) using a bottom trawl net. However, only slipper lobsters (*Thenus orientalis*) were caught during the duration of this survey (Figure 3). The average density of slipper lobsters from this survey was $1.29 \pm 0.42 \text{ kg.km}^{-2}$ and found in eight locations (Figure 4).

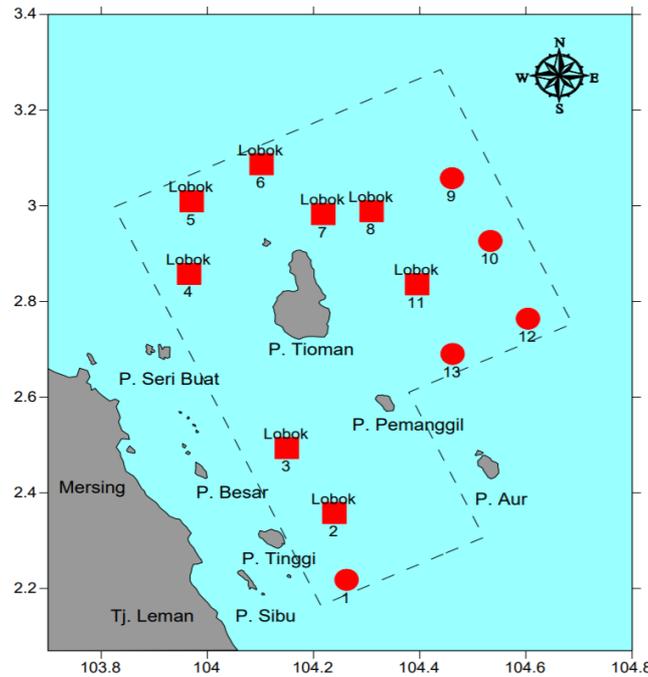


Figure 3: Location of survey stations in the lobster resource survey conducted in the waters surrounding Tioman Island and Tinggi Island on 24-28 October 2018 covering an estimated study area of 6294 kilometer square. The presence of slipper lobster in the catch are indicated with square boxes and labelled “Lobok”.

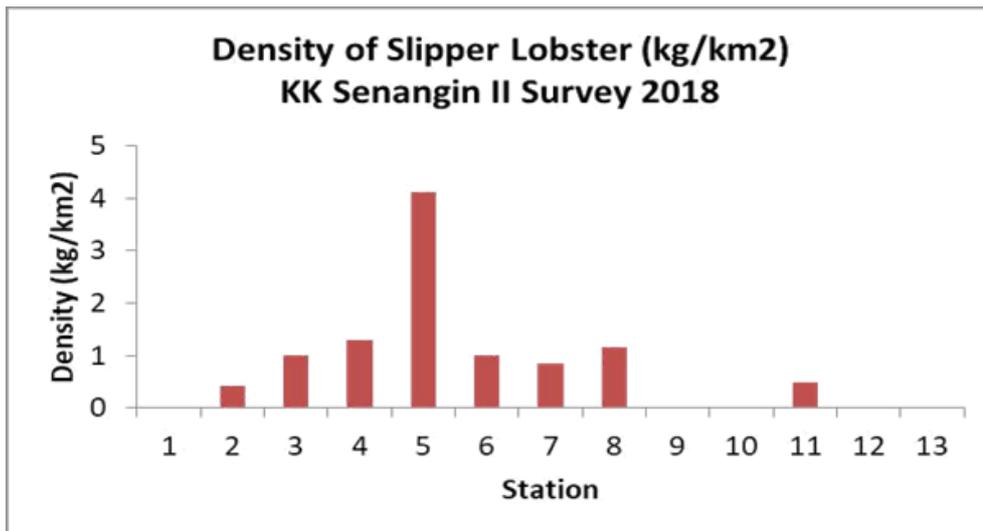


Figure 4: The density of slipper lobster according to stations (kg.km⁻²) in the October 2018 survey. The average density of slipper lobsters from this survey was $1.29 \pm 0.42 \text{ kg.km}^{-2}$

For the year 2019, the lobster resource will be estimated from data collected by Observer-On-Board (OBB) program conducted on commercial bottom trawlers in the study area. This OBB program will be implemented during the Q3 and Q4 period of 2019 and will be carried out by DOFM staff.

