



**The Fifteenth (15<sup>th</sup>) Meeting of The ASEAN Seaweed Industry Club (ASIC)  
on ASEAN Cooperation in Agriculture And Forest Products Promotion  
Scheme**

**10 - 11 September 2025  
Tawau, Sabah,  
Malaysia**



# Seaweed Cultivation in Sabah, Malaysia:1970-2024

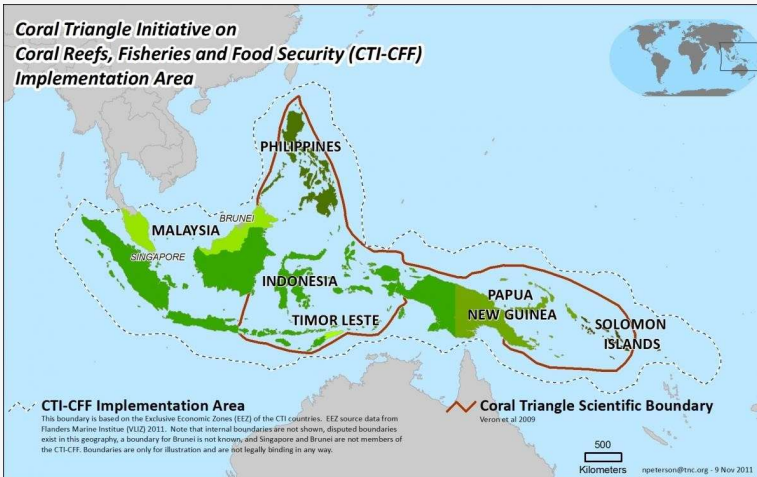
Department of Fisheries Sabah, MALAYSIA

10 – 11 September 2025



## content

- **Overview**
- **History of Seaweed Culture**
- **Current Status**
- **Trade of Seaweed**
- **Issue, Challenges & Threats**
- **Way forward Seaweed**
- **Conclusion**



## Overview of Seaweed in Malaysia

- Malaysia located in the Coral Triangle Area which rich in marine biodiversity
  - Coastline 1600km, Coral cover > 75% in Sabah, Mangrove > 65% in Sabah
- Seaweed found in this area a well adapted to tropical climate
  - red seaweed (Rhodophyta)
  - brown seaweed (Phaeophyceae)
  - green seaweed (Chlorophyta)
- Red seaweed eucheumatoid - *Kappaphycus* & *Eucheuma* are two common species found and farmed in Malaysia for Carrageenan
- Most active farming area are located on the East Coast of Sabah, Malaysia
- Dried seaweed products are exported aboard mainly to Republic of China and Europe.



# History of the seaweed farming in Malaysia

1977

1990

2000

2010

2020

2030

## Phase 1



- Begins 1977-78 (Philippines 1971, Indonesia 1975)
- Individual farming
- Small scale dried seaweed production
- Involvement by the Department of Fisheries

## Phase 2



- Commercial approach
- Private sectors investment.
- Support by Government
- Poverty eradication program.

## Phase 3



- SME (Traders, ATC and SRC)
- High Impact Project (HIP).
- Creating Seaweed Aquaculture Zone area (AIZ)
- Strengthening R&D.

## Phase 4



- Introducing new Technology & Innovation
- Private sector involvement
- Good practices & management
- New commodity on agri-foods
- High value products

## Phase 5



### Seaweed National Action Plan

- Improve productivity & quality production
- Down stream activity (IAT)
- Investment & commercialization
- Marketing

# Main species



*Kappaphycus alvarezii*



*Kappaphycus stratium*



*Euchema denticulatum*

## Variety of seaweed



Sweet love



Green flower



Red durian



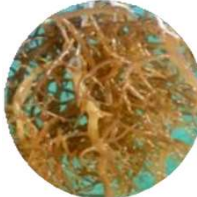
Black durian



Yellow durian



Green



Brown



Aring-aring



Crocodile



Worm



Giant



*Euchema denticulatum*

## other potential species



*Caulerpa*



*Gracillaria*



*Sargassum*

photo source : UMS

# Seaweed Farming Area - Malaysia



- More than 95 % seaweed farm located in Sabah (East Coast)
- Seaweed in Peninsular Malaysia mostly small scale (*Caulerpa* spp.)

