IOSEA 25 YEARS

MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION AND MANAGEMENT OF MARINE TURTLES AND THEIR HABITATS OF THE INDIAN OCEAN AND SOUTH-EAST ASIA

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5 November 2026

11TH MEETING OF THE ADVISORY COMMITTEE
Bonn, Germany, 8-11 December 2026
Agenda Item 5.6

REPORT ON THE NEEDS ASSESSMENT QUESTIONNAIRE

(*Prepared by the Advisory Committee*)

Mandate:

- WP #108: *Adopt a proactive process for identifying needs and providing training within the IOSEA region, including by:*
  a) establishing an intersessional working group to develop a Capacity Building Strategy based on the Objectives of the CMP and activities in the Work Programme
  […]

Summary:

- The report presents findings from the Capacity Needs Assessment Questionnaire conducted by the IOSEA Capacity Building Working Group, drawing on 141 responses from marine turtle practitioners across the region
- It identifies priority capacity-building topics overall and by subregion, country and stakeholder affiliation
- Key priorities include assessing project effectiveness, identifying funding sources, and strengthening data management systems
- The findings are intended to inform the Capacity Building Strategy and guide future Working Group activities

Action requested:

- Note the report and provide feedback

Report on the Needs Assessment Questionnaire



Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia

Executive Summary

The Capacity Building Working Group of the Indian Ocean – South-East Asia (IOSEA) Marine Turtle Memorandum of Understanding (MOU) conducted a Capacity Needs Assessment among practitioners working on marine turtle conservation across the IOSEA region. The questionnaire was distributed to practitioners across all four IOSEA sub-regions, resulting in 141 responses. Respondents rated 77 capacity-building topics on a five-point scale, and results were analysed by respondent category (government vs. non-government) and sub-region.

The highest-priority needs identified among all participants were *assessment of project effectiveness*, *identifying sources of funding*, and *data management systems*. Results will inform the next steps of the Working Group's activities, which will focus on developing a capacity-building framework for the IOSEA Marine Turtle MOU that aims to identify where support can be most effectively directed.

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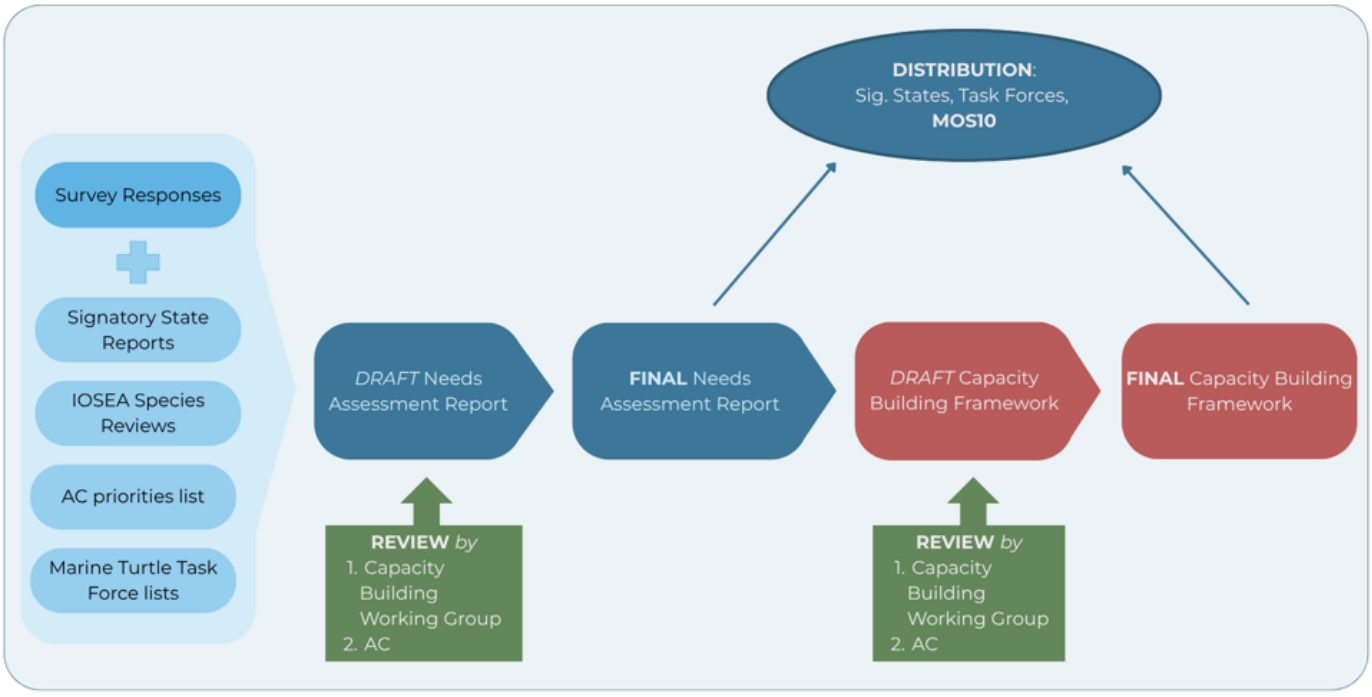
1. Introduction

Marine turtle conservation requires coordinated efforts across a wide range of disciplines, from field monitoring and data management to policy development and stakeholder engagement. Practitioners working in the IOSEA region operate in diverse contexts and face varying capacity constraints depending on their institutional setting, geographic location, and available resources.

Understanding where capacity gaps exist is essential for directing training and support effectively. This Capacity Needs Assessment was conducted to identify the topics where practitioners across the IOSEA region most need support.

This assessment forms part of the mandate and work programme commitments of the IOSEA Marine Turtle MOU Capacity Building Working Group. Results will be used to guide the Working Group to help develop a broader capacity building framework and assist the Secretariat with identifying actions that it can assist to deliver under current and potential future budgets.



2. Methodology

The Capacity Needs Assessment questionnaire was distributed to practitioners, National Focal Points and other stakeholders across all four IOSEA sub-regions (*Western Indian Ocean* (WIO), *Northwestern Indian Ocean* (NWIO), *Northern Indian Ocean* (NIO), and *South-East Asia* (SEA+, which includes Australia)).

Survey participants were asked to rate each capacity-building topic on a five-point scale ranging from 1 (least important) to 5 (most important). In a second step, respondents were asked to further rank the topics they had assigned the highest rating. However, the results indicated a potential bias toward topics listed at the beginning of the survey being ranked more highly, even when their overall priority ratings were lower. This pattern may have resulted from unclear survey instructions. The survey outline can be found in Appendix 1. To avoid introducing bias into the analysis of the initial ratings, the additional ranking of topics rated 5 was excluded from the analysis.

For each topic, an average score (AS) was calculated by multiplying each rating (1–5) by the number of respondents selecting that rating (nx) and dividing by the total number of respondents (n) for that topic:

$$AS = \frac{1 \times n1 + 2 \times n2 + 3 \times n3 + 4 \times n4 + 5 \times n5}{n}$$

Topics were ranked by AS and assigned a priority category for easier comparison. The top 30% of topics were classified as high priority, the next 30% as medium priority, and the bottom 40% as low priority. The top 15 ranked topics within each category were additionally assigned numerical ranks (1–15). Results were compiled into a summary table (see Results Table).

The results are displayed in a similar format to the questionnaire (**Error! Not a valid bookmark self-reference.**). Responses are also analysed by IOSEA sub-region, as presented in the final four columns of the table.

Table 2) and visualised using Likert scales.

3. Results

In the following, the results from the Capacity Needs Assessment will be discussed.

Summary of Demographics

In total, 145 entries were made, representing government-affiliated, non-government organizations and individuals across 36 countries in all four IOSEA sub-regions. However, four people put in their information twice, while 30 did not rate any of the topics. On average, each topic was rated by 100 respondents.

The largest share of answers came from SEA+ (n=41, 38%), followed by NWIO (n=26, 24%), WIO (n=27, 25%), and NIO (n=14, 13%). Three respondents were excluded from the sub-regional analyses as they either indicated none of the sub-regions or specified working across all sub-regions. Malaysia, India, and Kenya were the most represented countries (see Table 1).

Thirty-four people were associated with a government, while 75 worked for a NGO, consultant firm, university or other non-government institution. Additionally, just over half of responses (54%) were submitted on behalf of an organization, with 46% submitted as individuals (see Figure 2).

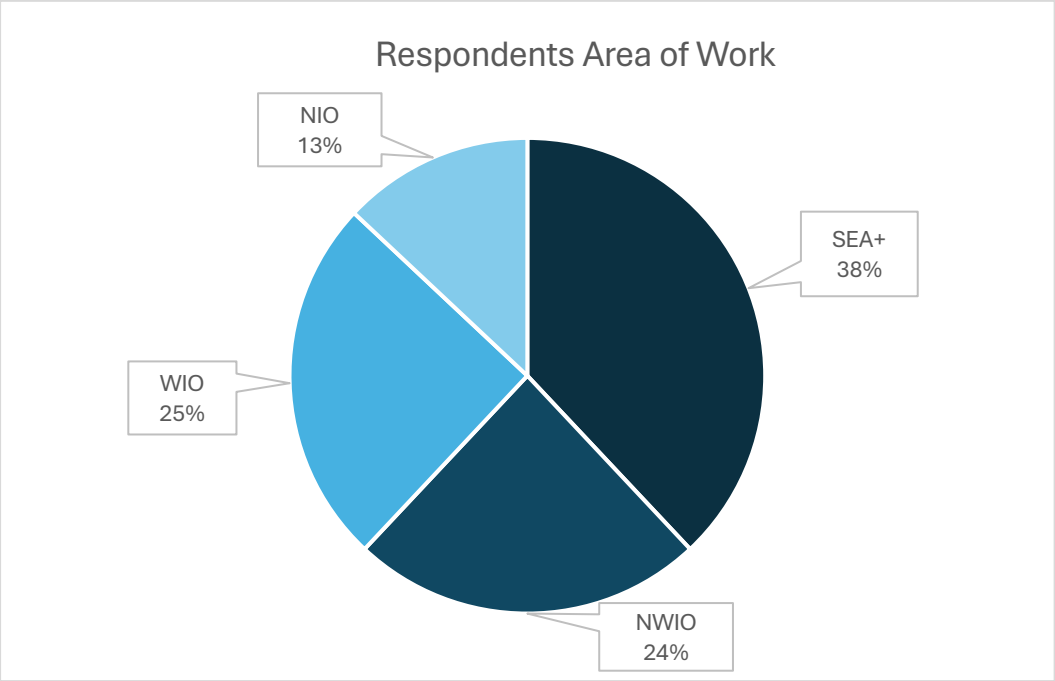


Figure 1: Proportion of survey respondents by IOSEA sub-region (WIO: West Indian Ocean; NWIO: Northwest Indian Ocean; SEA+: Southeast Asia and Australia; NIO: North Indian Ocean)

