



PROTECTING DUGONGS  
CONSERVING SEAGRASS  
CHANGE FOR COMMUNITIES



# COUNTRY PRESENTATION: MALAYSIA

***SYED ABDULLAH SYED ABDUL KADIR  
NATIONAL FOCAL POINT***

INCEPTION WORKSHOP  
THE GEF DUGONG AND SEAGRASS CONSERVATION PROJECT  
20-21 October 2015  
Colombo, Sri Lanka

# INTRODUCTION

- Income group (according to World Bank) – **(upper middle )**
- Human population - **~24.5 million**
- **2,068 km** of coastline
- Rural population below the poverty line – **3.4%**
- No. of fishermen (2014) – **96,232**
- **2<sup>nd</sup> largest** palm oil producer in the world
- **2<sup>nd</sup> largest** liquid natural gas exporter in the world
- Home of world's **oldest virgin rainforest**
- In Peninsular Malaysia dugongs **only** in the southern state of **Johor**
- Dugongs found mostly around **Sibu and Tinggi Islands** and adjacent waters.
- In Sabah Dugong mainly found in Mantanani , Bangi and Mengalum Islands.
- In Sarawak Dugongs found mostly in Lawas waters of Brunei Bay .
- **Malaysia project will focus on two sites (i) Sibu and Tinggi Islands and (ii) Lawas waters of Sarawak**



# INTRODUCTION

## Lawas Waters of Sarawak

- A number of studies had been conducted in Lawas waters and participated by several party such as SARAWAK FORESTRY Corporation (SFCSB), Forest Department Sarawak (FDS), Universiti Malaysia Sabah (UMS), Universiti of Malaya (UM) and Universiti Malaysia Terengganu (UMT). They have recorded numerous Dugong sighting activity and the presence of high diversity of seagrass species along its coastline and in coastal waters.
- Aerial sighting surveys were conducted in the coastal waters of Sarawak in year 2001, 2007, and 2008. During each of the surveys, dugongs were observed in the Brunei Bay and Lawas waters and these confirmed the existence of a viable dugong population in the area. In addition, green and hawksbill turtles were also presence during the observation.



# INTRODUCTION

- The availability of the dugongs' preferred food; meadows of *Halophila* and *Halodule* seagrasses were found to be abundant in the area (Bali,2005; Bujang *et al.*, 2006; Ahmad-Kamil et al., 2010a; 2010b; Nadzari et al., 2010). Feeding trails of dugong on seagrass beds have been regularly found during seagrass monitoring conducted periodically in the area. All these evidences suggest that Lawas waters are very crucial nursery, feeding and transient ground for dugongs.
- During the UNEP/CMS Dugong workshop for Southeast Asian region in 2010, the second Minister of Resource Planning and Environment pledged his support for Kuala Lawas become a marine protected area (MPA) for conserving the dugong and seagrass and urged the management authority to come up with comprehensive biological assesment and justification.



# CONSERVATION FACTS

- 1) Law and policies-regulations- NPOA Dugong, NBSAP
- 2) Specific law and policies on seagrass conservation is not in place
- 3) 12 Mega-biodiversity, Coral triangle, SSME, BOBLME
- 4) International obligation- CBD, RAMSAR, CITES, UNESCO,
- 5) MPA- 1.4%
- 6) CBD - Aichi Target no 11 MPA -10%



# DUGONG AND SEAGRASS IN MALAYSIA

## KNOWN

DUGONG	SEAGRASS
Distribution for dugong	Distribution for seagrass areas
General Threats- not quantified.	General Threats- not quantified.
No hunting culture.	Diversity, abundance.
General ecology-distribution, crude abundance, habitat use- social structure and group dynamic in Sibu-Tinggi, Johor, vocalizing behavior.	General ecology.
LEK and community perception towards seagrass, dugong conservation and MPA.	

