



**2016 – 2019 National Report Analysis  
Memorandum of Understanding on  
the Conservation and Management of  
Dugongs and their Habitats throughout  
their Range**

**Samantha Tol and Helene Marsh  
February 2022**

# 2016 – 2019 National Report Analysis

## Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range

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## EXECUTIVE SUMMARY

1. This report summarizes the information provided in the most recent National Reports submitted to the Dugong MoU Secretariat as the foundation for a review of the National Report format to ensure it provides a practical format for reporting the implementation of the Dugong MoU including any measures of conservation and management effectiveness.
2. The response rate for reports submitted for the 2017 Meeting of Signatories (MOS) was good, with all except one report delivered before the end of 2017. Eighty-three percent of the signatory dugong range states (hereafter “range states”) completed a National Report, along with four non-signatory dugong range states. Of the 28 reports submitted, all except three used the 2016 format. These format differences prevented meaningful comparisons so the statistics in this report are based on the 25 reports submitted in the 2016 format.
3. These 25 reports explicitly reflect the current version of the Conservation and Management Plan for the Dugong MoU and enable an evaluation of how the menu of actions suggested by this Plan has been reportedly implemented.
4. The initiatives reported as implemented by at least 80% of reporting countries were either government initiatives (monitoring; protected areas) or aimed at facilitating domestic partnerships, rather than community-based initiatives.
5. The initiatives implemented by 20% or fewer respondents were:
  - regional initiatives;
  - initiatives involving fishing controls, waste disposal, incentives, establishing information centers and lists of experts; and
  - Initiatives requiring sophisticated, dedicated research (migratory routes, population dynamics and survival rates; critical habitat), which may be unrealistic as this information is rarely available even for extensively-studied dugong populations.
6. The National Report template is designed for self-reporting. There is no external review, quality control or requirement to identify the evidence used to make the assessment. The Report reflects what is being done rather than the effectiveness of what is being done.
7. We suggest that national reporting could be improved with changes to the template, which would:
  - make it easier to evaluate how comprehensively and accurately reporting countries explain how they are implementing the Conservation and Management Plan; and
  - enable a feedback loop in the planning cycle. Our suggestions borrow from the format for CMS National Reports <https://www.cms.int/en/documents/national-reports>:
8. This reform could be further enhanced by several additional initiatives:
  - Ask the signatory range states to submit a new National Report in 2022 in time for MOS4 preferably using the suggested revised template on a trial basis.

- Work with the IUCN Sirenia Specialist Group to develop a list of experts, including details of expertise and contact details, with a view to posting this list of the Dugong MoU website, as a source of local advice to signatory states.
- Define regional groupings of countries as part of the MOS4 agenda and provide time during MOS4 for the regional groups to workshop potential regional activities.
- Dedicate a session at MOS4 or the associated technical meeting to workshop options for reducing the incidental capture of dugongs in fishing gear, as this threat is not only the major source of dugong mortality in most parts of the species' range but is addressed in relatively few National Reports.
- Explicitly encourage the countries participating in the IKI project to implement additional initiatives suggested in the Duong MoU Conservation and Management Plan.
- Advise reporting countries to complete their National Report in association with other relevant agencies, researchers and NGOs, to increase the likelihood of a comprehensive response.
- With the approval of the signatory range states update the document, 'Regional Status and Priority Actions for Dugong range states' (Marsh et al. 2002), and provide an additional reporting methodology as part of the regular reporting process under the MoU process. This reporting system could be in on-line WIKI format to enable regular updates and more up-to-date information and, through the involvement of the IUCN Sirenian Specialist Group and relevant government authorities, allow for quality control, government engagement and capacity building.