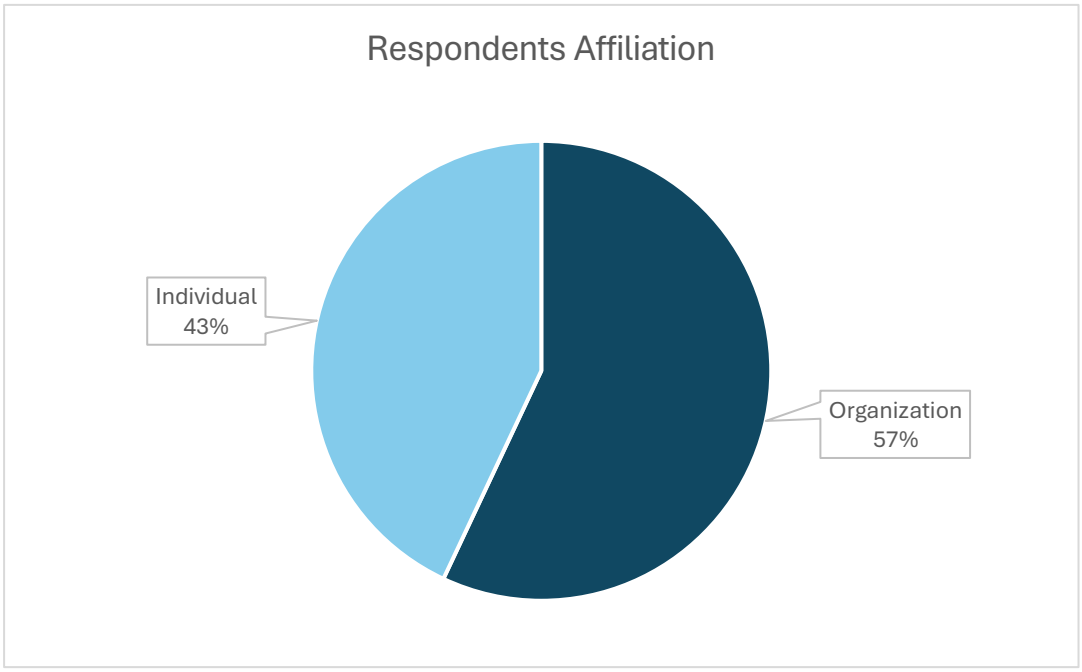


Figure 2: Proportion of respondents and their affiliation with an organization

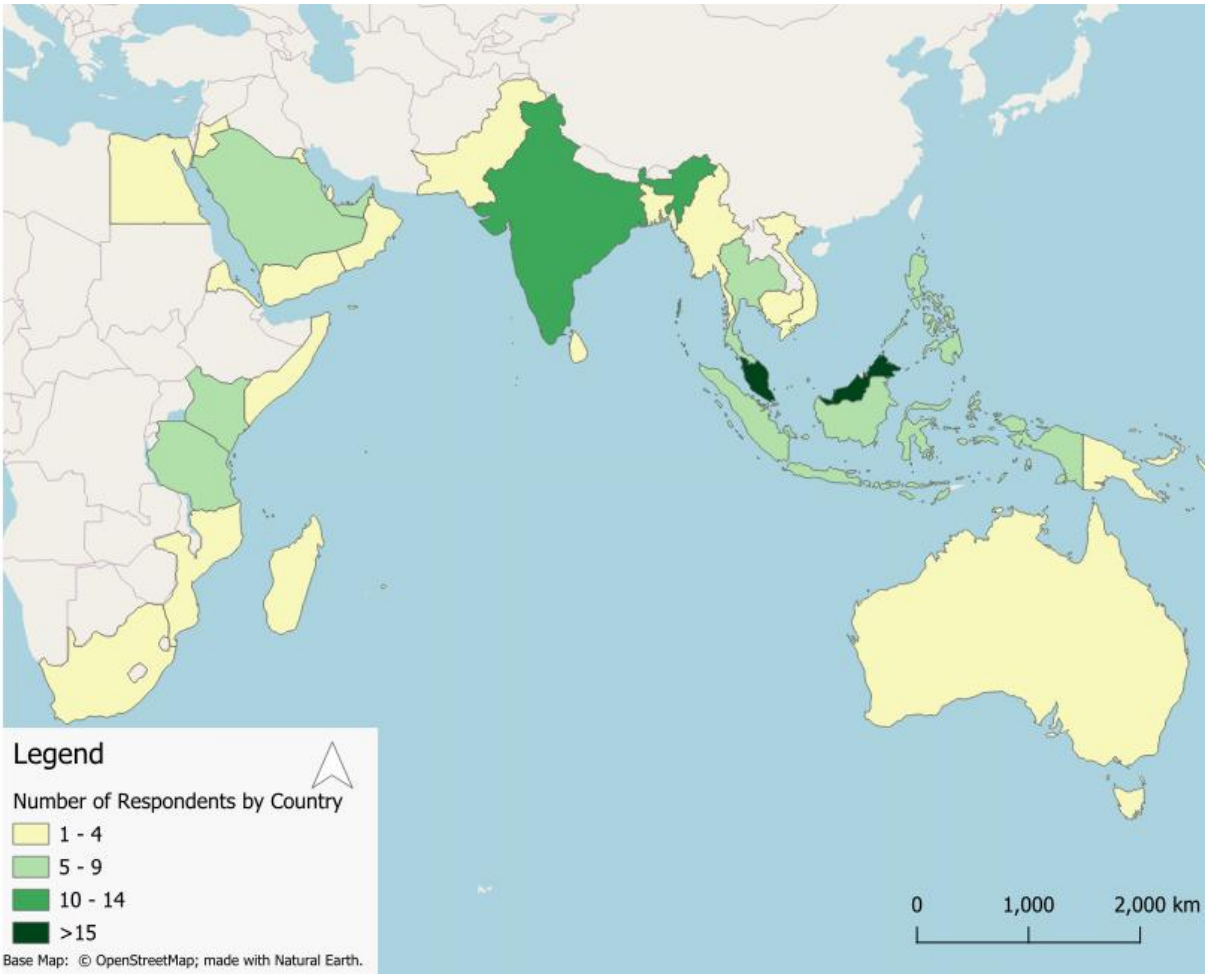


Figure 3: Map showing number of respondents by country

Table 1: Number of survey respondents by IOSEA sub-region and country

IOSEA Sub-Region	Country	# of respondents	Total

WIO	Seychelles	3	33
	Comoros	2	
	France (Reunión)	1	
	South Africa	3	
	Kenya	9	
	Madagascar	3	
	Mauritius	1	
	Mozambique	3	
	Tanzania, United Republic of	6	
	Somalia	2	
NWIO	United Arab Emirates	6	36
	Bahrain	2	
	Saudi Arabia	8	
	Egypt	2	
	Eritrea	2	
	Jordan	1	
	Kuwait	2	
	Oman	4	
	Yemen	4	
	Pakistan	3	
	Qatar	2	
SEA+	Malaysia	16	49
	Indonesia	8	
	Thailand	6	
	Philippines	5	
	Australia	3	
	Myanmar	4	
	Cambodia	2	
	Papua New Guinea	2	
	Vietnam	2	
	Singapore	1	
NIO	India	11	18
	Bangladesh	4	
	Maldives	2	
	Sri Lanka	1	

Results Table

The results are displayed in a similar format to the questionnaire (**Error! Not a valid bookmark self-reference.**). Responses are also analysed by IOSEA sub-region, as presented in the final four columns of the table.

Table 2: Results of the Capacity Needs Assessment Survey. The first column lists all items assessed for potential capacity-building needs. The adjacent columns show the analysed respondent categories, including all responses combined ("All respondents"), responses submitted by government-affiliated participants ("Government"), and responses from non-government participants ("Non-Government"). Responses are also analysed by IOSEA sub-region, as presented in the final four columns of the table. Topics ranked within the highest 30% based on the AS are highlighted in dark orange, those within the next 30% in light orange, and the bottom 40%, representing the topics considered least important, are highlighted in yellow. To further distinguish the highest-priority topics, numerical rankings from 1 to 15 are displayed within the cells for each category, with 1 indicating the highest-ranked topic and 15 the fifteenth-highest-ranked topic.

Legend

x	Top 30% (based on the AS) - The number indicates the topic's ranking
	Next 30%
	Bottom 40%

					IOSEA Regions			
	CAPACITY-BUILDING TOPICS	**All respondents**	**Government**	**Non-Government**	**WIO**	**NWIO**	**SEA+**	**NIO**
	INSTITUTIONAL DEVELOPMENT & PROJECT MANAGEMENT							
1	Administrative planning							
2	Strategic planning, budgeting, execution, and management (including review of project goals and ongoing activities, gap analysis, prioritization, participatory mapping, desk top reviews, etc.)							