# DUGONG AND SEAGRASS IN MALAYSIA

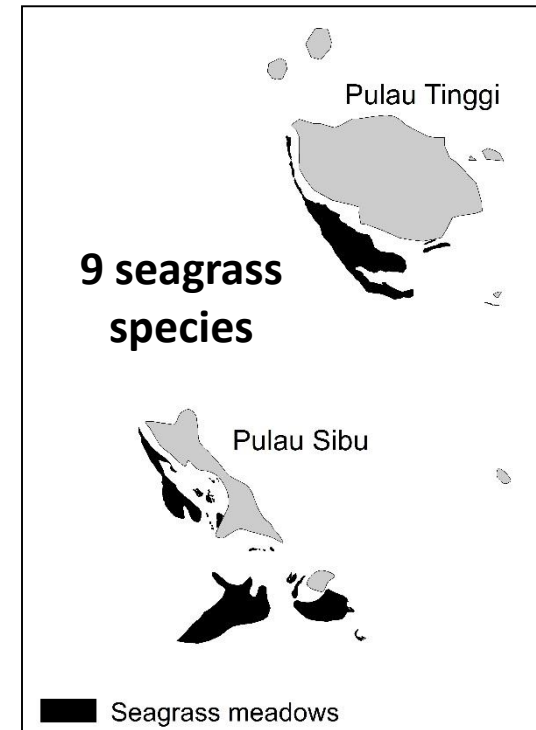
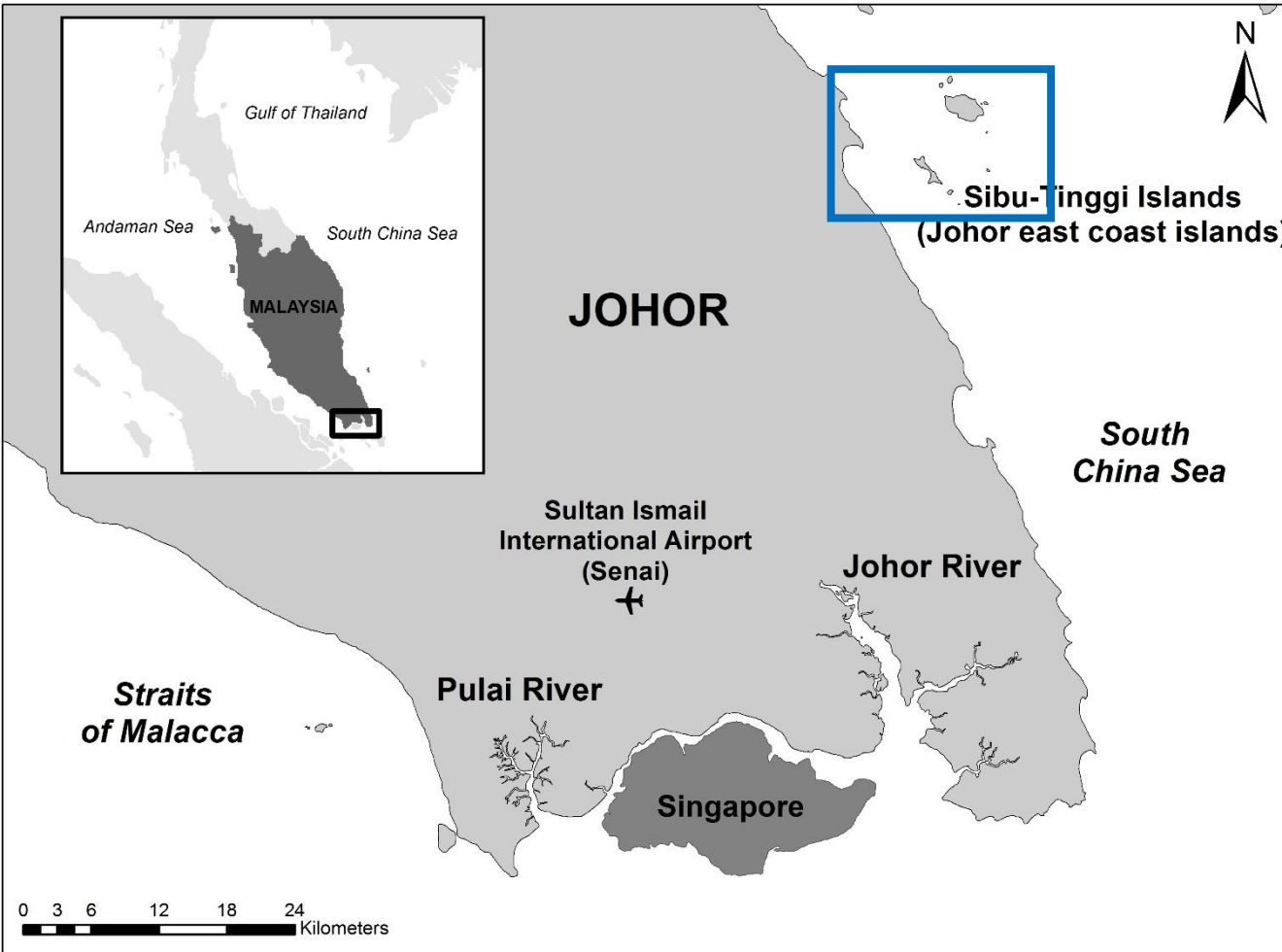
## UNKNOWN

