



CENTRE FOR INTERNATIONAL LAW  
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# RESEARCH ON MARINE PLASTICS IN SOUTHEAST ASIA: *Who does what?*

**25 September 2019**

**Informal Roundtable Discussion, Jakarta**

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# A review of research on marine plastics in Southeast Asia:

## Who does what?

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# Background and Scope

- Natural evolution of on-going work of NUS on different aspects of marine plastics in the region
  - Focus on research in natural sciences and programmes and initiatives that involve governments in the region, directly or indirectly – Little socio-economic analysis involving the private sector
  - Funding from the United Kingdom
  - The information contained in this report is true as off 15 May 2019
  - Now engaged in a new project with UN Environment – COBSEA to support the development of an online platform that displays an up-dated and ‘up-datable’ format of the same content
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## **Marine plastic from waste:**

%, types, collecting processes, recycling and trade, leakage sources including abandoned, lost or otherwise discarded fishing gear (ALDFG)

## **Distribution, abundance, identification and fate of marine plastic:**

Standardising methodologies, Survey and monitoring in different parts of the environment, extraction optimisation, deposition, accumulation/hotspots, transportation and movement, marine plastics data platform, removal and recyclability, degradation and fragmentation

## **Impact of marine plastic on the environment:**

Uptake, assimilation, accumulation and transfer by marine organisms, occurrence of plastics across taxa and trophic levels, effect on particular taxa, communities and ecosystems, effect on marine environment, Marine plastics as a vector/pathway for pathogens and toxic components, monitoring of impact on marine ecosystems, socio-economic impact, food security, human health

## **Upstream production – manufacture and use of plastic:**

Development of new polymers, ban on specific polymers, limitation in use (i.e., specific polymers for specific application, for example include packaging standards)

## **Trade regulations**

Impact on international trade, governance and regulation at international and regional levels, circular economy

# Methodology and Structure

- Research based on systematic review of published scientific literature, internet research with a series of keywords and authors work in different programmes on this topic including participation to working groups at the IMO (Marine Environmental Protection Committee, PPR, London Convention/London Protocol).

Part 1- Marine plastic research in each ASEAN Member State

*Context, status of understanding, main players, gaps, events hosted*

Part 2- Programmes/initiatives in regional bodies: ASEAN, COBSEA, etc.

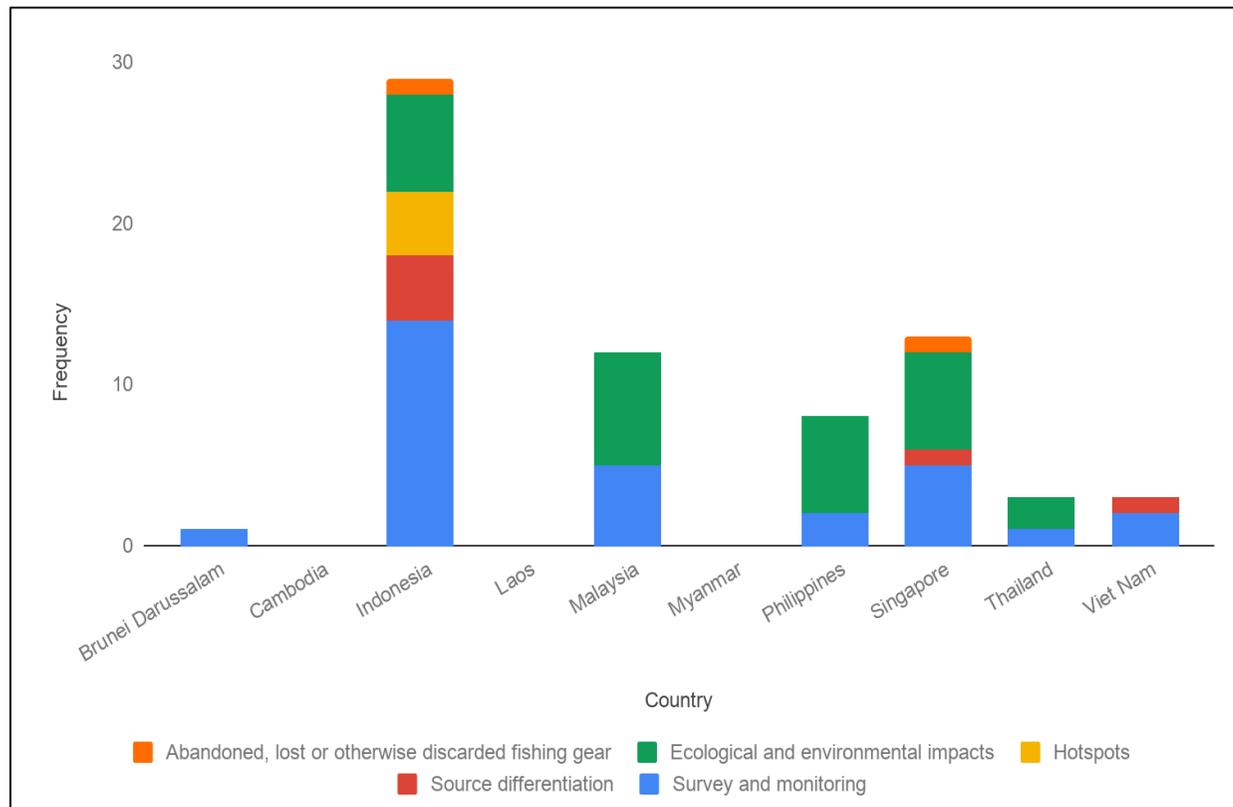
Part 3- Global frameworks relevant to Southeast Asia