	CAPACITY-BUILDING TOPICS	All respondents	Government	Non-Government	IOSEA Regions			
					WIO	NWIO	SEA+	NIO
3	Accessing relevant scientific papers and reports for information, data, methodologies, etc. (including accessing authors)							
4	Acquiring national permits							
5	Ethical considerations in project planning and execution							
6	Health and safety considerations in project planning and execution							
7	Identifying sources of funding	2		2	2		3	1
8	Proposal development, grant applications, project reporting	6	12	6	5		4	2
9	Assessment of project effectiveness/success/impact	1		1	1	12	2	
	DATA & INFORMATION SHARING							
10	Data management systems, tools, and software for the collection and archiving of all types of relevant turtle data	3	1	4	13		1	4
11	Nesting beach, in-water, or any other biological data analyses (please specify)	9	7	5	3	6		
12	Genetic analyses (analysing genetic samples, determining genetic stocks (management units); mixed stock analysis, etc.)							
13	Human-centric data analyses (interviews, socioeconomics, etc.)							
14	Public presentations (preparing a PPT/media, public speaking)							

					IOSEA Regions			
	CAPACITY-BUILDING TOPICS	**All respondents**	**Government**	**Non-Government**	**WIO**	**NWIO**	**SEA+**	**NIO**
15	Writing for science journals							
16	Social media and writing for the public (popular articles)							
	PROJECT IMPLEMENTATION (objectives, methods, results)							
17	Nesting population monitoring		**3**					
18	Nesting habitat monitoring (habitat availability, beach profile, temperature, sand composition, impact of development, etc.)	**14**	**6**	**14**				
19	In-water population monitoring				**6**			
20	In-water habitat monitoring	**12**		**11**	**7**		**10**	
21	Sex ratios (nests, in-water)							**6**
22	Age determination							
23	Genetics/stable isotope sampling							
24	Satellite telemetry							
25	GIS mapping		**4**				**8**	
26	Strandings data collection		**11**					
27	Necropsies		**27**					
28	Aerial surveys: beaches and/or in-water (planes, drones)							
29	Turtle diet sampling							
30	Turtle health assessment							
31	Bycatch monitoring and assessment: artisanal fisheries	**8**		**7**		**1**		

					IOSEA Regions			
	CAPACITY-BUILDING TOPICS	**All respondents**	**Government**	**Non-Government**	**WIO**	**NWIO**	**SEA+**	**NIO**
32	Bycatch monitoring and assessment: commercial fisheries			12				
33	IUU fishing assessment				15			
34	Light pollution assessment							6
35	Marine plastic pollution assessment: quantity, ingestion and entanglement rates, oceanographic features of dispersal	4	8	3	9	4	6	3
36	Underwater noise and offshore extractive industries' impact assessment							
37	Environmental Impact Assessments		15					
38	Climate change impact evaluation	10	2			9		2
39	Designing and conducting interviews & surveys with stakeholders							5
40	Educating/empowering/integrating stakeholders (please specify)							
	CONSERVATION AND MANAGEMENT							
41	Threat assessment, spatial risk assessment and prioritization of management actions	5	9	9		3	3	5
42	Understanding marine turtles: their biology and conservation							5
43	In-situ nest protection (feral animals, high sand temperatures, flooding/erosion, natural predation, etc.)						10	5
44	Hatcheries (when to implement and hatchery management)							
45	Feral animal control							

	CAPACITY-BUILDING TOPICS	All respondents	Government	Non-Government	IOSEA Regions			
					WIO	NWIO	SEA+	NIO
46	Light pollution mitigation							
47	Bycatch artisanal fisheries: turtle handling and release techniques, bycatch mitigation strategies/technologies			15	13	12		
48	Bycatch commercial fisheries: turtle handling and release techniques, bycatch mitigation strategies/technologies							
49	IUU fishing mitigation measures							
50	Ghost net /discarded fishing gear mitigation measures		14			13		
51	Climate change resilience measures		10					3
52	Marine pollution mitigation and determining socio-economic drivers/barriers/opportunities for management						9	5
53	Illegal wildlife trade mitigation (domestic and international)							
54	Turtle rescue and rehabilitation							
55	Management of nesting and coastal habitats							4
56	Management of in-water habitats (seagrass, coral reefs, mangroves)	15						
57	Mitigation of offshore resource extraction impacts							
58	Building the capacity of law enforcement agencies	7		8	7	10	7	5
59	Strengthening the national legislation and judicial process							
60	Designing and implementing a communication strategy based on conservation communication and behaviour change theory	11		10	10	13	10	

					IOSEA Regions			
	CAPACITY-BUILDING TOPICS	**All respondents**	**Government**	**Non-Government**	**WIO**	**NWIO**	**SEA+**	**NIO**
61	Understanding and incorporating the social, economic, and cultural aspects of human-turtle interactions							
62	Designing appropriate and effective educational materials for the targeted audience (please specify)						**10**	
63	Designing and implementing culturally and socially appropriate alternative livelihood strategies and community empowerment programmes						**11**	
64	Marine turtle ecosystem services / putting a value on marine turtles			**13**		**5**	**11**	
65	Identifying Critical Habitats for management	**13**	**5**			**2**		
66	Establishing and managing a (Marine) Protected Area					**11**		
67	Drafting a Strategy for the Conservation and Management of Marine Turtles (local and/or national)						**5**	
	INTERNATIONAL/REGIONAL AGREEMENTS & INITIATIVES							
68	Working with CITES				**4**			
69	Working with Regional Fisheries Management Organisations (RFMOs)							
70	Integrating turtle management into the Ramsar Convention/Sites				**10**			
71	Coordinating with other International/Regional Agreements or Initiatives (please specify)							
	IOSEA MARINE TURTLE MOU							

					IOSEA Regions			
	CAPACITY-BUILDING TOPICS	**All respondents**	**Government**	**Non-Government**	**WIO**	**NWIO**	**SEA+**	**NIO**
72	Focal Point responsibilities and effectiveness							
73	Preparing IOSEA National Reports							
74	Effective use of National Committees/Networks to involve and encourage the cooperation of Government institutions, NGOs and the private sector in marine turtle conservation programmes							
75	Preparing a Site Network application							
76	Site Network management							
77	Using IOSEA online tools				**12**			

Amount of Offers

In the Needs Assessment Questionnaire, respondents were invited to indicate whether they would be willing to share their expertise and knowledge on specific capacity-building topics with others. This allows the IOSEA MOU to facilitate a capacity-building network within the community itself, drawing on the knowledge and expertise already available among its members.

The number of respondents offering support varies considerably across the different capacity-building topics. However, for every topic, at least two people indicated that they would be available to provide assistance. For the highest-ranked topics in particular, more than 10 to 20 respondents expressed their willingness to support others with capacity building.

The Secretariat will maintain a list of all individuals and organisations that have volunteered to provide capacity-building support. Members of the MOU community seeking expertise or assistance can contact the Secretariat, which will facilitate connections with the relevant experts or organisations.

Priority Topics from All Respondents

According to Results Table

The results are displayed in a similar format to the questionnaire (**Error! Not a valid bookmark self-reference.**). Responses are also analysed by IOSEA sub-region, as presented in the final four columns of the table.

Table 2, the top 15 priority topics for all respondents are:

1. *Assessment of project effectiveness/success/impact*
2. *Identifying sources of funding*
3. *Data management systems, tools, and software*
4. *Marine plastic pollution assessment*
5. *Threat assessment, spatial risk assessment and prioritization of management actions*
6. *Proposal development, grant applications, project reporting*
7. *Building the capacity of law enforcement agencies*
8. *Bycatch monitoring and assessment: artisanal fisheries*
9. *Nesting beach, in-water, or any other biological data analyses*
10. *Climate change impact evaluation*
11. *Designing and implementing a communication strategy based on conservation communication and behaviour change theory*
12. *In-water habitat monitoring*

13. *Identifying Critical Habitats for management*
14. *Nesting habitat monitoring*
15. *Management of in-water habitats (seagrass, coral reefs, mangroves)*

Additionally, the Likert response distribution chart (Figure 4) visualises the distribution of all responses for the Top 30%.

The top-ranked topics show a strong concentration of ratings of 4 and 5 (*most important),* with relatively few respondents rating them as 1 or 2 (*least important*), indicating broad consensus that these topics are genuinely important. *Assessment of project effectiveness*, *identifying sources of funding*, and *data management systems* show the strongest concentration of high ratings, suggesting these are not only the highest-ranked but also the most consistently prioritised across respondents. Topics lower within the top 30%, such as *drafting a conservation strategy*, *marine turtle ecosystem services*, and *management of nesting and coastal habitats*, show a wider distribution with a more noticeable proportion of level 3 ratings, indicating these are considered important but with less agreement.

Topics consistently falling in the low-priority category across respondent categories and sub-regions included administrative topics such as *preparing Site Network applications*, *preparing IOSEA National Reports*, and *using IOSEA online tools*, as well as *feral animal control*, *IUU fishing mitigation*, and *underwater noise assessment*.

Overall, the responses from all participants highlight that capacity needs may be most needed in areas of work that are more administrative. Similarly, the analysis highlights how newly emerged and increasingly important topics are also in great need of capacity building support such as *marine plastic pollution assessment* or *climate change impact evaluation*. Additionally, those are primarily topics not typically addressed by IOSEA focal points, explaining the greater gap of capacity.

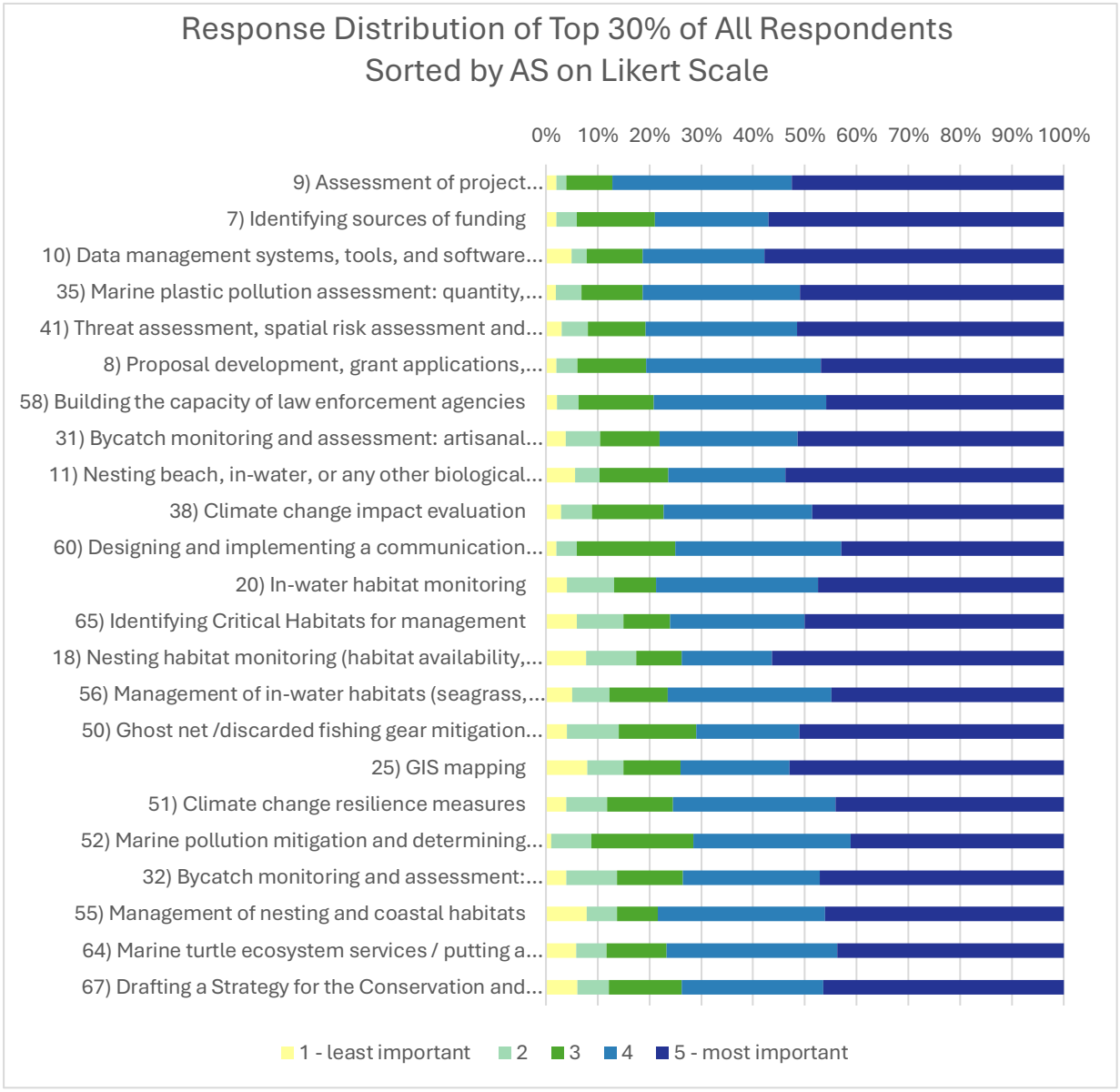


Figure 3: Response distribution of the top 30% of capacity-building topics ranked by all respondents based on the Average Score (AS). Bars show the proportion of respondents selecting each rating on a five-point scale from 1 (least important) to 5 (most important). Topics are sorted in descending order.