DUGONG	SEAGRASS
Estimated population.	Seagrass updated extent map and seagrass meadow dynamics.
Population trend.	Quantitative basis to threats- run-off, pollution, dredging, trawling.
Quantitative basis to threats- Mortality rate, entanglement rate, boat strike, unsupervised tourism, blast fishing.	Total economic value for seagrasses.
General ecology -Range and movement, site fidelity, feeding, behavior, habitat use.	Habitat health status- water quality, sediment quality, productivity.
Sublethal threats- contaminants.	Climate change impact- sea level rise, sea temperature.
DNA- genetic, population stock and structure.	

# Interactions between conservation and development – issues and challenges

ISSUES	CHALLENGES
Laws and policies.	Establishment process of new legislation status.
Monitoring and enforcement.	Manpower, funding, community monitoring, commitment.
Funding and capacity building, manpower.	Developing country status.
Level of awareness.	Culture, socio-economic, logistical.
Differences Governance Structure.	Streamlining.
Communication and Coordination issues.	Bureaucracy, protocol, personalities.
Community participation, involvement and empowerment.	Capacity, skill, approach, culture, continuity.
Information gaps.	Funding, manpower, capacity, expertise.

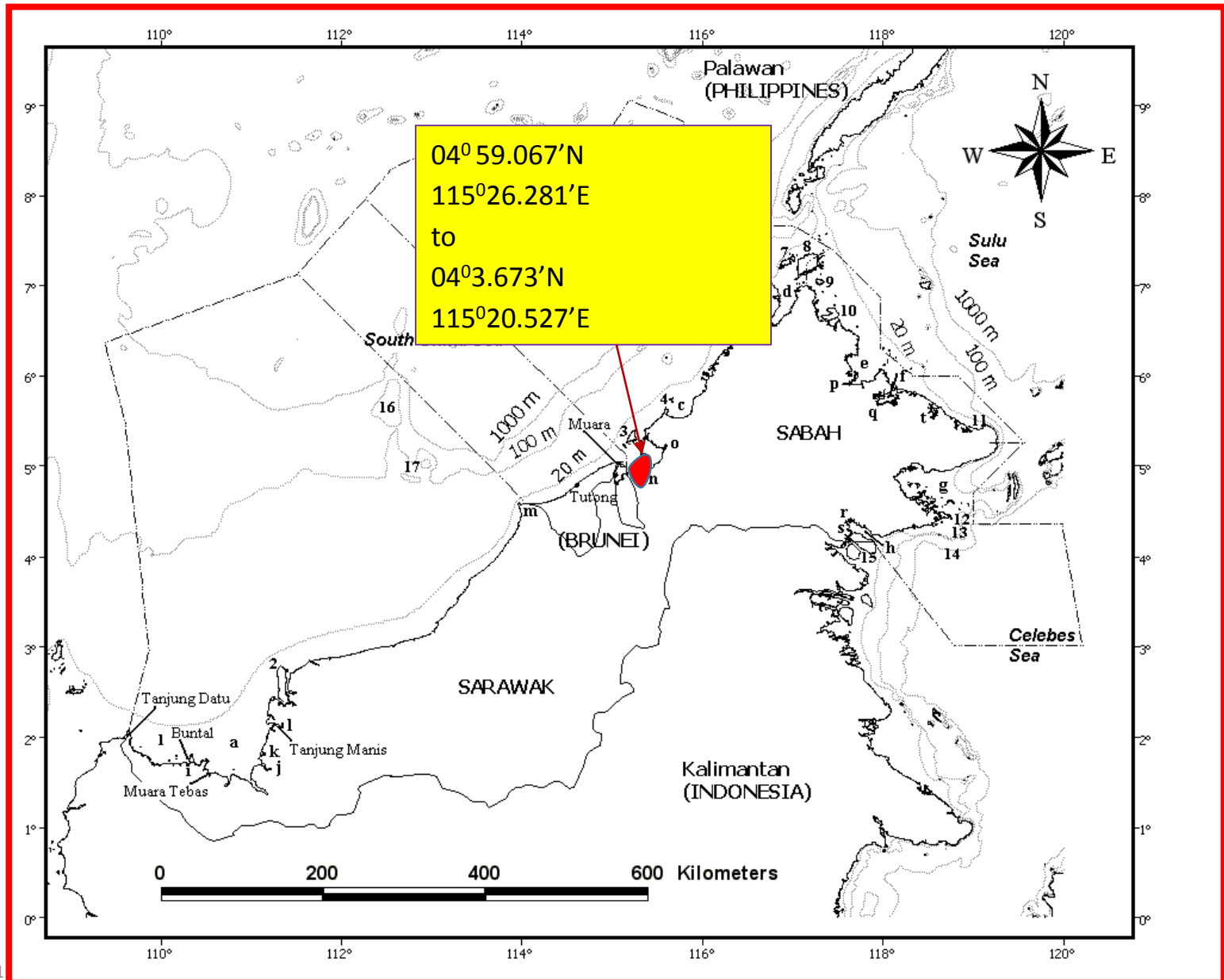
# PROJECT AREA: SIBU & TINGGI ISLANDS, JOHOR



Source: Affendi et al. (2005);  
Ooi et al. (2011)

Source: Ponnampalam et al. (2015)

# PROJECT AREA FOR MY 5: KUALA LAWAS



# PROJECT MY 1

**TITLE:** Operationalizing the Malaysian National Plan of Action for Dugong in Pulau Sibu and Pulau Tinggi, Johor, Peninsular Malaysia

**PROJECT PARTNER :** Department of Marine Park Malaysia

**AIM:** To operationalize the National Dugong Plan of Action (NPOA) at Pulau Sibu and Tinggi, Johor

**OUTCOME:** 1.0 and 4.1

## OBJECTIVES:

- i. To expand the existing marine park areas of Pulau Sibu and Pulau Tinggi in Johor as a Dugong and Seagrass Sanctuary
- ii. To develop a Management Plan of Dugong-Seagrass in Pulau Sibu-Tinggi, Johor
- iii. To engage and empower the local communities with issues pertaining to the management marine park and conservation of marine natural resources through the establishment of Community Consultative Committee (CCC).