(2) Kuala Baram, Sarawak

For quarter 4 of the year 2018, the refugia studies continued on juvenile resources. Tiger prawn juveniles were found in *Sungai Pasu* (Figures 5a and 5b), *Sungai Lutong* (Figures 6a and 6b) and *Sungai Sibuti* (Figures 7a and 7b).



Figure 5a: Sungai Pasu

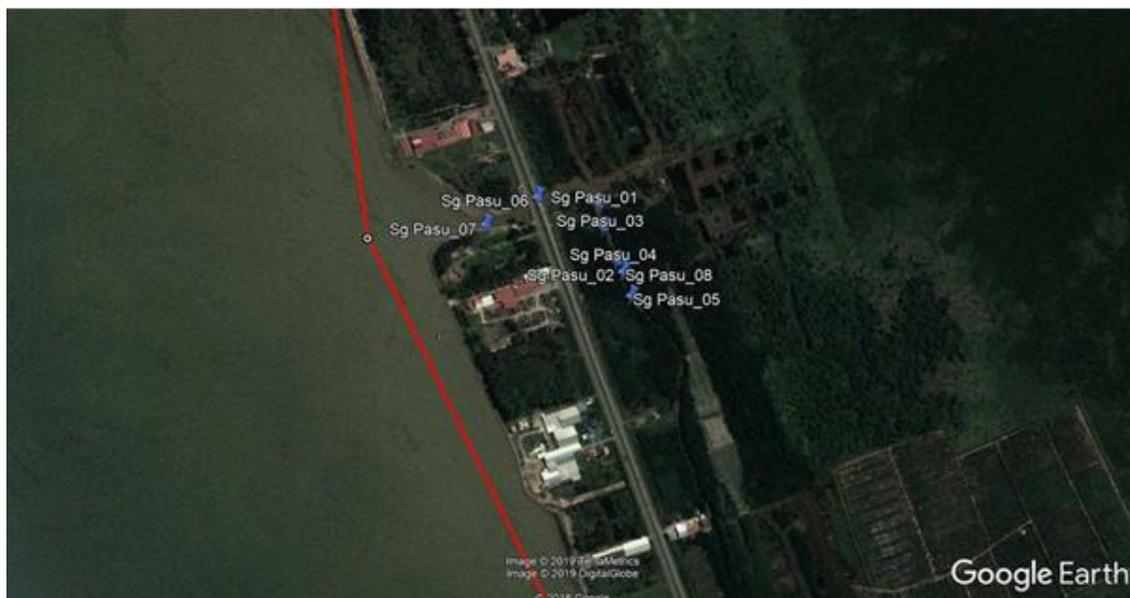


Figure 5b: Google earth map (*Sungai Pasu*)