Differences between Government and Non-Government Respondents

Notable differences emerged between government and non-government respondents. Government respondents placed particularly high priority on *data management systems* (ranked 1st), *climate change impact evaluation* (2nd), and *nesting population monitoring* (3rd), reflecting a stronger focus on long-term monitoring and conservation planning. Government respondents top 15 priority topics were:

1. *Data management systems, tools, and software*
2. *Climate change impact evaluation*
3. *Nesting population monitoring*
4. *GIS mapping*
5. *Identifying Critical Habitats for management*
6. *Nesting habitat monitoring*
7. *Nesting beach, in-water, or any other biological data analyses*
8. *Marine plastic pollution assessment*
9. *Threat Assessment, spatial risk assessment and prioritization of management actions*
10. *Climate change resilience measures*
11. *Strandings data collection*
12. *Proposal development, grant applications, project reporting*
13. *Marine turtle ecosystem services / putting a value on marine turtles*
14. *Ghost net/discarded fishing gear mitigation measures*
15. *Environmental Impact Assessments*

The Likert Scale in Figure 4 reveals that *climate change impact evaluation* has even exclusively been rated with 4s and 5s, potentially increasing the urgency of capacity building for this topic. Similarly, *GIS mapping*, *marine pollution assessment*, *climate change resilience measures* and *Environmental Impact Assessments* are also ranked exclusively medium-high in comparison to other topics. Those topics might be especially important to government affiliated responders. Their lower rank based on AS may be explained by a lower number of respondents.

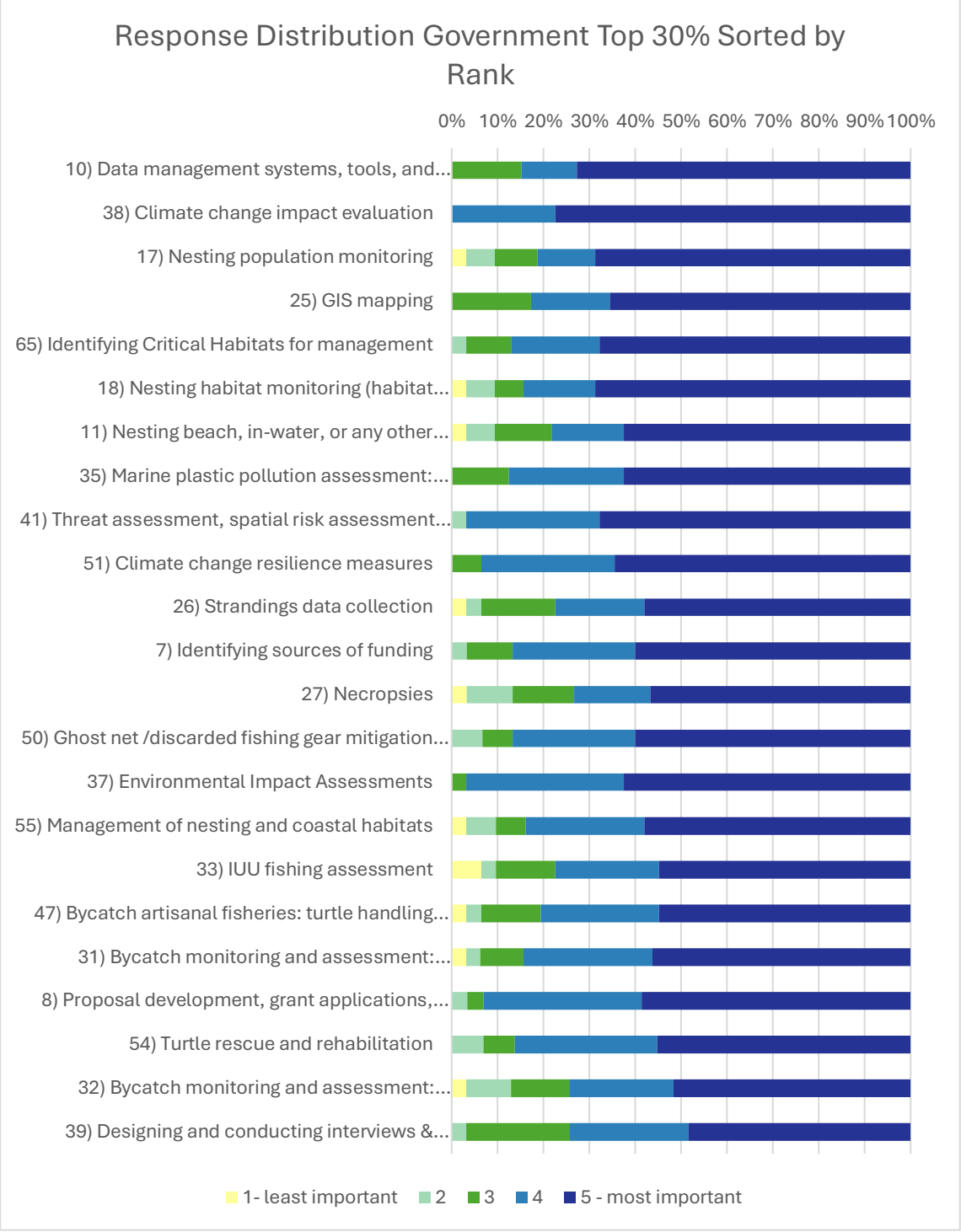


Figure 4: Response distribution of the top 30% of capacity-building topics ranked by all government respondents. Topics are sorted in descending order.

On the other hand, non-government respondents prioritised *assessment of project effectiveness* (1st), *identifying sources of funding* (2nd), and *marine plastic pollution assessment* (3rd), reflecting a stronger emphasis on project assessment, funding, and tangible conservation outcomes. Non-government respondents top 15 priority topics were:

1. *Assessment of project effectiveness/success/impact*
2. *Identifying sources of funding*
3. *Marine plastic pollution assessment*
4. *Data management systems, tools, and software*
5. *Nesting beach, in-water, or any other biological data analyses*
6. *Proposal development, grant applications, project reporting*
7. *Bycatch monitoring and assessment: artisanal fisheries*
8. *Building the capacity of law enforcement agencies*
9. *Threat assessment, spatial risk assessment and prioritization of management actions*
10. *Designing and implementing a communication strategy based on conservation communication and behaviour change theory*
11. *In-water habitat monitoring*
12. *Bycatch monitoring and assessment: commercial fisheries*
13. *Marine turtle ecosystem services / putting a value on marine turtles*
14. *Nesting habitat monitoring*
15. *Bycatch artisanal fisheries: turtle handling and release techniques*

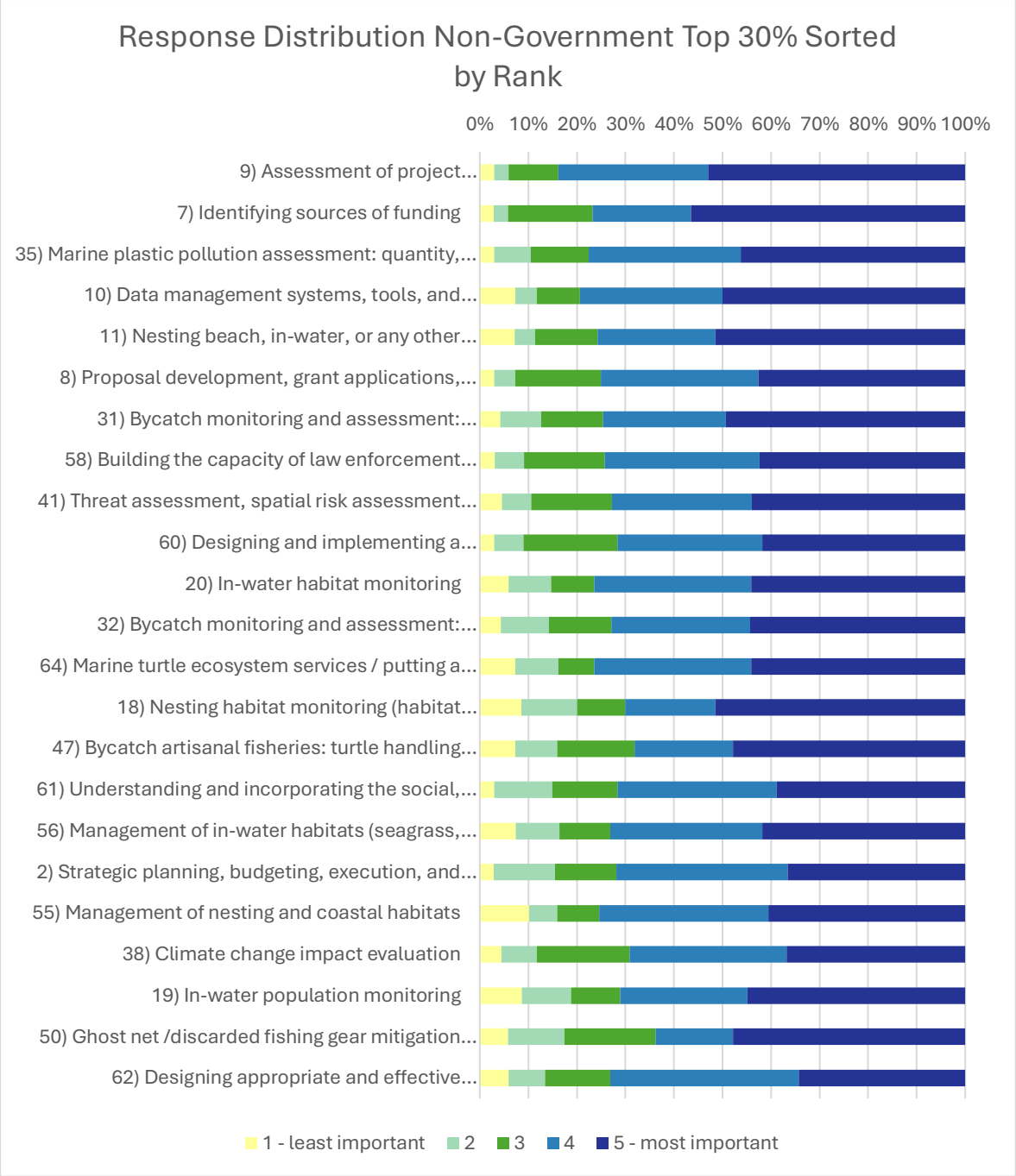


Figure 5: Response distribution of the top 30% of capacity-building topics ranked by all non-government respondents. Topics are sorted in descending order.

