

INTERNATIONAL WATERS EXPERIENCE NOTES

Fisheries Refugia for Mud Spiny Lobster at Tanjung Leman, Johor: Stakeholders Engagement



Abstract:

A two day stakeholders engagement workshop was held on 28-29 September 2022 at Desaru, Johor. The workshop aimed to obtain opinions and feedback from major stakeholders of the fisheries refugium. The key stakeholders comprise government officials, fishermen, wholesalers, retailers, and restaurant operators. The workshop discusses three fundamental aspects i.e. proposal to protect lobster stocks within the refugia, concerns of the stakeholders on the fisheries refugium, and implementation strategies. Among the stakeholders, wholesalers, retailers, and restaurant operators unanimously support no catch of juvenile and berried female lobsters. Instead, they receive the refugium proposal as it contributes positively to their business sustainability. In addition, the market preferred bigger size lobster (>200 g; carapace length >6cm). They purchased juvenile lobster to support the fishermen's livelihood and a long-term business relationship. Compared to the secondary players in the supply chain, there are mixed responses from the fishermen. The establishment of the lobster refugium will impact their incomes. Nevertheless, the fishermen understand the need to conserve the lobster stock. The workshop's output has indicated that manipulating the lobster demand chain is the bridgehead for successfully implementing the Lobster refugium in Johor. Based on the inputs, the lobster refugium could be implemented in a three tier approach. Firstly, public awareness and campaigns to conserve lobster stock should be the first mover to manipulate the demand chain. Secondly, establishing a lobster council to regulate the price range of lobster. The council has two fundamental functions: controlling the lobster market price and ensuring fishermen are well compensated; monitoring the healthy growth of the value chain (supply and demand). Finally, establishing fisheries regulations to ban catches of juvenile and berried female lobster and a closed season of the sensitive area of the lobster refugia from December to February in the subsequent year. It is important to note that the performance of the lobster refugium shall be monitored regularly by measuring the size and landing of the lobster, as well as watching the lobster puerulus at strategic location.

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PROJECT DESCRIPTION

The Department of Fisheries Malaysia has endorsed fisheries refugia to sustain the lobster stock to protect the livelihood of the fishers community in the area. Considering the current fishing practice and the local fishermen's social and economic status, the department has outlined four fundamentals approaches to sustain the lobster stock in the area. Firstly, prohibit juvenile lobster catch with a carapace length of less than 6cm or approximately less than 150g. Secondly, ban berried females lobster catch; and, Thirdly, declared off-catch season at the sensitive area from December to February of the subsequent year. Lastly, artificial lobster reefs were proposed to harbour adult lobster in the area. These fundamental protections would ensure the sustainability of the lobster resources in the area.

The objectives of the stakeholder's engagement workshop are:

1. To join forces among stakeholders to develop lobster fisheries in Johor
2. To collect feedback and information from various stakeholders in the lobster refugium Johor
3. To promote awareness of sustainable lobster fisheries in the refugium

THE EXPERIENCE

- **Issue**

The critical success factor for implementing fisheries refugium is community engagement. A stakeholder engagement workshop was held on 28-29 September 2022 at Desaru, Johor. The workshop served as a platform to exchange ideas and opinions to sustain lobster fisheries in the area. Besides, the inputs and concerns of stakeholders shall be addressed when executing the refugium management plan.

- **Addressing the Issue**

A stakeholders engagement workshop was held at Lotus Desaru Beach and SPA resort on 28-29th September 2022. The workshop invited government officials, fishermen, retailers, wholesalers, and restaurant operators, the key stakeholders of the lobster refugia. University lecturers and consultants were appointed to facilitate the discussion.

The workshop began with a get-together session in the resort. During the get-together session, the researchers explained the situation of lobster stock in Johor, the biology, and the challenges in sustainable lobster fisheries. The lecture was followed by a group discussion guided by a questionnaire and interview to attain the concerns and opinions of the stakeholders.