Figure 6a: Sungai Lutong

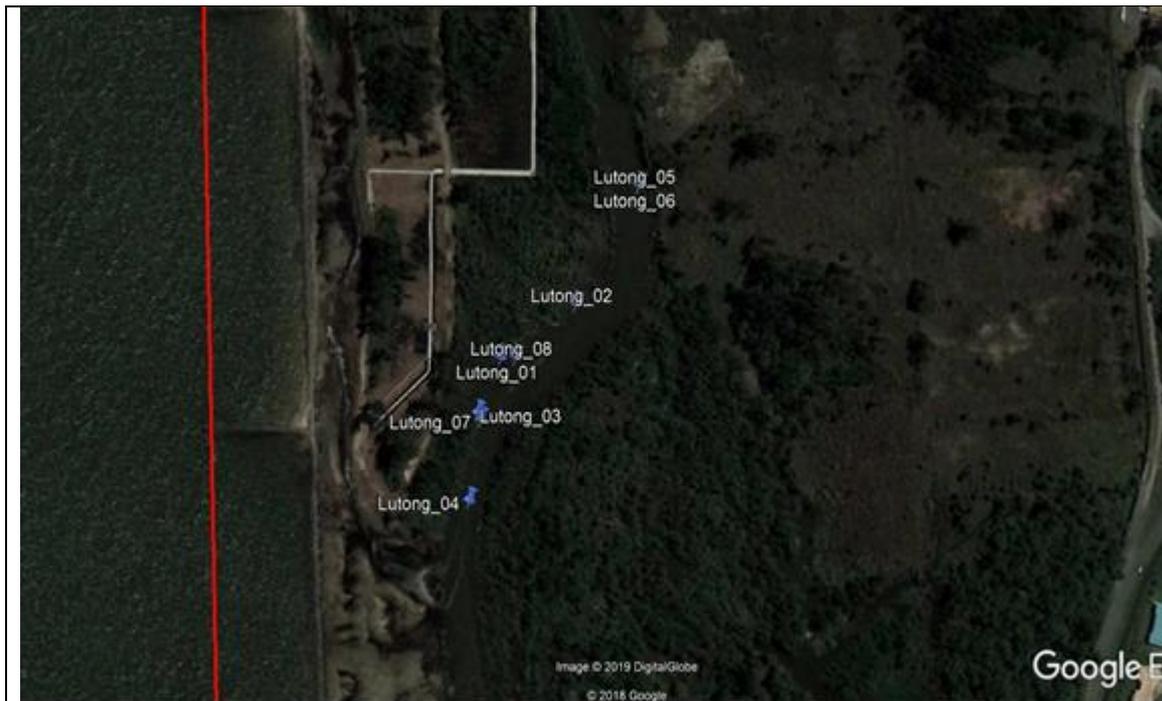


Figure 6b: Google Earth map (*Sungai Lutong*)



Figure 7a: Sungai Sibuti



Figure 7b: Google earth map (*Sungai Sibuti*)

For Quarters 1 and 2 of the year 2019, juvenile resource studies were carried out from March until June in *Sungai Pasu*, *Sungai Lutong* and *Sungai Sibuti*. Concurrently, landings of spawners were also gathered during this study. The study was conducted using local fishing boats and cast nets as sampling gears (Figure 8). The specifications of the cast net are 2 meter perimeter, 1.8 meters in diameter and $\frac{3}{4}$ inch mesh size. Catch per unit effort was estimated based on catches obtained with the number of casting. The results elucidated that the highest CPUE was in Sungai Lutong, with 30 g/cast, followed by Sungai Pasu with CPUE of 9.36 g/cast and Sungai Sibuti with 10.7 g/cast. In terms of length, juvenile tiger prawns ranged from 6.5 cm to 22.5 cm, while body weight ranged from 16 gram to 278 grams (Figure 9)



Figure 8: Google earth map (*Sungai Sibuti*)



Figure 9: Juvenile tiger prawn ranging from 16 to 278 grams

Besides tiger prawns, *Fenneropenaeus merguensis*, *Fenneropenaeus indicus*, *Metapenaeus brevicornis*, *Moolgarda cunnesius* *Carangoides* sp., *Pomadasys kaakan* *Gerres erythrourus* (Kapas *Megalops cyprinoides* *Eubleekeria splendens* *Lutjanus argentimaculatus* bakau), *Thryssa setirostris*, *Chelon subviridis* *Siganus* sp., *Encrasicholina punctifer*, *Raconda russeliana*, *Otolithes ruber*, *Coilia borneensis* and *Kurtus indicus* were also caught (Figure 10).



Figure 10: Some of the species caught together with juvenile tiger prawns

Individual specimens that were landed in Krokop market weighed from 85.2 gram to 184.6 gram and were sold at RM85/kg. The catches was estimated at 70-150 kg from local tiger prawn trawlers.

