

Marine Plastics Debris Science in Countries of East Asian Seas

Scientific Findings

SEA of Solutions

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NUS Research Project on combatting pollution from marine plastics through international law, governance and science – Youna Lyons, Kanin Laopirun, Amanda Lim, Neo Mei Lin, Yuke Ling Tay and Vu Hai Dang



CIL

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A review of research on marine plastics in Southeast Asia:

Who does what?

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(information contained
are true as of 15 May
2019)

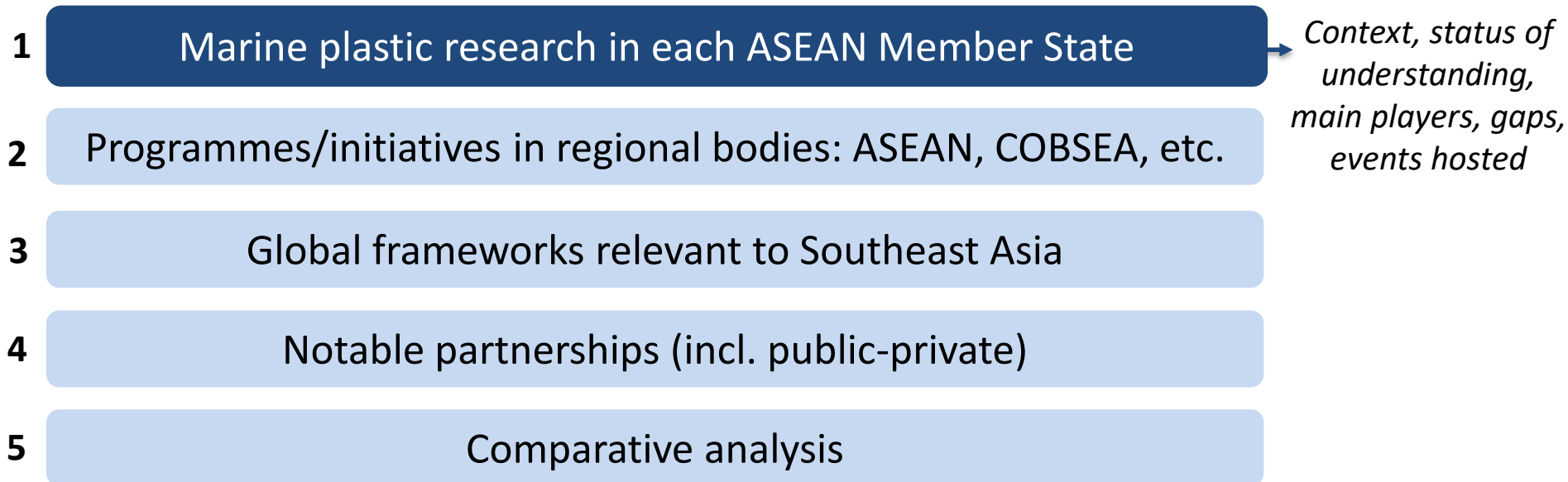


Background and Scope

- Important in the SEA region
- Funding from the United Kingdom
- Identifying efforts, frameworks and policies in marine plastics research in the region