Compared to the responses of government respondents (see Figure 4), the responses of non-government respondents showed a more even distribution of scores across all topics within the top 30% (see Figure 5).

However, several topics rank in the Top 15 of both government and non-government respondents, including *data management systems*, *marine plastic pollution assessment*, *proposal development*, and *nesting beach biological data analyses*, indicating shared priorities across both respondent types.

Sub-regional Differences

Priority topics varied across IOSEA sub-regions, reflecting different conservation contexts and challenges, but also similar needs such as *identifying sources of funding, assessment of project effectiveness* or *marine plastic pollution assessment*. The IOSEA sub-regions Likert Scales can be found in Appendix 3.

In the West Indian Ocean (WIO) region, the highest ranked priorities included *assessment of project effectiveness* (1st), *identifying sources of funding* (2nd) and *nesting beach biological data analyses* (3rd), suggesting a strong need for institutional and project management support. Especially when regarding the Likert Scale, *identifying sources of funding* and *proposal development* were ranked with exceptionally high scores in comparison to other topics. In the WIO region, collaboration with other international agencies or agreements presents itself as a unique need within this IOSEA sub-region. Particularly, *working with CITES* and *integrating turtle management into the Ramsar Convention/Sites* were noted by respondents. At the same time, respondents from WIO ranked topics connected to the IOSEA Marine Turtle MOU higher in comparison to the other regions, emphasizing the need for the MOU to increase its support efforts in the region. Further, the region ranked topics related to fisheries higher than the other IOSEA sub-regions, including *IUU fishing assessment*, *IUU fishing mitigation measures*, and *bycatch commercial fisheries*.

In the Northwest Indian Ocean (NWIO) region, *bycatch monitoring and assessment in artisanal fisheries* ranked 1st, alongside *data management systems*, reflecting the region's particular concerns around fisheries interactions. This is accompanied by the high rankings for *bycatch monitoring and assessment of artisanal and commercial fisheries* as well as *ghost net/discarded fishing gear mitigation measures*, which were not as highly ranked among respondents of the other regions. Another focus is laid on environmental assessments such as *climate change impact evaluation, Environmental Impact Assessment* and *marine plastic pollution assessment* were also prioritised. Capacity building activities focused on environmental protection measures, such as *identifying Critical Habitats for management* and *establishing and managing a (marine) protected area* were similarly rated highly. However, when looking at the Likert Scale, it becomes clear that *marine turtle ecosystem services* were exclusively ranked with 3, 4 and 5 scores, emphasizing that this topic might be of special interest to the whole region as well.

In the Southeast Asia and Australia (SEA+) region, *data management systems* was ranked first, followed by *assessment of project effectiveness, identifying sources of funding* and *proposal development,* also emphasizing the need for project management support. Other unique topics to this specific region include *ghost net/discarded fishing gear mitigation measures*, *designing educational materials*, and *designing and implementing culturally and socially appropriate alternative livelihood strategies and community*

empowerment programmes, highlighting the importance of differing capacity building needs among the regions and SEA+'s emphasis on community engagement.

In the Northern Indian Ocean (NIO) region, *identifying sources of funding* (1st), *proposal development* (2nd), and *marine plastic pollution assessment* (3rd) were the highest priorities, followed by *data management systems* and *climate change impact evaluation*, reflecting both funding acquisition constraints and environmental pressures practitioners face in the region. The respondents further identified more turtle specific needs in this region such as *sex ratios of turtles, in-situ nest protection, understanding marine turtles,* and *turtle rescue and rehabilitation*. Additionally, and similarly to WIO, capacity needs persist regarding the IOSEA Marine Turtle MOU, particularly *focal point responsibilities and effectiveness* and *preparing a Site Network application*. The results from the NIO region reflect another crucial difference compared to the other IOSEA sub-regions. When looking at the Likert Scale, it becomes apparent that almost all topics were ranked with 3, 4 or 5 scores in the Top 30%. While this might emphasise the urgent need for capacity building interventions in the region, it can also be the result of the lower number of participants compared to other regions.

Finally, the sub-regional analysis highlights the region-specific needs for capacity building and shows that interventions need to be targeted at the regional level to account for these differences and contexts.

Other topics added by Participants

In the survey, participants were also able to add further topics not listed in the survey. Accordingly, Table 3 gives an overview of these additional topics sorted into the original sub-headings.

Table 3: Other Topics for Capacity Building Needs Added by Respondents. Topics mentioned multiple times are highlighted with bold and italic font in the table.

INSTITUTIONAL DEVELOPMENT & PROJECT MANAGEMENT
Role and responsibility of government and forest department
Inter-agency coordination on national level
Decolonization in conservation science
Collaboration with private sector
Understanding and developing proposals for new finance mechanism (e.g. blended and layered finance)
Community-based project management
Equity in conservation
Communicating and establishing relationships with policy-makers
Integration of data and reports into policy change pathways
Access to literate knowledge
Professional medical training
Training of trainees
DATA & INFORMATION SHARING
Use of technology and Artificial Intelligence for turtle research
How to translate data into conservation policy

Data sharing
Technical mentorship programme
SWOT minimum data standards for nesting beaches and bycatch programmes
Standardizing international data collection and reporting
Increasing awareness
PROJECT IMPLEMENTATION (objectives, methods, results)
Turtle handling protocol
Turtle satellite tracking
Bycatch data analysis
Stranding data analysis
Turtle species identification
Behaviour change
Continuous environmental monitoring of marine turtle habitats
Climate change adaptation strategies for coastal areas
DNA sampling
Reporting and documenting environmental violations affecting marine turtles
Nest monitoring
CONSERVATION AND MANAGEMENT
Cultural importance of turtles
Sustainable tourism practices
Rescue and rehabilitation centers
Using technology to understand sea turtle population and threats
Management of volunteers in nesting beach area and protection of such
Managing conflicts with fishers
Sea turtle nest relocation
Management plan for sea turtle conservation areas
Disease surveillance of marine turtles
Identifying new turtle nesting sites
SMART patrol
Addressing impacts of climate change to marine turtles
INTERNATIONAL/REGIONAL AGREEMENTS & INITIATIVES
Funding for higher education opportunities and research in the Global South
Transboundary turtle conservation strategy
National policy and international commitments

4. Comparison of Results with National Reports

The analysis of the 2024 National Reports submitted by the IOSEA Signatories provides additional insights in country-specific capacity requirements. When compared with the results from the Capacity Needs Assessment presented in

Table 4, both common priorities and additional areas for support emerge.

The findings of the two analyses differ slightly within countries. This may reflect the involvement of different stakeholders in preparing the national reports and responding to the survey. Nevertheless, the most mentioned capacity gaps in the survey and national reports are mostly consistent across all countries. Particularly, *identifying sources of funding, data management and sharing* as well as *building the capacity of law enforcement agencies* have been mentioned most often in the survey as well as in the national reports.

Most national reports place particular emphasis on the need for increased funding, capacity for training of various stakeholders and collaboration for marine turtle conservation. They also highlight several issues that were not captured in the survey, making direct comparison difficult. Notably, many countries reported a need for improved equipment and technology, including boats, radios, generators, and tracking devices, to support conservation activities. In addition, the restoration of marine turtle habitats, particularly seagrass beds, was identified as a priority in several national reports. This topic was not explicitly mentioned in the Capacity Needs Assessment Survey but could be interpreted under *management of in-water habitats (seagrass, coral reefs, mangroves)* which was ranked as priority 15 across all respondents, reflecting the importance of further differentiating the needs in terms of in-water habitat management.

Overall, no distinct differences in capacity priorities were identified among the IOSEA sub-regions, suggesting that many of the challenges and support requirements are shared across the region.

A review of the priority actions and capacity needs identified by the regional Marine Turtle Task Forces (MTTFs) confirms that the findings of this assessment are broadly consistent with sub-regional priorities; recurring needs highlighted by Task Force members, including funding for satellite telemetry and genetic studies, training in monitoring and data collection, and support for bycatch mitigation, closely mirror the capacity gaps identified through the capacity needs assessment.

5. Conclusion

The IOSEA MOU's Capacity Building Working Group sought to better understand the needs of Parties and practitioners across the region in order to strengthen various aspects of marine turtle conservation. With 141 respondents, the Capacity Needs Assessment highlighted the topics most in need of further capacity-building initiatives and identified where these efforts are needed. Across categories and sub-regions, several high-priority themes emerged consistently, including *identifying funding sources*, *proposal development*, *data management systems*, *marine pollution assessment*, and *climate change impact evaluation*. However, region-specific needs also remain that may vary depending on governmental or non-governmental stakeholders.

Additionally, the capacity needs reported through the national reports were included in the analysis and compared with the present results. In total, many topics emerged in both analyses, with additional needs for improving trainings, law enforcement and cooperation deriving from the national reports.

The Capacity Building Working Group will use these findings to guide the development of the Capacity Building Framework and actions by the IOSEA MOU Secretariat.