Sub-component 1.2

Facilitating agreement among stakeholders on the boundaries of fisheries refugia at the (1) Tg. Leman, Johor and (2) Kuala Baram, Sarawak sites

Activity 1.2.1

Conduct consultations (including at-sea) to draft maps of fisheries refugia for priority species

Progress:

The consultations with fishermen in Tanjung Leman were not carried out due to manpower and time constraints.

Consultations in Kuala Baram are scheduled for Quarter 3 2019.

Activity 1.2.4**Secure formal municipal/local government designation of site as fisheries refugia****Progress:**

Meetings with the Sarawak State Planning Authority, Miri Port Authority, Sarawak Forestry Corporation, Sarawak Forestry Department (Figure 11) were conducted twice in 2018 (6th September 2018 and 1st October 2018). The Miri Port Authority (LPM) and Fisheries Research Institute Bintawa presented their plan and findings. The Miri Port Authority informed that the proposed area by the Fisheries Department of Malaysia is also part of the proposed area for deepening or dredging of the estuary to facilitate the entry to, and exit from, the Kuala Baram estuary. Mr. Hardazy Bin Yunus said the dredging process to deepen the Kuala Baram River Estuary would take 2-3 years. This application has yet to be approved by the State Government and Sarawak State Planning Authority will decide on this matter. Further meetings must be held to finalise this.



Figure 11: Meeting with State agencies of Sarawak

Sub-component 1.3

Developing Community-Based Management Plans for the (1) Tg. Leman, Johor and (2) Kuala Baram, Sarawak sites

Activity 1.3.1

Consultations to identify key threats to fisheries *refugia* sites and identify management measures

Progress:

A Refugia Stakeholder Consultation in conjunction with a Resource Awareness Program was held in Tioman Island, Pahang on 9 October 2018 (Figure 12). Representatives from local agencies and local island fishermen attended the program.



Figure 12: Refugia Stakeholder Consultation in conjunction with Resource Awareness Program was held in Tioman Island, Pahang on 9 October 2018

For the period January – June 2019, there were no stakeholder consultations in Tanjung Leman and Kuala Baram due to manpower and time constraints. Consultations will be carried out during the EAFM workshops later this year.

COMPONENT 2:

Improving the management of critical habitats for fish stocks of transboundary significance via national actions to strengthen the enabling environment and knowledge-base for fisheries refugia management in Malaysia

Sub-component 2.1:

Enhancing policy guidance for improved management of the effects of fishing on critical habitats

Activity 2.1.1

Identify and document key threats from fishing and the environment to fish stock and critical habitat linkages

Progress:

The consultations in Tanjung Leman and Kuala Baram were not carried out due to manpower and time constraints. Consultations will be carried out during the EAFM workshops later this year.

Sub-component 2.5:

Enhancing access to information relating to status and trends in fish stocks and their habitats in Malaysia waters of the SCS

Activity 2.5.1

Compile information and data derived from abundance surveys for longer-term management

Progress:

For Tanjung Leman, compilation of information and data from past surveys such as:

- i. Demersal Component of Fisheries Resources Survey in Malaysian Waters 2013-2016, by DoFM
- ii. Prawn Component of the Fisheries Resources Survey in Malaysian Waters 2013-2016, by DoFM
- iii. East Johor Fisheries Resource Survey 2016
- iv. East Johor Fisheries Resource Survey 2017
- v. East Johor-South Pahang Fisheries Resource Survey 2018

For Kuala Baram, compilation of information and data from past surveys such as:

- i. Demersal Component of Fisheries Resources Survey in Malaysian Waters 2013-2016, by DoFM
- ii. Prawn Component of the Fisheries Resources Survey in Malaysian Waters 2013-2016, by DoFM

Activity 2.5.2

Compile information and data derived from surveys on size-frequency of priority species

Progress:

Size-frequency information and data of priority species were derived from the surveys mention in Activity 2.5.1 as well as from monthly land-based surveys.

Activity 2.5.3

Compile information and data on landings of priority species (volume/value, fishing areas and gears)

Progress:

Information and data on landings of priority species by volume/value, fishing areas and gears are extracted from the Department of Fisheries Malaysia Annual Fisheries Statistics.