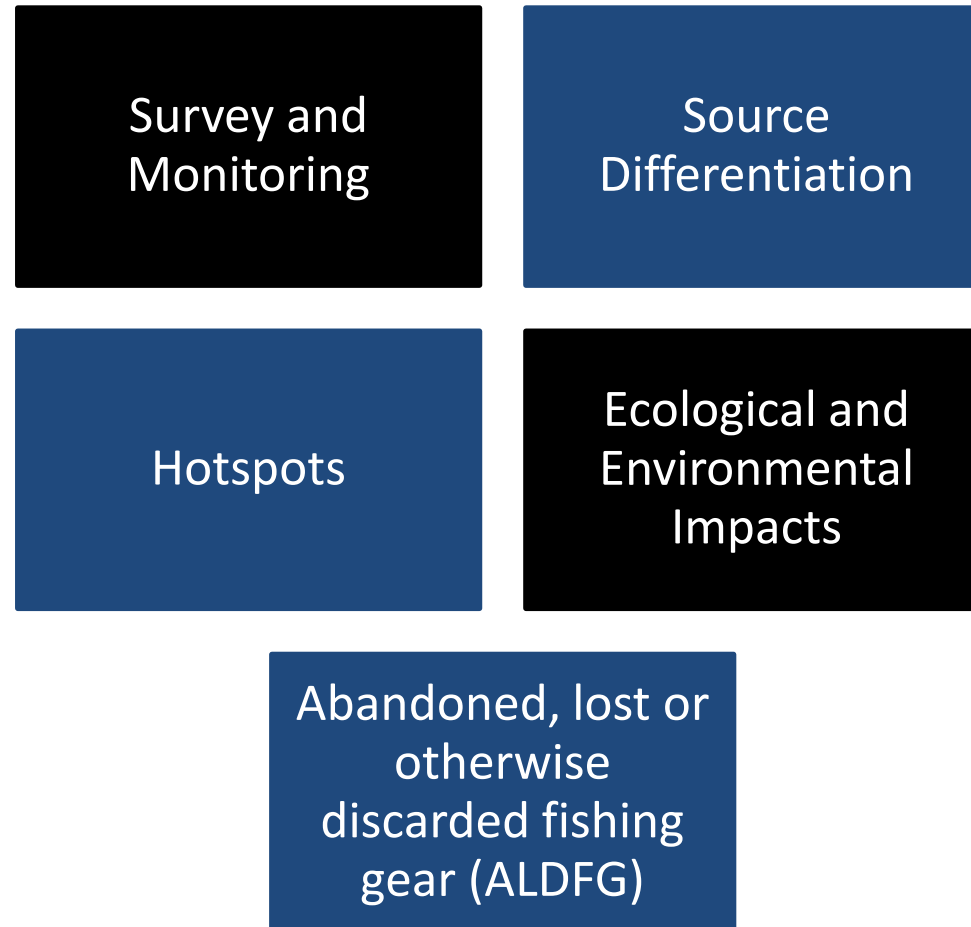
Methodology and Structure

- Systematic literature search into publications, proceedings, reports, worldwide web
- Communication from fora, symposia, conferences, online surveys