OUTPUT	ACTIVITY
Output 1.1 Governance structures for community involvement in conservation and monitoring of dugong and seagrass ecosystems established or strengthened in target areas	1.1.1 Stocktaking: Community participation in project site
	1.1.2 Stakeholder and community consultation and socialisation
	1.1.3 Communication, education and awareness programme
	1.1.4 Community Consultative Committee meetings
	1.1.5 Training: Community involvement in consultative management of project sites
Output 4.1 Policy, planning and regulatory gaps reviewed (conservation of dugongs and seagrass ecosystems) and recommendations developed	4.1.1 Data information and stocktaking-link to MY4
	4.1.2 Development of the management plan and proposal of dugong and seagrass sanctuary
	4.1.3 Stakeholder and community consultation on Management Plan and proposed Dugong-Seagrass Sanctuary-Link to MY4
	4.1.4 Management Plan- Deliver
	4.1.5 Management Plan Training
	4.1.6 Completion of Proposal of Dugong-Seagrass Sanctuary
	4.1.7 Submission of the Proposal of Dugong-Seagrass Sanctuary to National Steering Committee (NSC)
	4.1.8 Endorsement of Regulations on Fisheries Management for Dugong-Seagrass Sanctuary under Fisheries Act 1985 by National Steering Committee (NSC)
	4.1.9 Monitoring and evaluation

# PROJECT MY 2

**TITLE:** Establishment of National Facilitating Committee and Technical Working Group for Conserving Dugongs and Their Habitats Through Involvement of Various Stakeholders

**PROJECT PARTNER:** Turtle and Marine Ecosystem Center (TUMEC)

- **AIM:** To establish National Facilitating Committee and Technical Working Group on Dugong Conservation and Their Habitats which represents the government, public, private and NGO's.
- **OUTCOME:** 4.1 and 4.3
- **OBJECTIVES:**
  - (i) Establishment of National Facilitating Committee
  - (ii) Establishment of Technical Working Group in Sibu/Tinggi Island of Johor and Lawas of Sarawak
  - (iii) Improve the Status on Implementation of Dugong NPOA.
  - (iv) Improve / harmonize the national laws and policy and state regulation on dugong conservation

OUTPUT	ACTIVITY
Output 4.1 Policy, planning and regulatory gaps reviewed (conservation of dugongs and seagrass ecosystems) and recommendations developed	4.1.1 Organize Technical Working Group Meeting in Sibutu/Tinggi Islands of Johor
	4.1.2 Organize Technical Working Group Meeting in Lawas of Sarawak
	4.1.3 Organise meeting to establish National Facilitating Committee
Output 4.3 Capacity for national and regional networking and contribution to global policy for effective dugong and seagrass conservation in Indian and Pacific Ocean basins	4.3.1 Organise National Seminar / Workshop
	4.3.2 Organise Workshop/Training in Sibutu/Tinggi Islands of Johor
	4.3.3 Organise Workshop/Training in Lawas of Sarawak
	4.3.4. Produce relevant documents and outcomes of the project

# PROJECT MY3

**Title :** Community Understanding and management of dugong and seagrass resources in Johor, Malaysia

**Project Partner:** Center for Marine and Coastal Study of Universitiy Sains Malaysia

**Objective:** To assist local communities in understanding the ecological and economic importance of conserving dugong and seagrass resources and improve local capacity to manage these resources more effectively bearing in mind social, cultural and economic needs.

## **Activities and output:**

- preparation of best practice and education materials, education program in P. Tinggi, dugong monitoring programme
- best practice training in P.Sibu and P.Tinggi,
- Pre test of management initiatives, pilot implementation by community
- post test of management initiatives
- Preparation of a set of a guidelines for best practise
- Optimal governance structure-recommendation of management

- Outcome :
- 1.2: Capacity developed for community based stewardship (2 members from each resort/village with the developed capacity to conserve and monitor dugong and seagrass

1.3 : Integrated community management plans developed and piloted (results from post test indicate that 60% of the community is receptive and actively taking part in management initiatives)



Photos: Yusri bin Mohd Yusof

Education programme at P. Sibul, Johor in 2013 which involved conventional education methods and innovative processional performance installation