Activity 2.5.4

Produce annual syntheses reports of new and additional information for national and regional review

Progress:

1. A paper entitled “**Lobster Resource Study in East Johor**” was prepared and presented in the Marine Capture Fisheries Research Symposium, held in RECSAM, Penang, Malaysia on 2-3 Oct 2018.
2. A paper entitled “**Lobster Resources and Fisheries in Sedili, Johor**” was prepared and presented in the Fisheries Research Seminar, held in FRI Batu Maung, Penang, Malaysia on 22-24 January 2019.
3. A presentation entitled “Refugia on tiger prawn (*Penaeus monodon*) in Kuala Baram, Miri, Sarawak” was prepared and delivered in a meeting with stakeholders at Sarawak Marine Fisheries Department, Kuching on 1st October 2018.

Activity 2.5.5

Revise national report on fish stocks and habitats in Malaysia waters of the South China

Progress:

Annual updates on fish stock and habitats in Malaysian waters of the South China Sea are provided in the Annual Fisheries Statistics.

Sub-component 2.6

Improving national-level management and sharing of information and data on fish early life history in Malaysia waters of the SCS

Activity 2.6.1

Prepare a national inventory of fish egg and larvae samples collected from Malaysia waters (both analysed and unanalysed)

Progress:

Currently there is no national inventory of fish egg and larvae samples in Malaysian waters. However, a report on lobster larvae surveys in year 2017 and 2018 have been produced. The results from the year 2018 survey (conducted together with the lobster resource survey on 24-28 October 2018) indicated higher density of spiny lobster larvae at north west of Tioman Island but higher density of slipper lobster larvae at south of Tioman Island (Figure 13).

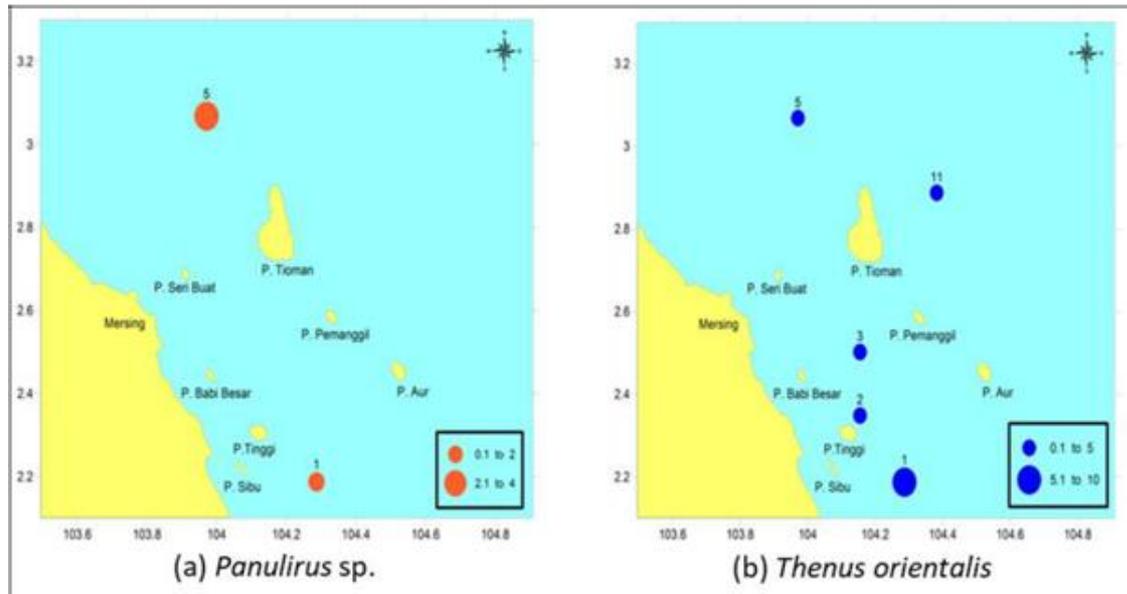


Figure 13: Density (ind./1000m³) of (a) *Panulirus* spp. dan (b) *Thenus orientalis* phyllosoma in the 2018 survey.