# Current status of Seaweed in Malaysia



Main species: ***Kappaphycus*** & ***Euchema***

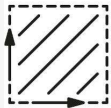
Other species : *Caulerpa*, *Gracilaria* & *Ulva*



**220,246** MT / **22,025** MT Dried (2024)



MYR **70.48** Million @ USD **16.7** Million



**4464** hectare



**1554** farmers



Seaweed contribute approximately **56 %** national aquaculture production in **2022**

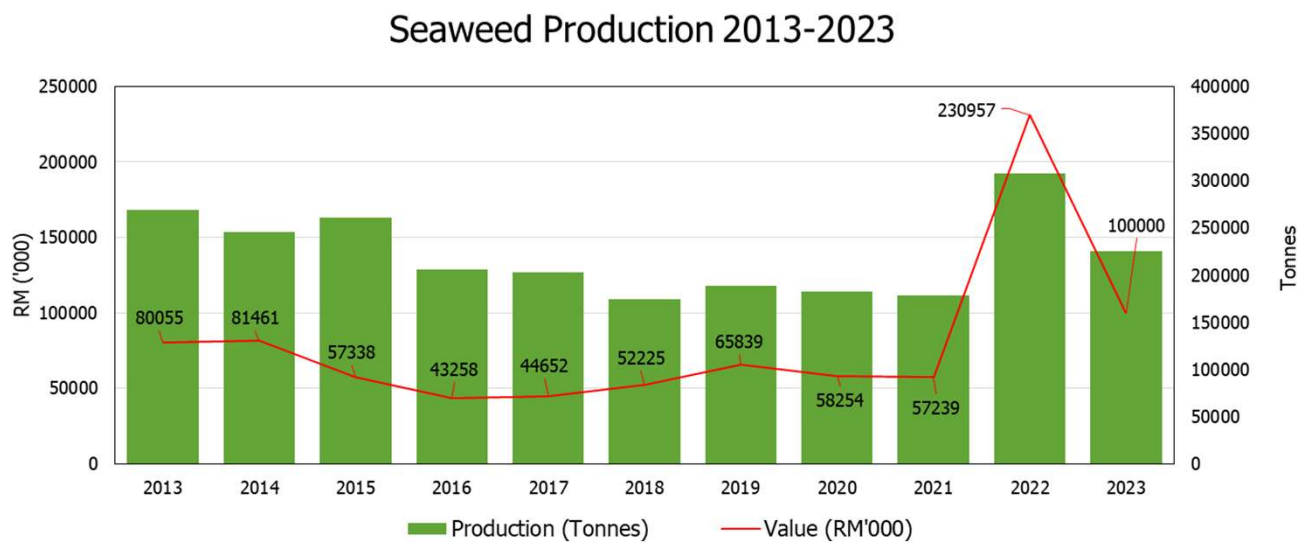


# **Current Seaweed Project in Sabah**

## **List of Project**

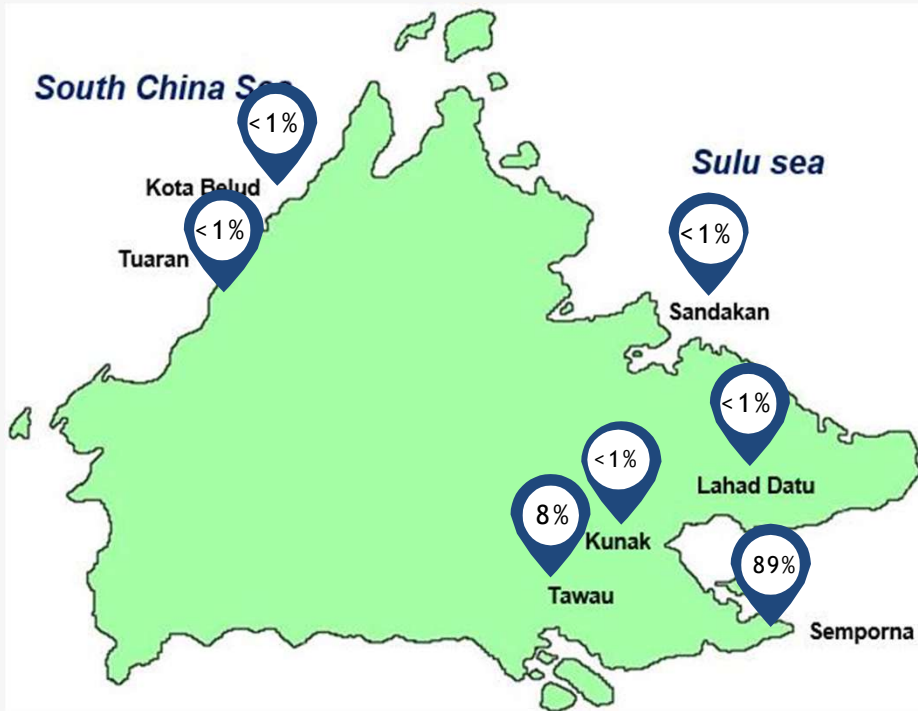