# PROJECT MY4

- **TITLE:** A multi-pronged approach in overcoming knowledge barriers on the ecology and status of dugongs in Johor – Towards critical habitat protection
- **PROJECT PARTNER:** The MareCet Research Organization &  
Institute of Ocean & Earth Sciences of University Malaya
- **OBJECTIVE:** To OVERCOME KNOWLEDGE BARRIERS (via research) that hinder the understanding of dugong and seagrass conservation needs in Johor, Malaysia, so as to enable the comprehensive development of tangible and effective conservation and management plans, including the EXTENSION OF CURRENT MPA BOUNDARIES to include SEAGRASS MEADOWS being CRITICAL HABITAT for the dugong
- **OUTCOMES:**
  - 1.3** (A Technical Working Group for dugong & seagrass conservation established, involving multi-level stakeholders)
  - 3.1** (Knowledge barriers on dugong & seagrass ecology removed, enabling better conservation and management efforts to be developed)
  - 4.1** (Linked to MY1 - dissemination of research results to aid in dugong & seagrass marine reserve planning, dugong speed limit zone, roundtable discussions with multiple stakeholders on marine reserve planning, implementation, enforcement and sustainability)

# PROJECT MY4 - 2114

- ACTIVITIES:** Aerial surveys, seagrass mapping, study of feeding areas, TEV & socio-economic surveys, contaminants analyses & habitat health risk assessments, roundtable discussions & stakeholder consultations (MPA planning)



# PROJECT MY 5

- **TITLE:** Overcoming the Knowledge gaps and involvement of Local Community to support the Establishment of a Marine Protected Area(MPA) for Conservation of Dugong and Seagrass in Bay of Brunei, Lawas, Sarawak, Malaysian Borneo
- **PROJECT PARTNER:** Protected Area and Biodiversity Conservation Division (PABC) of Sarawak Forestry Corporation (SFC)
- **Main Aim:** To establish a Marine Protected Area (MPA) for the conservation of dugong and seagrass in bay of Brunei, Lawas, Sarawak East Malaysia
- **Objectives:**
  - To contribute knowledge on dugong population ecology and seagrass to State and Federal Cabinet Meeting agendas.
  - To contribute knowledge to the National Plan of Action (NPOA) for the conservation and management of dugong and seagrass in Malaysia.
  - To develop capacity building on dugong and seagrass
  - To involve local community in conserving dugong and seagrass

Output No.	Activity
1.1 Governance structures for community involvement in conservation and monitoring of dugong and seagrass ecosystems established or strengthened in target area	Conducting community based awareness activities for local communities through Honorary Wildlife Program
	Conducting community awareness activities to school children through Nature 'n U program
	Development of Sarawak State Cabinet Paper for the gazettelement of Lawas National Park for protection of dugong and seagrass
Output 3.1 Critical knowledge gaps (dugongs and seagrass ecosystems) identified and surveys initiated/ completed	Overcoming the knowledge gaps of dugongs in the Brunei bay specifically related to their distribution, abundance, behaviour and movement using unmanned aerial surveillance (UAS) system/drone and aerial surveys
	Overcoming the knowledge gaps of seagrass spatial and temporal distribution pattern and its association with water parameters by conducting long-term monitoring program
	Determine the High Conservation Area of dugongs in Lawas by observing the spatial and temporal feeding trail patterns on seagrass beds
Output 4.2 Advocacy programmes and advocacy capacity for improved conservation management of dugongs and their seagrass ecosystems developed and implemented	Strategic discussion and advocacy effort to stakeholders e.g. state government agencies, federal agencies, local people, NGOs and Institution of Higher Learning and private sectors to review/formulate dugong related policies and legislations.



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# Thank you for your attention!

**SYED ABDULLAH BIN SYED ABDUL KADIR**

**DIRECTOR OF SEA TURTLE AND MARINE MAMMAL RESEARCH DIVISION**

**DEPARTMENT OF FISHERIES MALAYSIA**

**NATIONAL FOCAL POINT FOR MALAYSIA**

[sabadullah@dof.gov.my](mailto:sabadullah@dof.gov.my) / [syedjohor@gmail.com](mailto:syedjohor@gmail.com)

[www.dof.gov.my](http://www.dof.gov.my)