Activity 2.6.2

Develop and maintain a national database of fish egg and larval fish distribution and abundance

Progress:

Currently there is no national database of fish egg and larval fish distribution and abundance for Malaysia. However, some information on lobster larvae distribution has been produced as mention in Activity 2.6.1

Activity 2.6.3

Convene an annual one-day workshop to monitor the implementation of national programmes for the processing/analysis of fish egg and larvae samples

Progress:

The workshop was unable to be held as scheduled due to time and manpower constraints. However, some information on lobster larvae distribution has been produced as mention in Activity 2.6.1.

Activity 2.6.4

Prepare an annual status report on fish early life history research for consideration regionally

Progress:

Some information on lobster larvae distribution has been produced as mention in Activity 2.6.1.

Sub-component 2.7

Enhancing access to information relating to the locations and status of coastal habitats and management areas in Malaysia waters of the SCS

Activity 2.7.1

Compile and update information and data in a National Google Earth based GIS on: distribution of habitats; known spawning areas; locations of refugia; MPAs; fisheries management areas; critical habitats for endangered species

Progress:

Data compilation on distribution of habitats; known spawning areas; locations of refugia; MPAs; fisheries management areas; critical habitats for endangered species in progress. A National Google Earth based GIS has not been formulated yet.

COMPONENT 3:

Information Management and Dissemination in support of national-level implementation of the fisheries refugia concept in Malaysia

Sub-component 3.1

Enhancing national uptake of best practices in integrating fisheries management and biodiversity conservation

Activity 3.1.1

Quarterly capture and documentation of best practices in the establishment and operation of fisheries refugia

Progress

No documentation has been made so far.

Activity 3.1.2

Online catalogue of best practices approaches and measures developed and updated each 6 months

Progress

Refugia related information are being compiled for uploading onto DOFM website.

Activity 3.1.3

6 monthly development of communications on best practices for dissemination and syndication

Progress:

No related activity has been carried out yet.

3.2 Sub-component

Improving community acceptance of area based approaches to marine management

Activity 3.2.1

Produce locally appropriate public awareness and outreach materials to promote local social, economic and environmental benefits of fisheries refugia

Progress

The Department of Fisheries Malaysia in collaboration with Radio Televisyen Malaysia (RTM) has produced a 30 minutes documentary about the lobster refugia program at East Johor-South Pahang and the documentary was aired in the *Simfoni Alam* program on the 25th of December 2018 (Figure 14 and Figure 15).



Figure 14: Documentary filming of lobster resource survey onboard of RV Senangin II in October 2018



Figure 15: Documentary filming of lobster larvae study at Sedili Laboratory, Johor in October 2018

For tiger prawns, the documentary entitle *Khazanah Udang Harimau Negara* was aired in the *Simfoni Alam* slot on 4th of December 2018 (Figure 16).



Figure 16: The documentary entitle *Khazanah Udang Harimau Negara* was aired in the *Simfoni Alam* slot on 4 th of December 2018

A Refugia Information Center for tiger prawn in Kuala Baram has been established at the Miri District Fishery Office in January 2019 (Figure 17).



Figure 17: A Refugia Information Center for tiger prawn in Kuala Baram that was established at the Miri District Fishery Office.

Activity 3.2.3

Benchmark and annually track community acceptance of refugia approach as a marine spatial planning tool

Progress

No related activity has been carried out yet for the period being reported here. A socio-economic survey used to track community acceptance of refugia approach was carried out earlier in 2016 and 2018 and has been reported.

3.3 Sub-component

Knowledge generated and experiences from establishing and operating fisheries refugia captured and shared nationally, regionally, and globally

Activity 3.3.1

Establish and operate national web portal for knowledge management on fisheries refugia

Progress

There is no specific web portal for fisheries refugia in Malaysia but there are plans to include the refugia related information in the DOFM website as stated in Activity 3.1.2.