- a. Mini Estate (EPP3) - 9 private limited company**
- b. Cluster (EPP3) – 6 co-operative company**
- c. Nucleus (EPP3) – 565 farmers (individual)**
  - i. Breakdown – 2021 (165); 2022 (200): 2023 (200)**
- d. National Seaweed Empowerment Project– 5 communities (Kota Belud, Lahad Datu, Tawau, Kunak & Semporna)**

# Seaweed production 2013-2023 (Malaysia)



Source: Department of Fisheries, Sabah

# Current status of Seaweed in Sabah



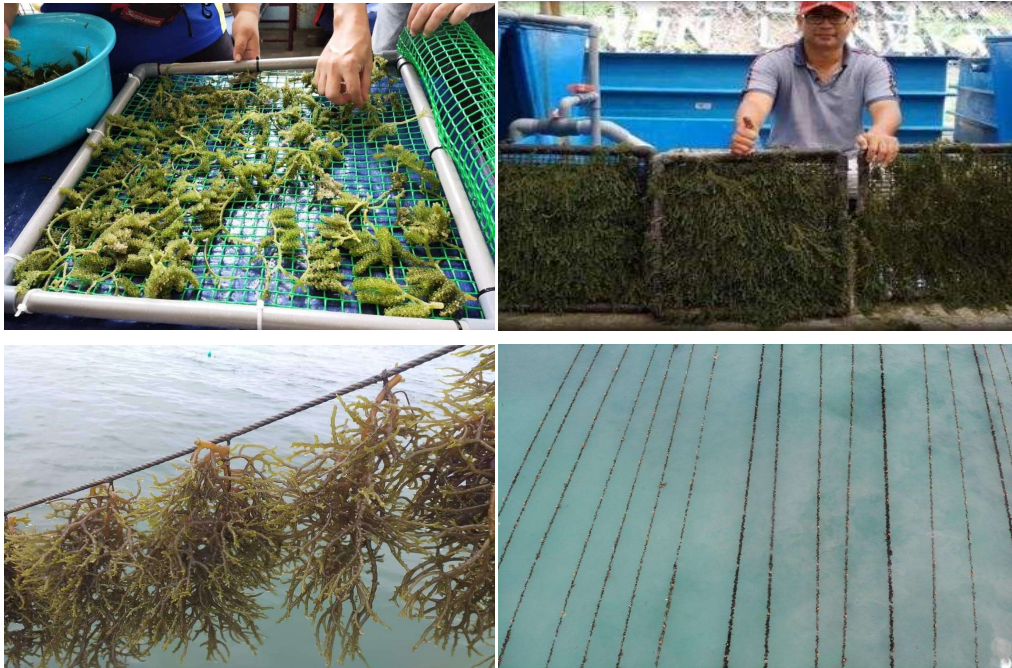
- **97%** seaweed production from East Coast of Sabah
  - Semporna
  - Tawau
  - Lahad Datu
  - Kunak