## TABLE OF CONTENTS

Executive Summary.....	iv
1 Introduction.....	1
2 Methods.....	3
3 Results.....	4
3.1 Section 1: General Information.....	4
3.2 Section 2: Dugong Status .....	6
3.3 Section 3: Dugong Habitats.....	17
3.4 Section 4: Research and Monitoring .....	22
3.5 Section 5: Dugong Conservation .....	29
3.6 Section 6: Cooperation.....	35
3.7 Section 7: Implementation of the MoU.....	45
3.8 Section 8: Country Priorities .....	52
4 Key Findings.....	57
5 Suggestions For A Way Forward .....	60
6 References.....	64
7 Appendices .....	65
Appendix 1: National Report Template – 2016 version.....	65
Appendix 2: Data on Signatory and range states.....	80
Appendix 3: Performance in National Report for Section 2 – Dugong Status.....	82
Appendix 4: Performance in National Report for Section 3 – Dugong Habitats .....	86
Appendix 5: Performance in National Report for Section 4 – Research and Monitoring .....	88
Appendix 6: Performance in National Report for Section 5 – Dugong Conservation .....	93
Appendix 7: Performance in National Report for Section 6 – Co-operation.....	96
Appendix 8: Performance in National Report for Section 7 – Implementation of the MoU .....	107

## 1 INTRODUCTION

The Convention on Migratory Species (CMS) is a multilateral environmental agreement of the United Nations, which has provided a global platform for the conservation and sustainable use of migratory animals and their habitats since it came into effect in 1983. The Convention brings together the countries through which migratory animals pass, known as range states, and lays the legal foundation for internationally coordinated conservation measures throughout the migratory range of species listed under the Convention.

Migratory species threatened with extinction are listed on Appendix I of the Convention; those that need or would significantly benefit from international co-operation are listed in Appendix II.

The CMS acts as a framework convention that encourages the range states for a listed species to develop agreements including legally binding treaties and less formal instruments, such as Memoranda of Understanding. The dugong, which is listed as Vulnerable to Extinction at a global scale by the IUCN, has been listed in Appendix II of the Convention since 1979. The Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong dugon*) and their Habitats throughout their Range (Dugong MoU) entered into effect on 31 October 2007. The Dugong MoU is administered by a secretariat-based CMS's regional office in Abu Dhabi, United Arab Emirates.

Conservation activities implemented by Signatories to the Dugong MoU are guided by a Conservation and Management Plan (CMP) annexed to the MoU. With nine objectives, the CMP addresses conservation of dugongs and their seagrass habitats, awareness and education, and cross-cutting issues.

As of December 2021, there are 48 range states (including France and its territories Mayotte and New Caledonia separately), of which 29 are signatories to the MoU (counting France, Mayotte and New Caledonia, separately). The most recent meeting of Signatories to the Dugong MoU was held in Abu Dhabi in March 2017.

National Reports are the official documents by which countries report to the decision-making bodies of the CMS and/or its instruments on the measures they have undertaken to implement the priorities of the Dugong MoU. National Reports aim to provide an official record of national implementation of each instrument over time and collectively draw the picture of the overall implementation of the instrument.

This report summarizes the information provided in the most recent National Reports submitted to the Dugong MoU Secretariat between 2016-2019, as the foundation for a review of the National Report template, to ensure it provides a practical format for reporting implementation of the Dugong MoU, including any measures of conservation and management effectiveness.

## 2 METHODS

All National Reports were downloaded from the Convention of Migratory Species (CMS) Dugong MoU website (<https://www.cms.int/dugong/en/documents/national-reports>) before December 2021. Only reports submitted after November 2016 were selected for analysis.

The 2016 version of the National Report template (Appendix 1) is divided into eight sections. Each section comprises a set of yes/no questions, each of which can be answered through a checkbox, plus open-ended questions designed to be answered in free-form text. The report includes 41 questions as follows: 22 required checkbox responses, 13 open-ended questions, one checkbox table and five general questions about the responding country. The report was broken up into eight sections. Each reporting section was analyzed separately to enable comparisons between the 25 reporting countries that completed their report using the 2016 template. The remaining three reporting countries used a superseded template; their reports were analyzed separately, except for Section 1. A performance score was awarded to responses (Table 1) where appropriate as explained below

### *Performance calculation*

All questions that did not require a written response were scored on the percentage of reporting countries that provided a positive response to the question. The score was determined by the percentage intervals in Table 1.

**Table 1:** Uptake grade scale calculated as the proportion of positive responses to each checkbox question.

<b>Overall Score</b>	<b>Percentage</b>
Very Limited Uptake	$\leq 20\%$
Limited Uptake	$21 \leq 40\%$
Moderate Uptake	$41 \leq 60\%$
Good Uptake	$61 \leq 80\%$
Very Good Uptake	$> 80\%$

## 3 RESULTS

### 3.1 Section 1: General Information

Section 1 covers general information on the reporting country including whether it is a signatory range state and when it signed the MoU, as well as any organizations that assisted with the completion of the National Report (see Appendix 2).