COMPONENT 4:

National coordination for integrated fish stock and critical habitat management in Malaysia

Sub-component 4.1

Strengthened cross-sectoral coordination in the establishment and operation of fisheries refugia in Malaysia

Activity 4.1.2

Establish and convene quarterly meetings of the National Fisheries Refugia Committee (NFRC)

Progress

National Fisheries Refugia Committee was established and quarterly meetings was held in Putrajaya.

Activity 4.1.3

NFRC review and endorsement of quarterly work plans and progress and financial reports, including tracking of continuity of participation of stakeholders

Progress

The National Fisheries Refugia Committee, which is the highest decision-making body for this project, met at the Fisheries Department, Malaysia, Headquarters on 29 May 2019 (Figure 18). The committee comprised of representatives from the Department of Fisheries and other relevant government agencies and academicians who are stakeholders in this project. During the meeting the progress of the project was presented and discussed. The meeting also discussed and endorsed the proposed future work plan of this project. This meeting was chaired by Mr. Bah Piyan Tan, the Deputy Director General of the Department of Fisheries, Malaysia.



Figure 18: The National Fisheries Refugia Committee Meeting conducted at Department of Fisheries Headquarters, Putrajaya on 29 May 2019

Activity 4.1.4

National NFRC inputs to mid-term review and terminal evaluation of national and regional aspects of project

Progress

Sub-component 4.2

Harnessing national scientific and technical expertise and knowledge to inform policy, legal and institutional reforms for fisheries refugia

Activity 4.2.1

Establish and convene quarterly (3 monthly) meetings of the National Technical Working Group

Progress

The National Technical Working Group has been established.

Activity 4.2.2

Provision of technical and scientific inputs to planning of activities in components 1, 2 and 3

Progress

During this reporting period, two National Scientific and Technical Committee meetings were carried out. The first was conducted on 19 October 2018 at the Department of Fisheries Headquarters, Putrajaya (Figure 19), and chaired by Dr. Zainoddin bin Hj. Jamari, the Senior Director of Research. The committee comprised of representatives from the Department of Fisheries, Malaysia, relevant government agencies and academicians.



Figure 19: The National Scientific and Technical Committee meeting at Department of Fisheries Headquarters, Putrajaya on 19 October 2018.

The second meeting was conducted on 25-26 April 2019 at the Waterfront Hotel, Kuching, Sarawak (Figure 20) and chaired by Mr. Hadil bin Rajali, the Deputy Senior Director of Research. As with the previous meeting, the committee members were made up of representatives from the Department of Fisheries, relevant government agencies and academicians.

During this meeting, it was announced that Mr Hadil had been appointed as the new *National Focal Point for Scientific and Technical Committee* and Mr. Richard Rumpet from FRI, Bintawa as the *Alternate National Focal Point for Scientific and Technical Committee*.

The major issues discussed during this meeting were:

- Status of the project which were presented by Ms. Nurridan binti Abdul Han for Kuala Baram and Mr. Ryon Siow for Tanjung Leman, Johor.
- Preparation for the 2nd Project Steering Committee (PSC) Meeting, 4-7 November 2019 in Miri, Sarawak.
- Finalisation of the approved Committee Members, for preparation of appointment letters.
- Budget status and expenditure.



Figure 20: The National Scientific and Technical Committee meeting at Kuching, Sarawak, on 25-26 April 2019

Sub-component 4.3

Catalyzing local community action via establishment and operation of site-based management boards at 2 priority refugia sites

Activity 4.3.2

Establish and convene quarterly meetings of site-based management boards

Progress

No meeting was held so far.

Activity 4.3.3

Preparation of quarterly work plans and progress and financial reports on activities at each site

Progress

Quarterly work plans has been prepared and disseminated to those involved. Progress on workplans was discussed at National Scientific and Technical Committee meeting in Waterfront Hotel, Kuching, Sarawak on 25 to 26 th April 2019.