Methodology and Structure

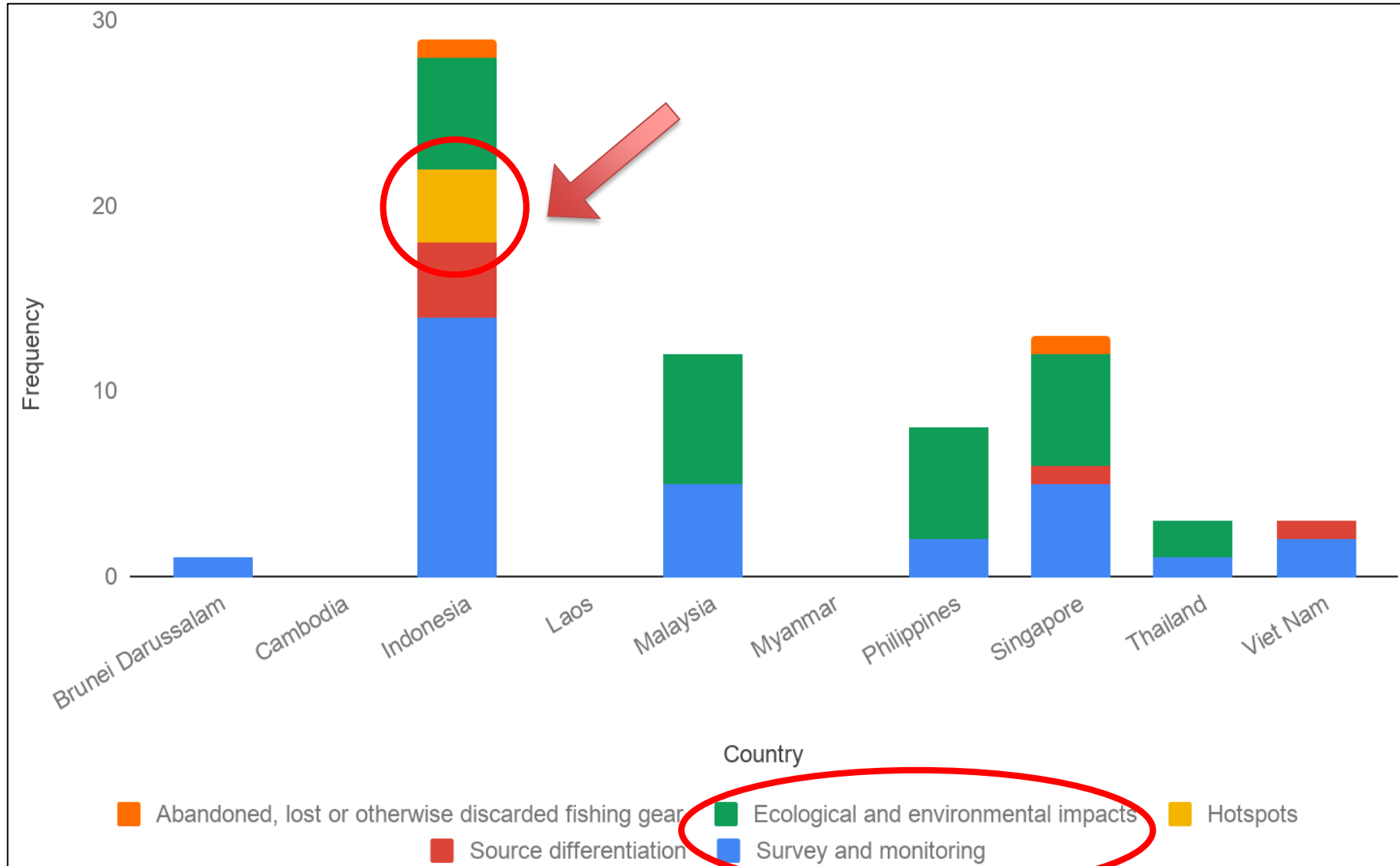
- 5 research focus



Findings in natural sciences

- 5 research focus

Figure 2



Findings in natural sciences

- Research methodologies

Table 2

	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	Red	Green
Monitoring	Red	Red	Green	Red	Green	Red	Red	Green	Red	Red
Quantification	Green	Red	Green	Red	Green	Red	Green	Green	Red	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