Part 4- Notable partnerships (incl. public-private)

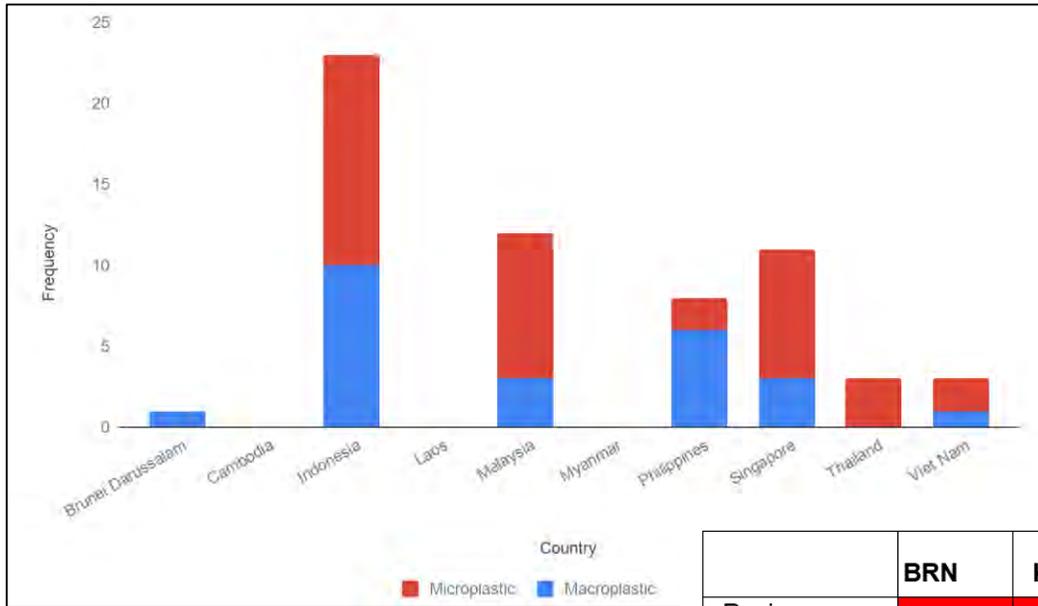
Part 5- Comparative analysis

# Findings in natural sciences

- Areas of research: survey and monitoring, source differentiation, hotspots, ecological and environmental impacts, ALDFG



# Findings in natural sciences



	BRN	KHM	IDN	LAO	MYS	MMR	PHL	SGP	THA	VNM
Review (literature/ social media)	Red	Red	Green	Red	Red	Red	Green	Green	Red	Red
Sampling	Green	Red	Green	Red	Green	Red	Green	Green	Green	Green
Monitoring	Red	Red	Green	Red	Green	Red	Red	Green	Red	Red
Quantification	Green	Red	Green	Red	Green	Red	Green	Green	Green	Green
Identification	Green	Red	Green	Red	Green	Red	Red	Green	Green	Red
Laboratory experimental work	Red	Red	Green	Red	Red	Red	Red	Green	Red	Red
Simulation model	Red	Red	Green	Red	Red	Red	Red	Red	Red	Green