Financial Report

The sources of funds for the implementation and running of the activities associated with the Fisheries Refugia Project in Malaysia were derived from two main sources, namely national funds (operational expenditures and development funds from the 11th Malaysia Plan) and the SEAFDEC-UN Environment-GEF fund (Table 1). For the year 2017, a total of RM146,000.00 or USD35,235.91 of the national fund (development) was spent on implementing various activities associated with the Fisheries Refugia Project in Malaysia. This sum did not take into account the operational expenditure (which would include the salaries and allowances of the Department of Fisheries Malaysia staff) during the implementation of such activities.

The fund from SEAFDEC-UN Environment-GEF was only received in the year 2018 and the first allocation of USD27,230.00 was transferred to SEAFDEC/MFRDMD account in March 2018. With the available fund, the activities for year 1 work plan were implemented. A second remittance of USD15,131.66 was transferred to SEAFDEC/MFRDMD account for Q1 year 2 (2019). The details of the expenditure can be referred to in Table 2. The balance from the SEAFDEC-UN Environment-GEF fund until 30th April 2019 was USD5,382.

Table 1: Source of funds for the running of the Fisheries Refugia Project in Malaysia for the year 2017-2018

Source of Fund	Year	Amount (USD)
National (Development Fund)	2017	35,235.91
National (Development Fund)	2018	82,056.23
National (Development Fund)	2019	105,475.00
SEAFDEC-UN Environment-GEF	2018	27,230.00
SEAFDEC-UN Environment-GEF (1st Quarter)	2019	15,131.66

Note:

Development Fund derived from 11th Malaysia Plan (which did not include Operational Expenditure) Q1 – 1st remittance from regional SEAFDEC-UN Environment-GEF funding

Table 2: Project statement of allocation, expenditure and balance from January 2018 to April 2019 (SEAFDEC-UN Environment-GEF fund)

South China Sea Fisheries Refugia Initiative
Project Statement of Allocation, Expenditure and Balance from January 2018 to 30 April 2019

TOTAL ALLOCATION USD 250,000.00
1ST REMITTANCE USD 27,230.00 / RM 104,835.50
2ND REMITTANCE USD 15,131.66 / RM 61,585.86

Code	Description	Budget Allocation (USD)	Actual Expense (USD)	Balance (USD)
10	PROJECT PERSONNEL COMPONENT			
1100	Project Personnel			
1101	Appointment of project manager	5,221	4,675	546
1199	Sub total	5,221	4,675	546
1200	Consultants	0	0	0
1201	Literature review and data collection	240	0	240
1202	Analysis of larvae sample from East Johor	1,703	1,309	394
1299	Sub total	1,943	1,309	634
1600	Travel on official business	0	0	0
1601	Site based survey and reconnaissance for socio-economic study	2,849	946	1,903
1608	Daily collection of lobster & tiger prawns landing data Sedili Pengerang Mersing Rompin Kuala Baram	18,757	14,177	4,580
1699	Sub total	21,606	15,123	6,483
	COMPONENT TOTAL	28,770	21,107	7,664
20	SUB-CONTRACT COMPONENT			
	COMPONENT TOTAL	0	0	0
30	TRAINING COMPONENT			
3200	Group training			
3201	Workshop on past lobster survey data on lobster resources in johor waters & Tiger prawns survey in sarawak waters	3,293	1,277	2,016
3202	Consultation workshop with the traditional gears fishermen in Rompin	0	0	0
3203	National Fisheries Refugia Committee Meeting	2,459	2,727	-268
3204	1 meeting in Johor, Pahang and Sarawak	2,256	519	1,737
3299	Sub total	8,008	4,524	3,485
	COMPONENT TOTAL	8,008	4,524	3,485
40	EQUIPMENT & PREMISES COMPONENT			
4300	Premises	0	0	0
4301	Establish 1 information center for refugia site	4,800	11,350	-6,550
4399	Sub total	4,800	11,350	-6,550
	COMPONENT TOTAL	4,800	11,350	-6,550
50	MISCELLANEOUS COMPONENT			
5200	Reporting costs			
	Printing costs	783	0	783
	COMPONENT TOTAL	783	0	783
TOTAL		42,361	36,980	5,382