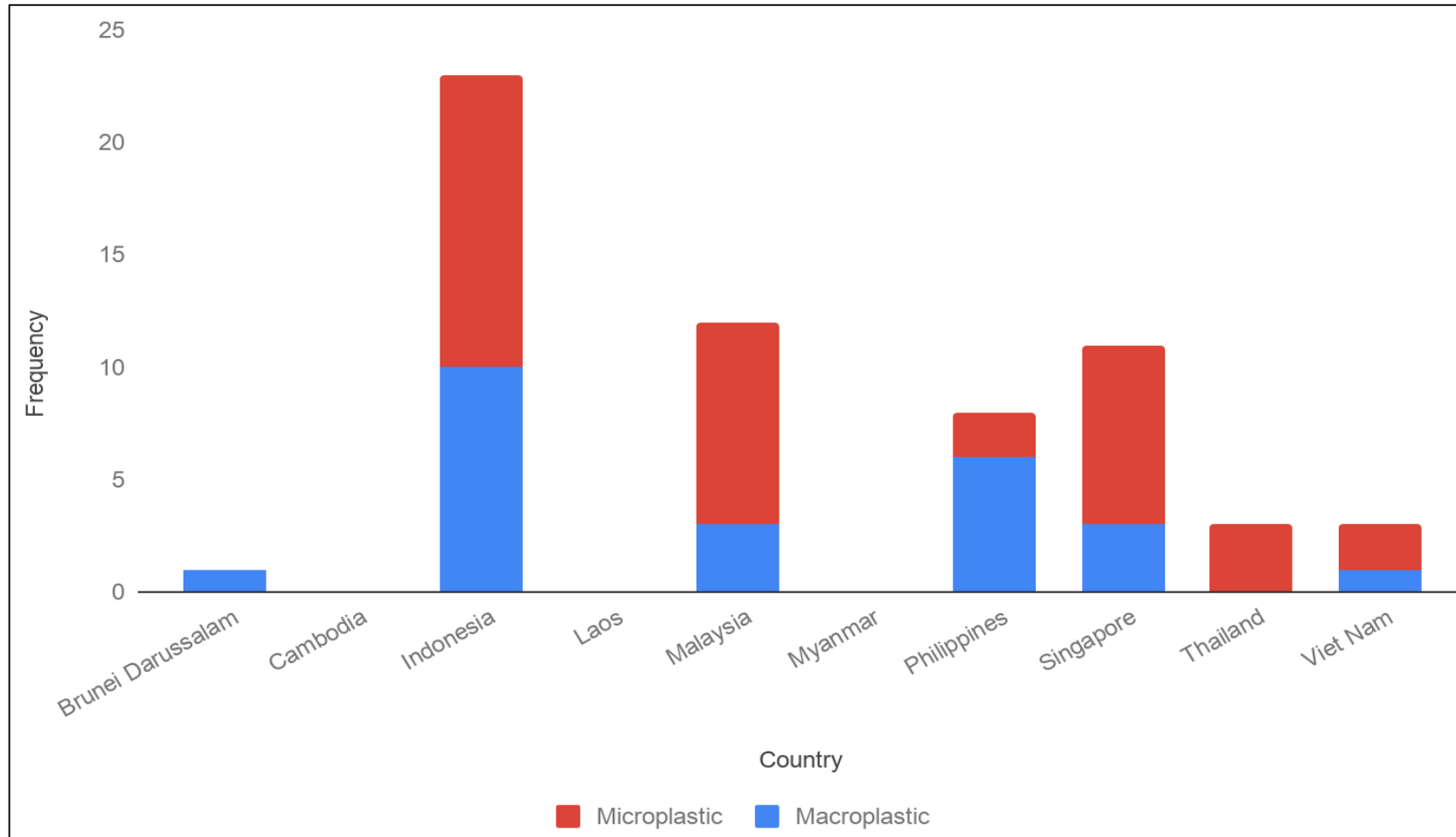
Method employed in marine plastics research