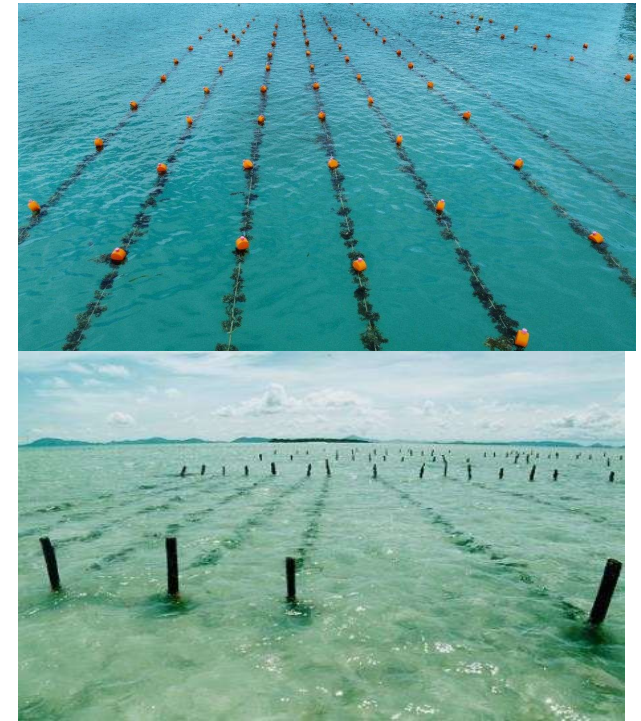
# Current status of Seaweed in Sabah

## Culture Method

- ❖ *Kappaphycus* spp & *Eucheuma* spp - longline, fixed off-bottom/pole, raft (sea)
- ❖ *Caulerpa* spp - tank & pond (land)



Photos: Department of Fisheries, Malaysia



Photos: Department of Fisheries, Sabah

# Seaweed trade in Malaysia

## Domestic

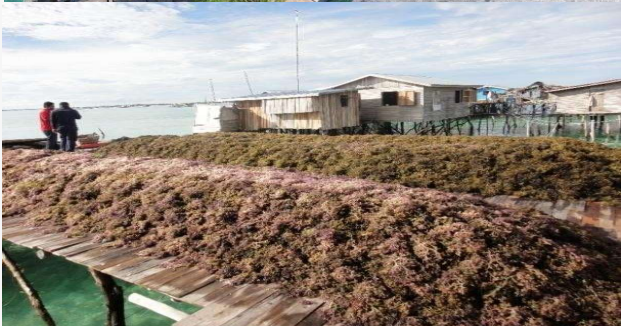
- Dried seaweed
- Fresh
  - direct consumption – *Kappa*, *Gracillaria*, *Caulerpa*