Legend



Method employed in marine plastics research

Method not employed in marine plastics research

# INTERNATIONAL LAW AND POLICY ON POLLUTION FROM MARINE PLASTICS IN SOUTHEAST ASIA<sup>1</sup>

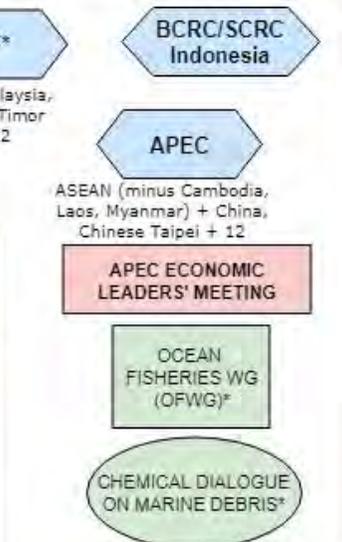
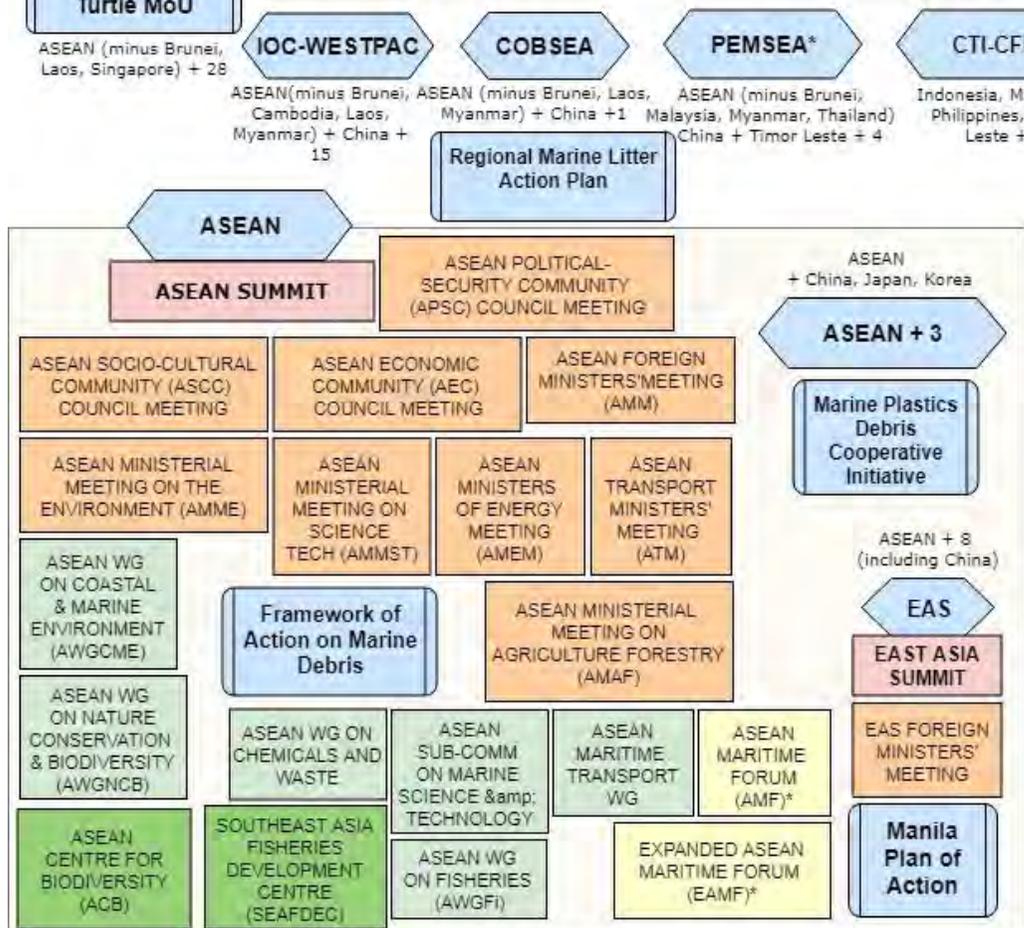