Method not employed in marine plastics research

Findings in natural sciences

- Research in macro- and micro-

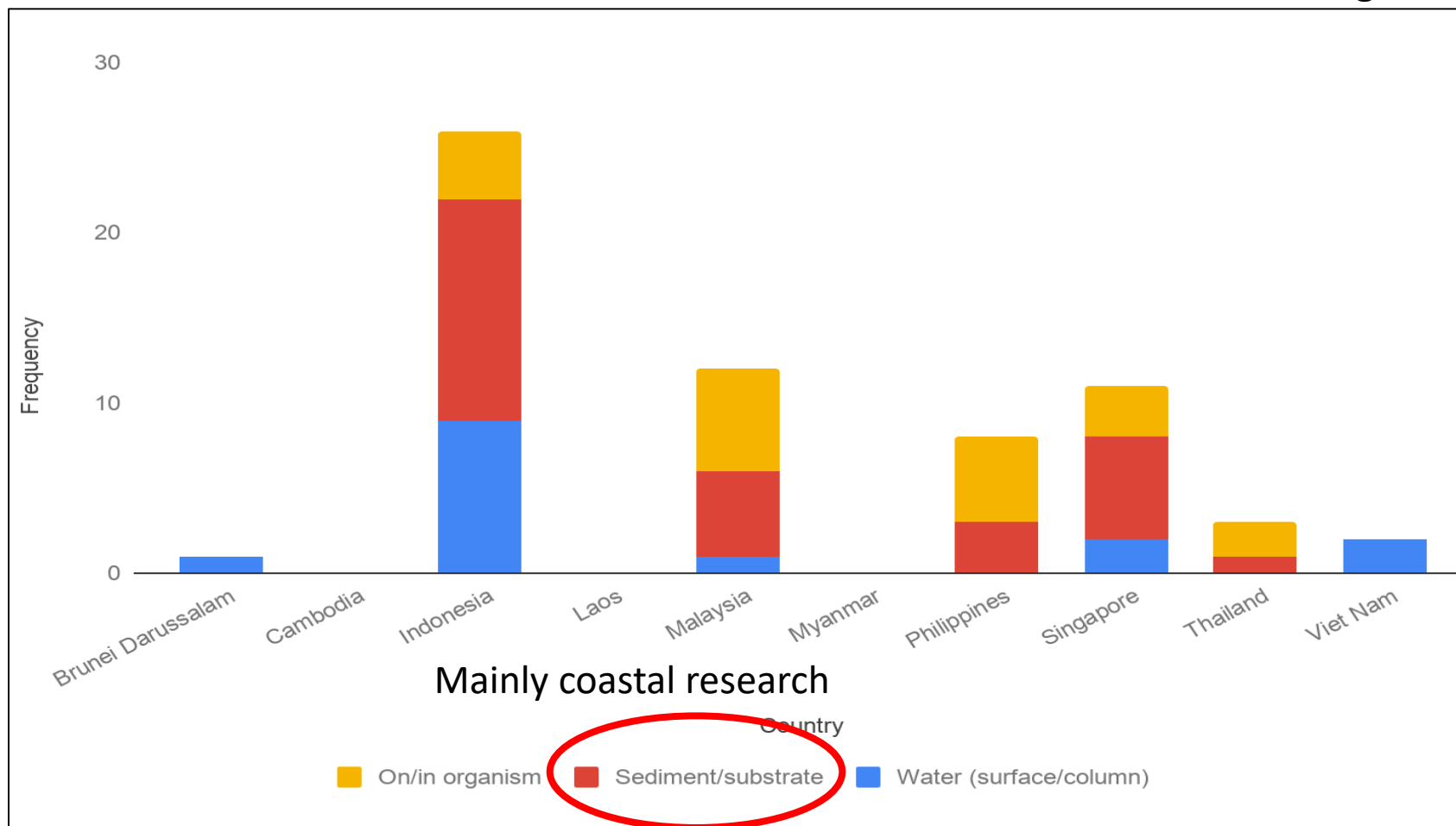
Figure 3



Findings in natural sciences

- Plastic sampling environment

Figure 4



Linking natural science research to policy frameworks

Research Focus	Level of interest by bodies & initiatives	Natural Science Research	Recommended
Surveys and monitoring / pollution status	High	High	Priority
Ecological and environmental impact	High	High	Priority
Accumulation zones & Hotspots	High	Medium	Priority
Macroplastics	High	Medium	Priority
Source differentiation	Medium	Medium	Priority
Contribution of fisheries/Lost and abandoned fishing gear	Medium	Medium	Priority
Microplastics	Medium	High	In Progress
Methodology for the monitoring and assessment of marine litter	Medium	Low	Gap
Fragmentation and degradation	Medium	Low	Gap
Contribution from rivers/river basin management	Low	Low	Gap
Fiber reinforced plastic vessels	Low	Low	More research needed
Hull scraping and marine coating	Low	Low	More research needed
Discharge from offshore infrastructures (including aquaculture)	Low	Low	More research needed

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Next Step Forward

- Improving our research methodologies
- Review and update database
- Expand scope into ASEAN +3