## Export

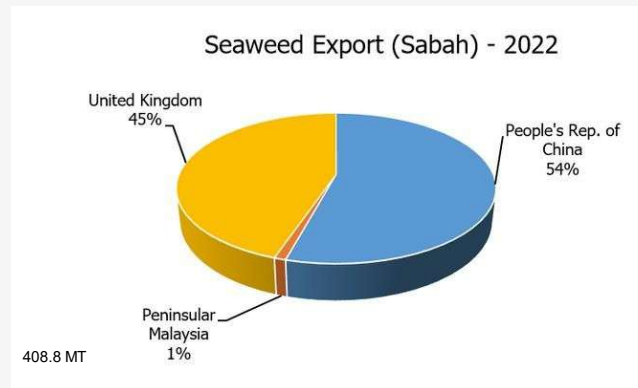
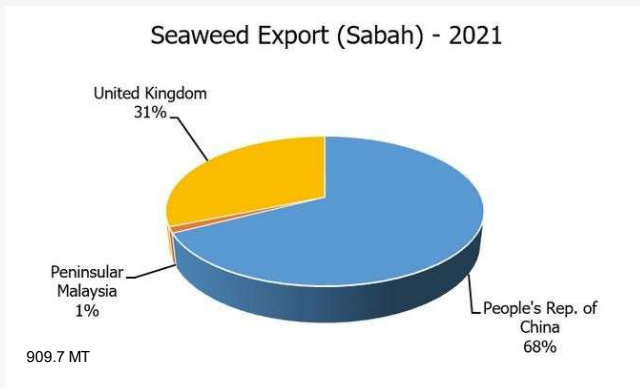
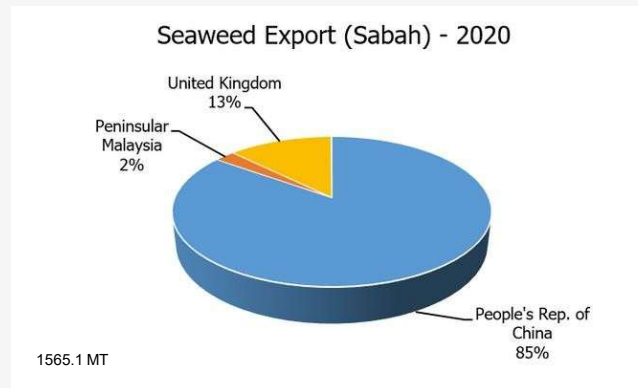
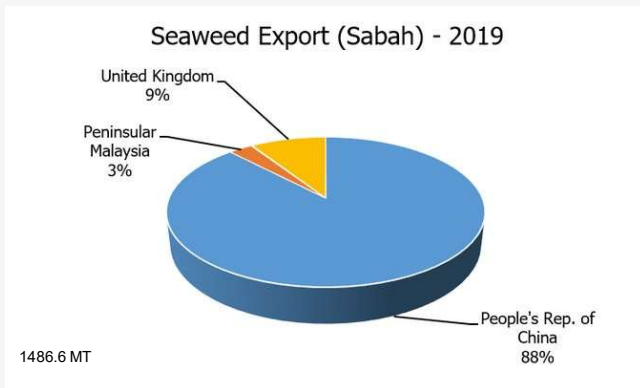
- Dried seaweed
- ATC chip (Alkaline Treatment Carragenan)
- WDS (Water Dissolved Seaweed)
- Powder form – UK (additive component)

## others

- processed product
- canned product
- Toiletries
- Cosmetics
- sold fresh in the market/tamu's



# Seaweed trade in Malaysia



Source data: Royal Custom Department of Malaysia

## China Market

Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (Euclideanoid)

## U.K Market

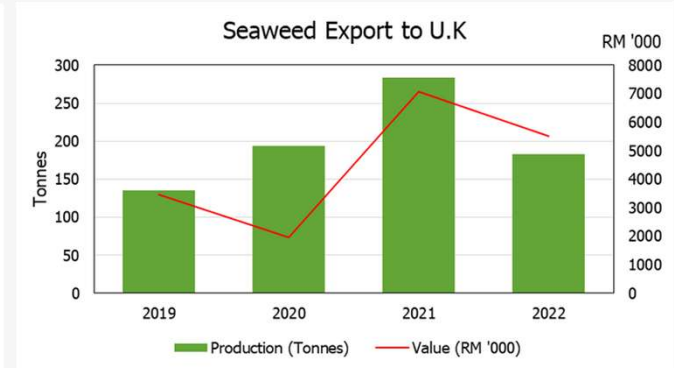
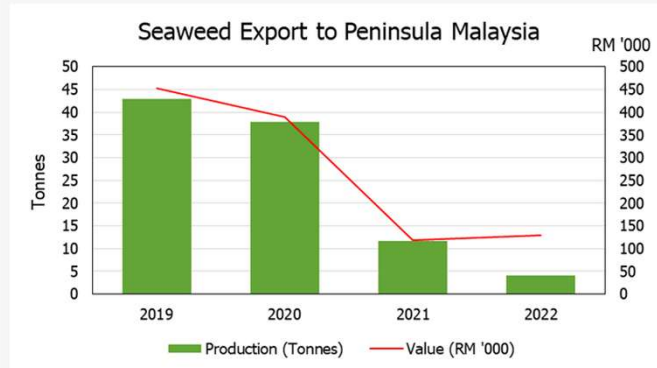
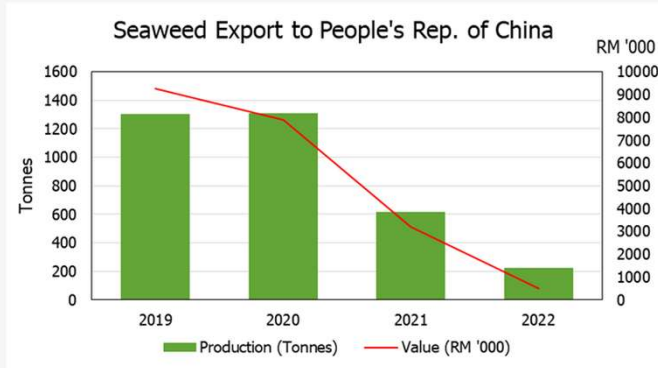
- Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (Euclideanoid)
- ATC, WDC & Powder