Appendix 1: The Survey

DRAFT NEEDS ASSESSMENT QUESTIONNAIRE FOR CAPACITY-BUILDING

1. Is this assessment completed by an individual, or on behalf of an organization or workshop? An individual can also complete one questionnaire for themselves and a separate questionnaire on behalf of organizations or workshops.
2. Please fill in contact details

Individual Name (if applicable)	**Organization** (e.g., Government, IOSEA Focal point, Environmental NGO, Private business, Research Institute, University, other (please specify)	**Where are you from?**	**Email Contact**
Example: Joe Bloggs	NGO - The YYY Foundation	UK	Bloggs@mail.com and/or Ngo_yyy@mail.com

3. In which country do you work in the IOSEA region? *If you work in multiple countries, please fill out a separate form for each country.*
4. If applicable, which project do you work/collaborate with? *If you work with multiple projects, please fill out a separate form for each project.*
5. Please name the project site(s) within the country.
6. From the list of capacity-building topics below:
    a. Please indicate the importance of receiving training on EACH topic for your project/country (5 being most important, 1 being least important).
    b. Then, rank (in increasing priority with 1 being the lowest priority) ALL topics selected as « 5 » including any additional topic(s) added in the “other topics” category.

c. In the final column, please indicate, with a tick mark, any topics where you could provide training.

7. Are there any other topics – not covered by the questionnaire – for which training is required? Please specify in the “other topics” rows of the questionnaire.
8. Are there any other topics – not covered by the questionnaire – for which you could provide training? Please specify in the “other topics” rows of the questionnaire.

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as “5”	Indicate where you can provide training
INSTITUTIONAL DEVELOPMENT & PROJECT MANAGEMENT								
Strategic planning, budgeting, execution, and management (including review of project goals and ongoing activities, gap analysis, prioritization, participatory mapping, desk top reviews, etc.)								
Accessing relevant scientific papers and reports for information, data, methodologies, etc. (including accessing authors)								
Acquiring national permits								
Ethical considerations in project planning and execution								
Health and safety considerations in project planning and execution								
Identifying sources of funding								
Proposal development, grant applications, project reporting								
Assessment of project effectiveness/success/impact								
DATA & INFORMATION SHARING								
Data management systems, tools, and software for the collection and archiving of all types of relevant turtle data								

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as “5”	Indicate where you can provide training
Nesting beach, in-water, or any other biological data analyses (please specify)								
Genetic analyses (analysing genetic samples, determining genetic stocks (management units); mixed stock analysis, etc.)								
Human-centric data analyses (interviews, socioeconomics, etc.)								
Public presentations (preparing a PPT/media, public speaking)								
Writing for science journals								
Social media and writing for the public (popular articles)								
PROJECT IMPLEMENTATION (objectives, methods, results)								
Nesting population monitoring								
Nesting habitat monitoring (habitat availability, beach profile, temperature, sand composition, impact of development, etc.)								
In-water population monitoring								
In-water habitat monitoring								
Sex ratios (nests, in-water)								
Age determination								
Genetics/stable isotope sampling								
Satellite telemetry								
GIS mapping								

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as “5”	Indicate where you can provide training
Strandings data collection								
Necropsies								
Aerial surveys: beaches and/or in-water (planes, drones)								
Turtle diet sampling								
Turtle health assessment								
Bycatch monitoring and assessment: artisanal fisheries								
Bycatch monitoring and assessment: commercial fisheries								
IUU fishing assessment								
Light pollution assessment								
Marine plastic pollution assessment: quantity, ingestion and entanglement rates, oceanographic features of dispersal								
Underwater noise and offshore extractive industries’ impact assessment								
Environmental Impact Assessments								
Climate change impact evaluation								
Designing and conducting interviews & surveys with stakeholders								
Educating/empowering/integrating stakeholders (please specify)								

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as “5”	Indicate where you can provide training
CONSERVATION AND MANAGEMENT								
Threat assessment, spatial risk assessment and prioritization of management actions								
Understanding marine turtles: their biology and conservation								
In-situ nest protection (feral animals, high sand temperatures, flooding/erosion, natural predation, etc.)								
Hatcheries (when to implement and hatchery management)								
Feral animal control								
Light pollution mitigation								
Bycatch artisanal fisheries: turtle handling and release techniques, bycatch mitigation strategies/technologies								
Bycatch commercial fisheries: turtle handling and release techniques, bycatch mitigation strategies/technologies								
IUU fishing mitigation measures								
Ghost net /discarded fishing gear mitigation measures								
Climate change resilience measures								
Marine pollution mitigation and determining socio-economic drivers/barriers/opportunities for management								
Illegal wildlife trade mitigation (domestic and international)								
Turtle rescue and rehabilitation								
Management of nesting and coastal habitats								

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as “5”	Indicate where you can provide training
Management of in-water habitats (seagrass, coral reefs, mangroves)								
Mitigation of offshore resource extraction impacts								
Building the capacity of law enforcement agencies								
Strengthening the national legislation and judicial process								
Designing and implementing a communication strategy based on conservation communication and behaviour change theory								
Understanding and incorporating the social, economic, and cultural aspects of human-turtle interactions								
Designing appropriate and effective educational materials for the targeted audience (please specify)								
Designing and implementing culturally and socially appropriate alternative livelihood strategies and community empowerment programmes								
Marine turtle ecosystem services / putting a value on marine turtles								
Identifying Critical Habitats for management								
Establishing and managing a (Marine) Protected Area								
Drafting a Strategy for the Conservation and Management of Marine Turtles (local and/or national)								
INTERNATIONAL/REGIONAL AGREEMENTS & INITIATIVES								
Working with CITES								

CAPACITY-BUILDING TOPICS	Comments	1	2	3	4	5	Rank ALL topics scored as "5"	Indicate where you can provide training
Working with Regional Fisheries Management Organisations (RFMOs)								
Integrating turtle management into the Ramsar Convention/Sites								
Coordinating with other International/Regional Agreements or Initiatives (please specify)								
IOSEA MARINE TURTLE MOU								
Focal Point responsibilities and effectiveness								
Preparing IOSEA National Reports								
Effective use of National Committees/Networks to involve and encourage the cooperation of Government institutions, NGOs and the private sector in marine turtle conservation programmes								
Preparing a Site Network application								
Site Network management								
Using IOSEA online tools								
OTHER TOPICS (please write in)								

Appendix 2 Demographics

Entity

Row Labels	Count of Organization Type:
Conservation Organization	1
Consultant	1
Private Firm	1
Association	1
IOSEA FOCAL POINT	2
Private business	3
Community-led initiative	3
NPO	3
Research Institute	3
University	22
Government	48
NGO	49
Grand Total	**137**

Composition

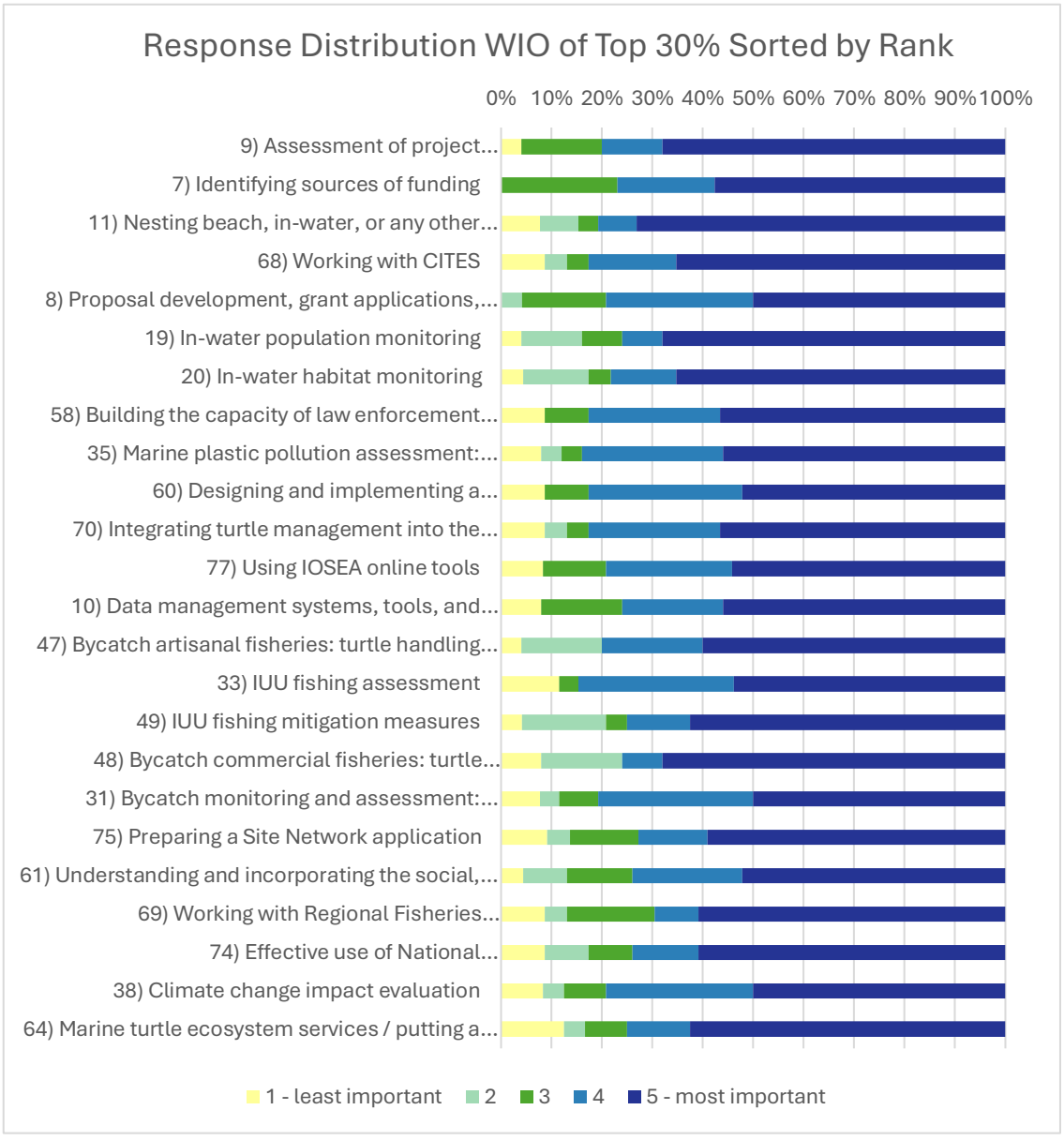
Row Labels	Count of Response Type
Individual	69
Organization	80
Grand Total	**149**