The questionnaire is specific towards the following aspects:

1. Price/ Market rate for various sizes of lobster
2. Fishing technique and its efficacy
3. Agreement to release juvenile lobster
4. Agreement to release berried female
5. Interest to involve in fattening juvenile lobster
6. Interest in the premium seafood market

7. Steps to enhance lobster refugium

It is important to note that the survey was not a demographic survey but a targeted exercise to gain feedback on the lobster refugia. The get-together session ended with the presentation on the refugium proposal and the way forwards for sustainable lobster fisheries in the area. The second day was field verification and interaction with stakeholders who could not be present on the first day. In addition, the participants were trained to use the lobster caliper to identify juvenile lobsters. Each participant was provided a prototype to encourage them to start paying attention to the conservation program

RESULTS AND LEARNING

Based on the feedback and information gathered during the stakeholders' engagement, the following findings were reported:

1. Price/ Market rate for various sizes of lobster

The market rate for juvenile lobster (<100 g) ranged from RM60 – 95 wholesale to RM100 – 130 for retail, while the adult lobster (>200g) ranged from 80 to RM140, and for those bigger size lobster (>400 g), the price can exceed RM220 to RM550 depends on the size. There is no difference price of the eggs-berried females. The different price ranges of the juvenile and adult lobster indicated that adult lobster catches are more lucrative than juvenile lobster, and manipulating the value chain, could potentially drive the fishermen to release juvenile lobster back into the sea. After all, the market prefers adult lobster to juvenile lobster, although one of the restaurant operators reported the increasing trend of consuming "baby" lobster by foreign tourists. Campaign and awareness programs shall be targeted at consumers to support sustainable fisheries.

2. Fishing technique and its efficacy

Lobster trap is the predominant gear targeting lobster in the area. This fishing technique enables the effort to release juvenile and berried females. Drift net is not targeting lobster, yet lobster was caught and often recorded mortality. Nonetheless, no catch of juveniles and berried females applied on all gears. Therefore, the fishermen must release those juvenile and berried females, even though they are found dead.

3. Agreement to release juvenile lobster

Based on the survey, all the fishermen agreed to release juveniles and berried females except one particular individual. Nonetheless, during the verbal interview, many expressed serious concerns about releasing the juvenile and berried females as it would impact their incomes. Two approaches can address the concerns. Firstly, establishing a lobster council that regulates and monitors the supply and demand chains can be used as one of the precursors for market price. The council will manipulate the demand chain toward adult lobster. The other approach is establishing fisheries regulation and, subsequently, strict enforcement

4. Agreement to release berried female

All fishermen agreed to release the berried female. The willingness to release eggs-berried female lobsters is based on two key factors: i.e. Fishermen are aware of the need to release the females for spawning, and berried females are seldom encountered.

5. Interest to involve in fattening juvenile lobster

All the fishermen are interested in fattening juvenile lobsters, but most lack facilities and knowledge of the fattening process. In reality, they do not practice fattening juvenile lobster. However, if the Department of Fisheries plans to engage the fishermen for fattening juvenile lobsters, more resources and training shall be allocated to the program, and mixed success is to be expected.

6. Interest in the premium seafood market

All the stakeholders demonstrated interest in being involved in the premium seafood market. However, the state of readiness for the fishermen is low. As a result, restaurant operators and wholesalers are more ready to be involved in the premium seafood market. Therefore, government agencies should encourage restaurant operators and wholesalers to invest into the premium seafood market, where sustainable catch is one of the criteria for the premium market. By promoting the premium seafood market, the harvesting pressure on the juvenile lobster could be reduced, as the demand chain has been driven to the adult lobsters.

7. Steps to enhance lobster refugium

The participants have identified artificial reefs as the essential measures to enrich lobster stock in the area. Nonetheless, they express concerns about managing and monitoring the artificial reefs. The other suggestion from the fishing community is to register those unlicensed fishers who may threaten the sustainable lobster fisheries in the area

REPLICATION

The implementation of stakeholder engagement needs to involve all stakeholders related to refugia activities for the selected species and related environmental ecosystems. This is due to different political conditions, multi-species fisheries, the use of multi-gear and downstream operators have different interests towards a species that has been selected. The presence of all these stakeholders will facilitate the delivery of information and be able to identify all the issues raised by them.

SIGNIFICANCE

Since this is the first time that Malaysia will implement a refugia program involving 2 species, namely lobster and tiger prawn, all experience in carrying out the activity until successful needs to be recorded to ensure that this method can be used for the implementation of refugia activities for other species. Also, the same method can be used by any country bordering Malaysia that will carry out refugia activities on the same species.

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KEYWORDS

- ◆ South China Sea
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- ◆ Mud spiny lobster
- ◆ Malaysia
- ◆ Engagement