## Peninsular Malaysia

- Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (Euclideanoid)
- Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (other than Euclideanoid)
- Other Seaweeds and other algae other than of a kind used in Pharmacy

# Trade seaweed in Malaysia

## Export



### Other country

- Japan
- South Korea
- Hongkong

source data: Royal Custom Department of Malaysia

# Seaweed Processing Factory

- Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (*Eucheumatoid*)
- Seaweed & Other Algae: Fit for human consumption (Dried but not ground) (*Eucheumatoid*)
- ATC, WDC & Powder (U.K Market)



Company: TeeJoy Marine / Semporna Sea Product Enterprise

# Issue, Challenges & Threats

## Issues

- Seedlings
- Competitive area
- Inputs & materials price always increased
- Dry seaweed quality
- Lack of infrastructure
- Lack of local farmers/workers

## Challenges

- Price fluctuation
- Natural Predators
- Depend on Govt. Assistant
- Lack of interest by locals (youths)
- Facility for collecting Centre

## Threats

- Genetic seaweed quality
- Dependent on foreign Labor
- Security
- Trade Barrier
- Price competition
- Diseases
- Natural disasters

# Predator, Pest and Diseases

- Predator - turtle & Rabbitfish (siganids)
- Pest & Disease - ice-ice, epiphyte
- Climate change - sea temperature, extreme monsoon





# Ring Netting



# Way forward Seaweed industry in Malaysia



## Down stream/processing

- encouraging processing activity



## Research & Development

- new variety/species
- new technology
- innovation (EFL/Floats/etc)
- IMTA



## Regional Development

- Under BIMP-EAGA initiatives, focus on small scales seaweed farmers to intensify the production



## Expansion

- new location/area



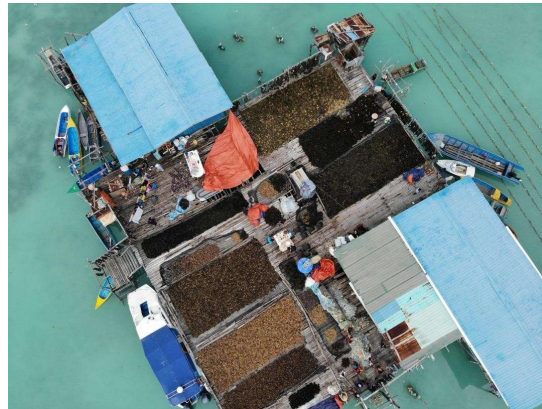
## GAP & Standards

- Certification (myGAP)
- MS2467:2012 Seaweed Cultivation - Code of Practice
- MS2528:2013 Dried Seaweed from Carrageenophytes - Specification
- Draft MS: Semi Refined Carrageenan - Food Grade Specification