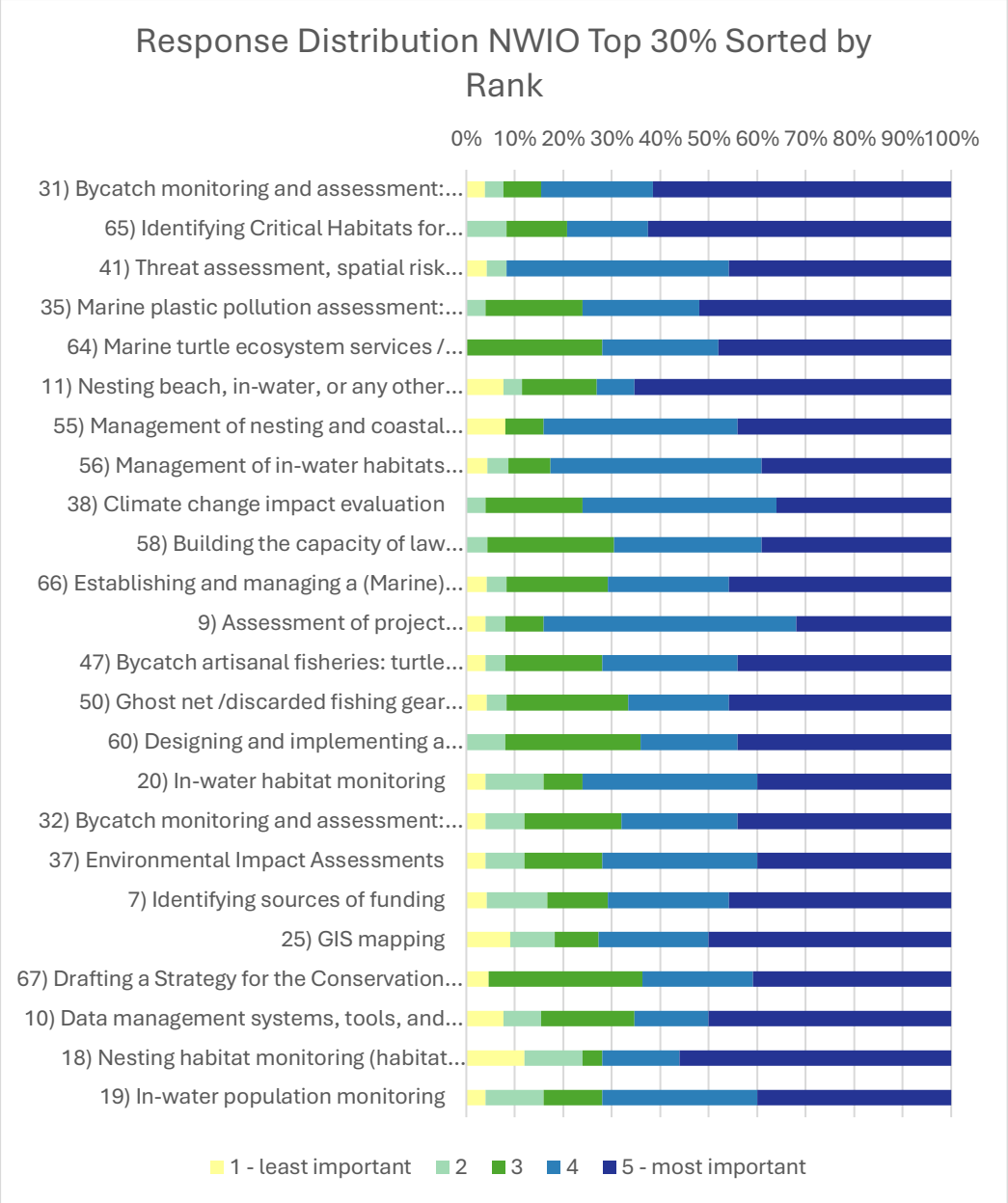
Place of origin

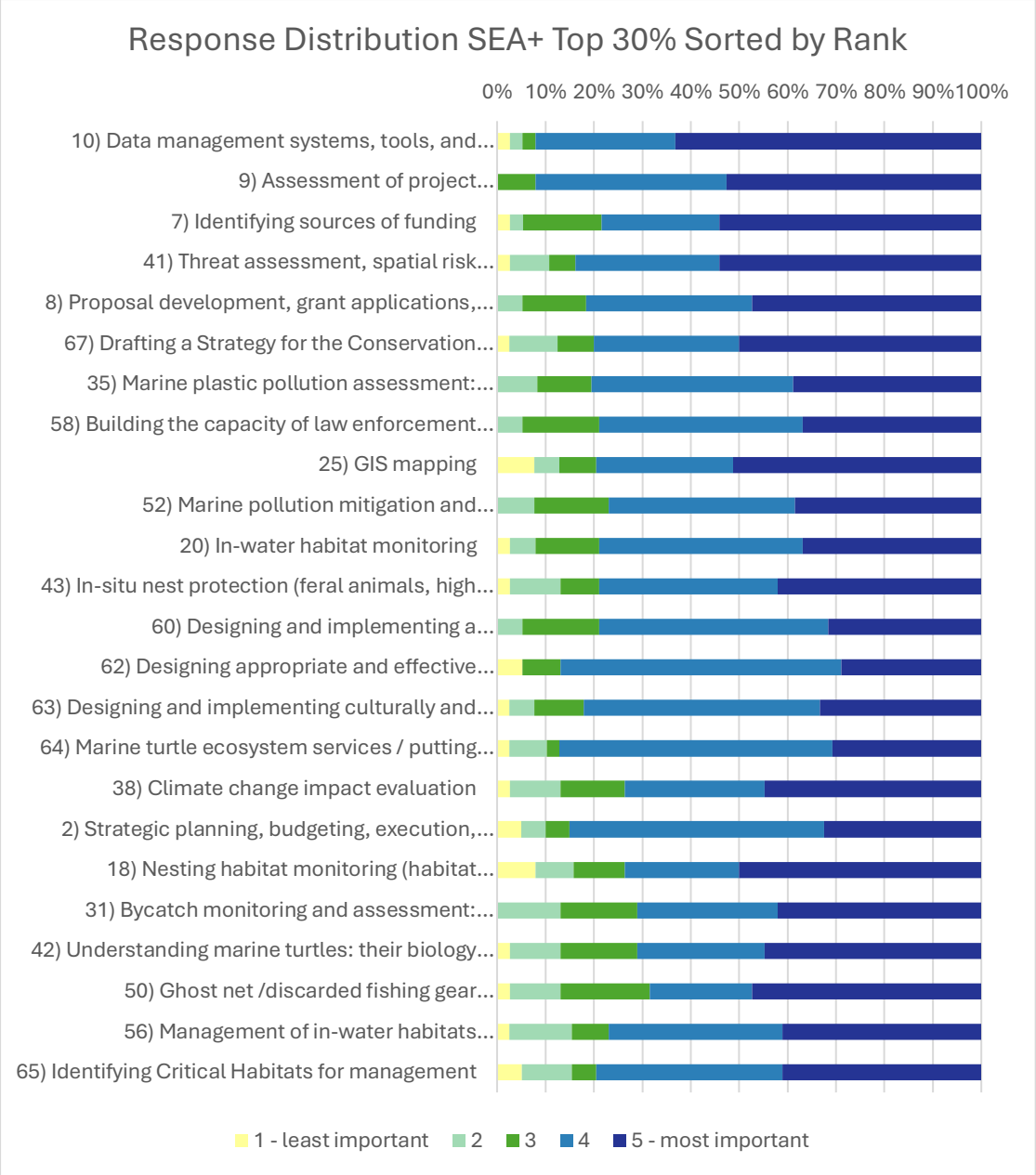
Where are you from?	Count of Where are you from?
Malta	1
Italy	1
Kuwait	1
Bahrain	1
Lebanon	1
Cambodia	1
Bahrain	1
Iran	1
Mauritius	1
Brazil	1

Oman	1
Venezuela	1
Singapore	1
Egypt	1
Sri Lanka	1
Maldives	2
Papua New Guinea	2
Vietnam	2
Qatar	2
Eritrea	2
Comoros	2
France	2
Jordan	2
Somalia	2
Germany	2
South Africa	2
Saudi Arabia	3
Mozambique	3
Myanmar	3
Netherlands	3
Tanzania	3
Pakistan	3
Madagascar	3
Australia	4
USA	4
Yemen	4
Bangladesh	4
UAE	5
Philippines	5
Thailand	6
Indonesia	8
Kenya	8
UK	11
Malaysia	12
India	13
Grand Total	**142**

Appendix 3: Sub-Regions Likert Scales




Response Distribution NWIO Top 30% Sorted by Rank
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
31) Bycatch monitoring and assessment:...
65) Identifying Critical Habitats for...
41) Threat assessment, spatial risk...
35) Marine plastic pollution assessment:...
64) Marine turtle ecosystem services /...
11) Nesting beach, in-water, or any other...
55) Management of nesting and coastal...
56) Management of in-water habitats...
38) Climate change impact evaluation
58) Building the capacity of law...
66) Establishing and managing a (Marine)...
9) Assessment of project...
47) Bycatch artisanal fisheries: turtle...
50) Ghost net /discarded fishing gear...
60) Designing and implementing a...
20) In-water habitat monitoring
32) Bycatch monitoring and assessment:...
37) Environmental Impact Assessments
7) Identifying sources of funding
25) GIS mapping
67) Drafting a Strategy for the Conservation...
10) Data management systems, tools, and...
18) Nesting habitat monitoring (habitat...
19) In-water population monitoring
1 - least important
2
3
4
5 - most important


Response Distribution SEA+ Top 30% Sorted by Rank
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
10) Data management systems, tools, and...
9) Assessment of project...
7) Identifying sources of funding
41) Threat assessment, spatial risk...
8) Proposal development, grant applications,...
67) Drafting a Strategy for the Conservation...
35) Marine plastic pollution assessment:...
58) Building the capacity of law enforcement...
25) GIS mapping
52) Marine pollution mitigation and...
20) In-water habitat monitoring
43) In-situ nest protection (feral animals, high...
60) Designing and implementing a...
62) Designing appropriate and effective...
63) Designing and implementing culturally and...
64) Marine turtle ecosystem services / putting...
38) Climate change impact evaluation
2) Strategic planning, budgeting, execution,...
18) Nesting habitat monitoring (habitat...
31) Bycatch monitoring and assessment:...
42) Understanding marine turtles: their biology...
50) Ghost net /discarded fishing gear...
56) Management of in-water habitats...
65) Identifying Critical Habitats for management
1 - least important
2
3
4
5 - most important