## LEGEND

- Regional Body
  - International Organisation
  - Regional Agreement/Declaration
  - International Instruments and Initiatives
  - International expert or working group
- Head of State/Government Level**
- Ministerial Level
  - Senior Official Level
  - Officials Technical Level
  - Technical Centre / Body
- \* Possible Track 1.5 or 2

[Categorisation based on publicly available documents]

**Footnote <sup>1</sup>** The geographical scope of this map is the seas of Southeast Asia and especially the coastal States: Brunei, Cambodia, China, Indonesia, Malaysia, Philippines, Singapore, Thailand, Timor Leste and Vietnam. Involvement of these States is identified as ASEAN or individually for China and Timor Leste



## INTERNATIONAL AND REGIONAL BODIES

- ADB:** Asian Development Bank
- APEC:** Asia-Pacific Economic Forum
- ASEAN:** Association of Southeast Asian Nations
- CTI-CFF:** Coral Triangle Initiative on Coral Reefs, Fisheries and Ecology
- COBSEA:** Coordinating Body on the Seas of East Asia
- EAS:** East Asia Summit
- FAO:** Food and Agriculture Organization
- GEF:** Global Environment Fund
- GESAMP:** Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
- IMO:** International Maritime Organization
- IOC:** International Oceanographic Commission
- IOC-WESTPAC:** IOC - Western and Central Pacific
- PEMSEA:** Partnership in Environmental Management of the Seas of East Asia

# Findings in the work of regional and global bodies and initiatives

**20  
Research  
Topics  
Identified**

- policy, laws, administrative measures
- Action Plans, guidelines and standards
- Public outreach/beach clean-up
- Language and cultural barriers, data accessibility
- Upstream research/circular economy
- Research framework, coordination
- Survey and monitoring/pollution status
- Methodology for monitoring and assessment
- Source differentiation,
- Contribution of fisheries
- Contribution from offshore activities
- Accumulation zones
- Ecological and environmental impact
- Microplastics, etc

# Comparative analysis

Research Topic	Level of interest by bodies & initiatives	Natural Science Research	Recommended
Policy, laws, administrative measures	Medium	NA	Potential Gaps
Action Plan, guidelines and standards	Medium	NA	Potential Gaps
Public outreach / Beach clean-up	Medium	NA	Potential Gaps
Language and cultural barriers/data accessibility	Low	NA	Potential Gaps
Upstream research / Waste management	High	NA	Potential Gaps
Research framework, coordination	Medium	NA	Potential Gaps
Surveys and monitoring / pollution status	High	High	Priority
Methodology for the monitoring and assessment of marine litter	Medium	Low	Gap
Source differentiation	Medium	Medium	Priority
Port reception facilities	Low	NA	Potential Gaps
Fiber reinforced plastic vessels	Low	Low	More research needed
Hull scraping and marine coating	Low	Low	More research needed
Discharge from offshore infrastructures (incl. aquaculture)	Low	Low	More research needed
Contribution of fisheries/Lost and abandoned fishing gear	Medium	Medium	Priority
Contribution from rivers/river basin management	Low	Low	Gap
Accumulation zones & Hotspots	High	Medium	Priority
Fragmentation and degradation	Medium	Low	Gap
Microplastics	Medium	High	On-going
Ecological and environmental impact	High	High	Priority
Socio-economic impact	Medium	NA	Potential Gaps

# Gaps and Priorities

## Research priorities:

Surveys and monitoring

Source differentiation

Accumulation zones & hotspots

Ecological and environmental impact

Contribution of fisheries/lost and abandoned fishing gear

## Gaps in research:

Methodology for the monitoring and assessment of marine litter

Contribution from rivers/river basin management

Fragmentation and degradation

Issues related to the deliberate or abandonment of waste at sea

Risk assessment approach to prioritization

Consider also potential gaps in research

# What can we do?

- Develop a network of regional research centres
  - We all play a complementary role
  - What do you work on?
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