# **Seaweed Farming Photos**

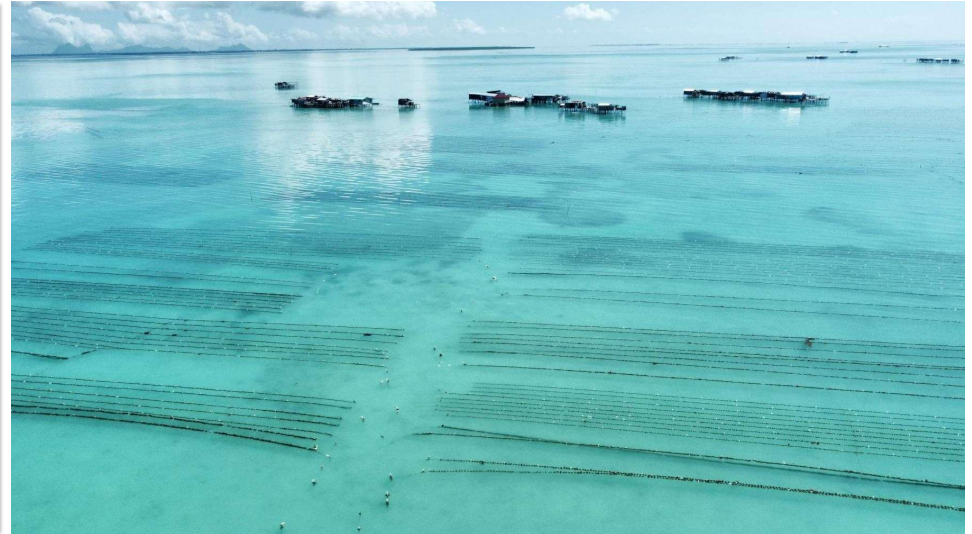
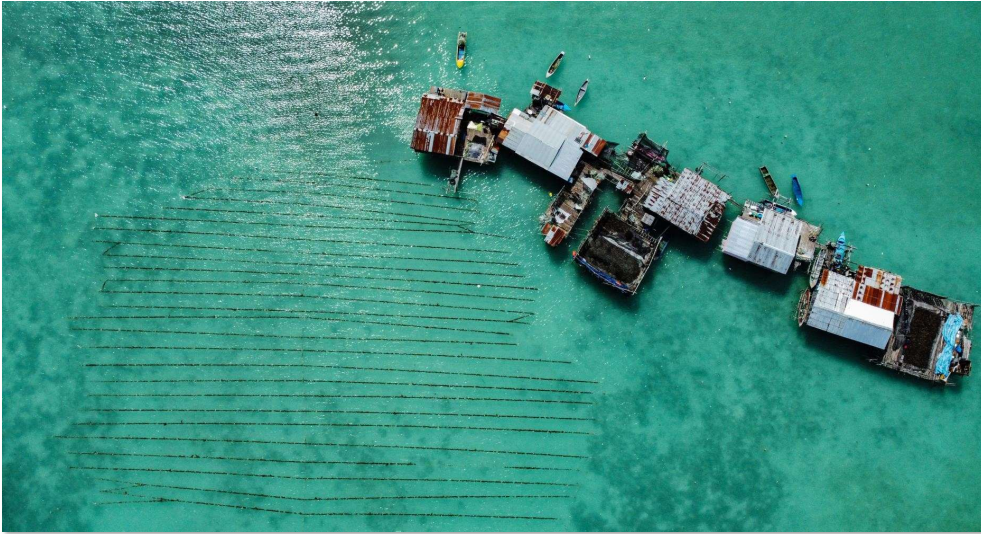
# Seaweed Farming



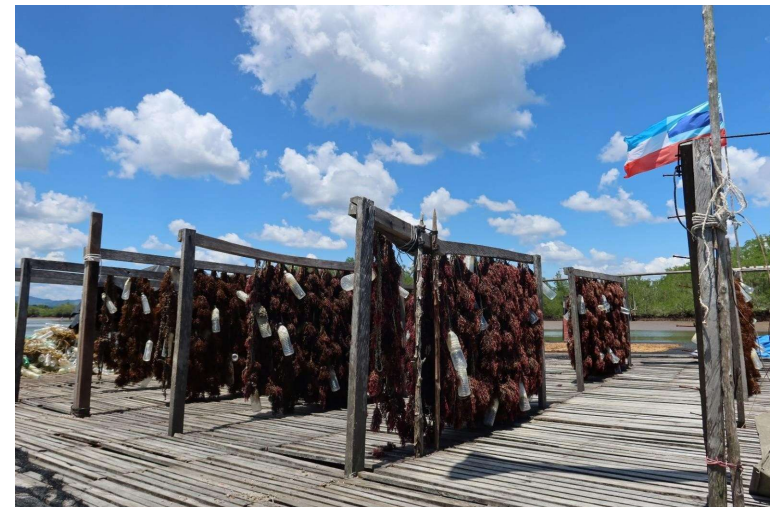
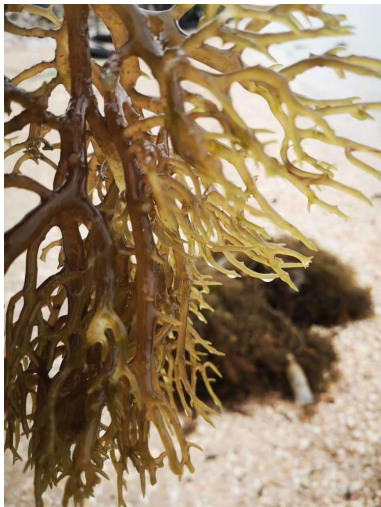
# Seaweed Farming Activities in Semporna