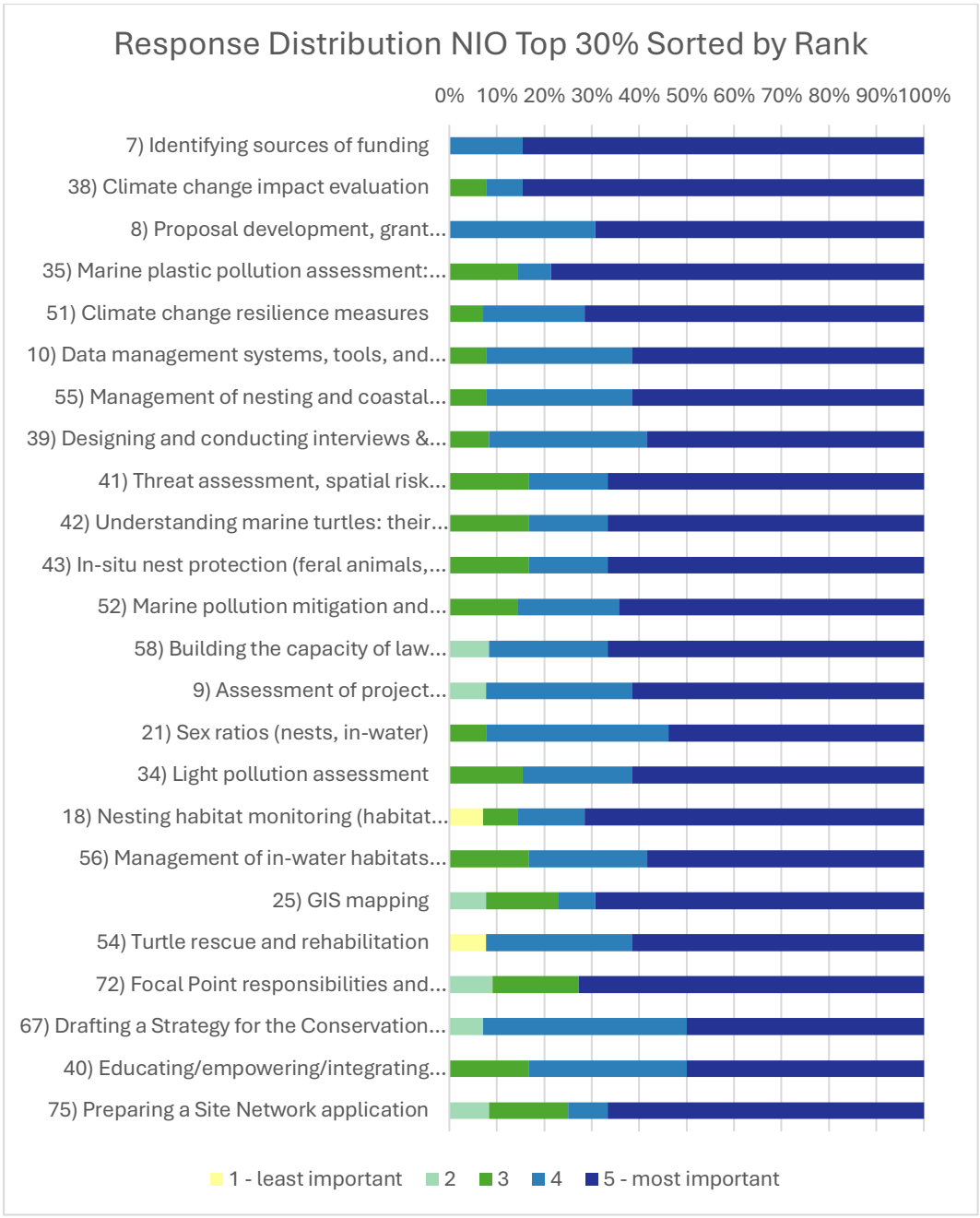

Response Distribution NIO Top 30% Sorted by Rank
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
7) Identifying sources of funding
38) Climate change impact evaluation
8) Proposal development, grant...
35) Marine plastic pollution assessment:...
51) Climate change resilience measures
10) Data management systems, tools, and...
55) Management of nesting and coastal...
39) Designing and conducting interviews &...
41) Threat assessment, spatial risk...
42) Understanding marine turtles: their...
43) In-situ nest protection (feral animals,...
52) Marine pollution mitigation and...
58) Building the capacity of law...
9) Assessment of project...
21) Sex ratios (nests, in-water)
34) Light pollution assessment
18) Nesting habitat monitoring (habitat...
56) Management of in-water habitats...
25) GIS mapping
54) Turtle rescue and rehabilitation
72) Focal Point responsibilities and...
67) Drafting a Strategy for the Conservation...
40) Educating/empowering/integrating...
75) Preparing a Site Network application
1 - least important
2
3
4
5 - most important

Table 4: Overview of Countries and their Highest Ranked Capacity Building Topic Needs. The Capacity Building Needs from the National Reporting Analysis are marked with "*".

	Australia	Bahrain	Bangladesh	Cambodia	Comoros	Egypt	Eritrea	India	Indonesia	Jordan	Kenya	Kuwait	Madagascar	Malaysia	Maldives	Mauritius	Mozambique	Myanmar	Oman	Pakistan	PNG	Philippines	Qatar	Réunion	Saudi Arabia	Seychelles	Singapore	Somalia	South Africa	Sri Lanka	Tanzania	Thailand	UAE	Vietnam	Yemen
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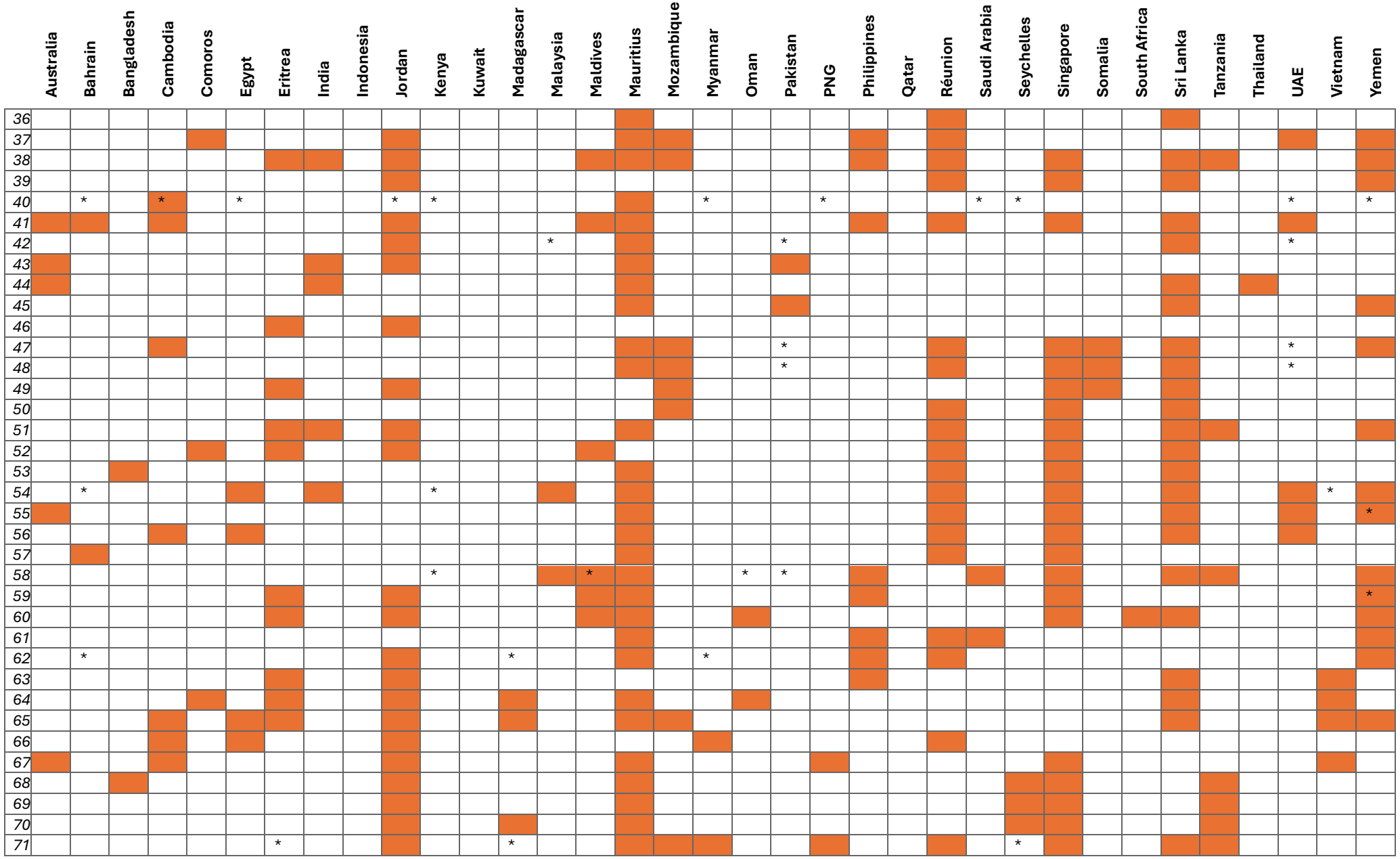
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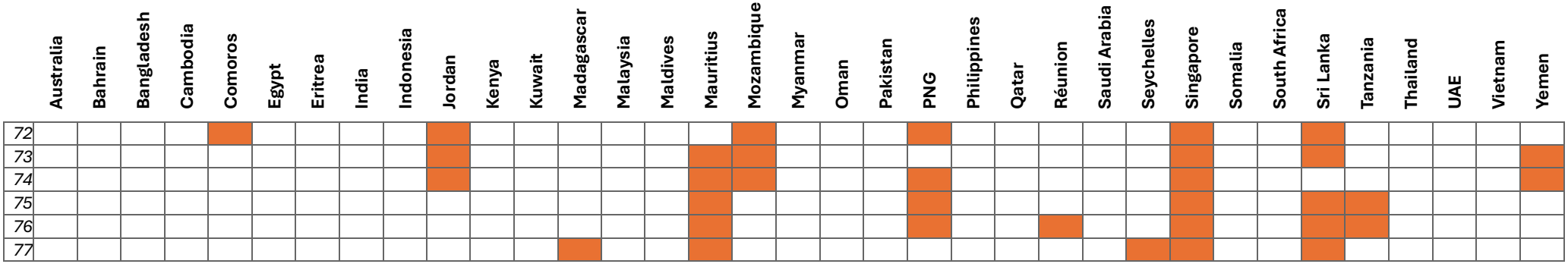
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Philippines
Qatar
Réunion
Saudi Arabia
Seychelles
Singapore
Somalia
South Africa
Sri Lanka
Tanzania
Thailand
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Vietnam
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