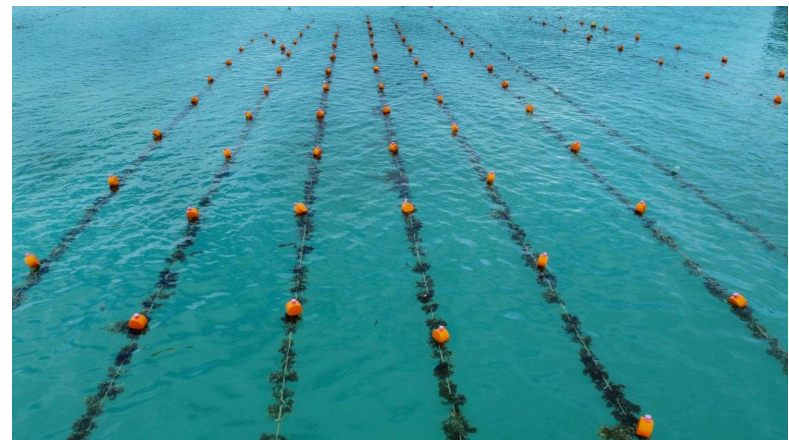
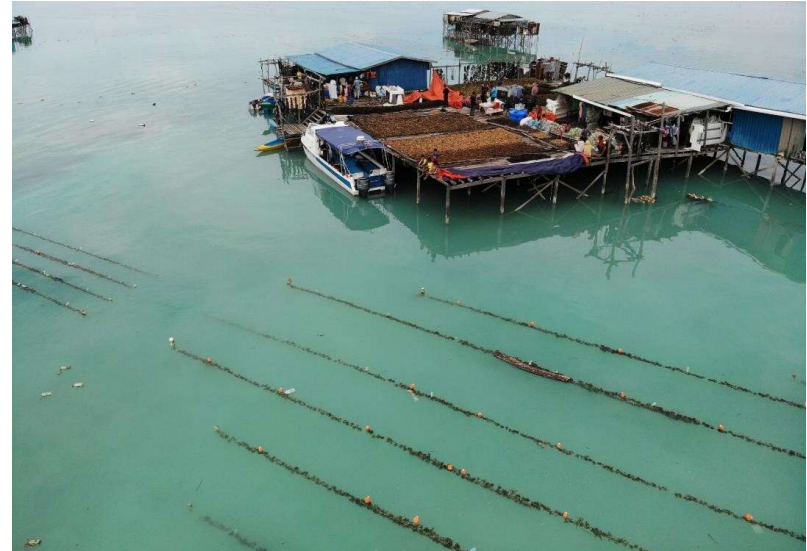
## Seaweed Farm in Sangaban, Semporna & Madai, Kunak.



## Seaweed Farm in Karindingan, Semporna & Merotai, Tawau



# Seaweed Farm in Sangaban, Semporna



# Seaweed Farming Activities in Semporna



## Conclusion

- ❖ In **MALAYSIA**, Seaweed is an important commodity contributing to **aquaculture production** and, as well as to **increase the livelihood** of the **farmers** and **fishermen** resides along the coastal area and surrounding the island.
- ❖ A good coordination and collaboration in between **Policy makers, producers, as well as academies / researchers, and trader** to ensure the competitiveness and sustainability of seaweed aquaculture development for future





# Thank You | Terima Kasih

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