#### ***National Report submissions***

The reporting arrangements assume a total of 48 range states; 29<sup>1</sup> of which have signed the Dugong MoU. Most signatory range states returned a National Report for the 2017 MOS, with all except one report reviewed here delivered before the end of 2017; 24 signatory range states completed the 2016 version of the National Report template (Table 2). Of the 19 Non-signatory range states, four completed a National Report (Table 2) between 2016 and 2019. Of the 28 reports submitted, all except three used the 2016 template. The exceptions were: New Caledonia, Mayotte and Viet Nam, all of which submitted their reports using a superseded template.

#### ***Collection of data and completion of the report***

Most reporting countries completed and submitted their own National Report. The only report completed and submitted by a non-government organization was from the Seychelles. The Seychelles Island Foundation (SIF) provided this report, with the government agency, the Department of Environment (Seychelles), listed as “assisting with data collection”.

Most (17) reporting countries obtained assistance from non-government organizations in the collection of data; eight countries from universities and/or research organizations; 15 from a variety of NGOs. Most of these organizations were local, however, World Wildlife Fund (WWF) was listed as assisting Kenya, Myanmar and Viet Nam, while the International Union for the Conservation of Nature (IUCN) was listed as assisting Sri Lanka and Viet Nam. The Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) was listed as assisting Papua New Guinea in the collection of data. Eight reporting countries did not report assistance outside of their country’s government agencies: Australia (where most of the research is conducted by universities and State governments rather than federal agencies), Bahrain, Egypt, Eritrea, India, Indonesia, Thailand and the United Arab Emirates. Three signatory range states did not provide information for this question: Mayotte (France), Palau and Sudan.

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<sup>1</sup> There are 27 signatory range states but New Caledonia and Mayotte submit their reports separately via France making a total of 29.

**Table 2:** Details of the reporting countries with the respect to the Dugong MoU National Report for the period 2016-2019.

<b>signatory range states<sup>2</sup> that returned a National Report</b>	<b>signatory range states that did not return a National Report<sup>3</sup></b>	<b>Non-signatory States that returned a National Report</b>	<b>Non-signatory States that did not return a National Report</b>
Australia	Bangladesh	Indonesia	Brunei Darussalam
Bahrain	Comoros	Jordan	Cambodia
Egypt	Timor-Leste <sup>2</sup>	Malaysia	China
Eritrea	Yemen	Viet Nam	Djibouti
India			Iran
Kenya			Iraq
Madagascar			Israel
Mayotte (France)			Japan
Mozambique			Kuwait
Myanmar			Maldives
New Caledonia (France)			Mauritius
Palau			Oman
Papua New Guinea			Pakistan
Philippines			Qatar
Saudi Arabia			Singapore
Seychelles			
Solomon Islands			
Somalia			
Sri Lanka			
Sudan			
Tanzania			
Thailand			
United Arab Emirates			
Vanuatu			

<sup>2</sup> France did not provide a report separate from those of Mayotte and New Caledonia; their reports were submitted by France, which is the official signatory state.

<sup>3</sup> Timor-Leste signed the Dugong MoU in September 2018.

### 3.2 Section 2: Dugong Status

#### *Question objectives*

The questions in this Section addressed the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 1: Reduce direct and indirect causes of dugong mortality
  - 1.1 Threats facing dugong populations
  - 1.2 Dugong mortality in fishing activities
  - 1.3 Dugong mortality due to human activities
  - 1.4 Illegal take of dugongs
  - 1.5 Sustainable use of dugongs
- Objective 8. Improve legal protection of dugongs and their habitats
  - 8.2 Legal protection

#### *Results summary*

Overall, the reporting countries indicated that they were addressing the relevant objectives and actions of the Dugong MoU Conservation and Management Plan in this Section: nine key initiatives were scored as “Good Uptake” and six as “Moderate Uptake” (Appendix 3). The percentage of positive answers to each of the checkbox alternatives for questions that invited a yes/no option are summarized in Table 3.

**Table 3:** The percentage of positive answers to the checkbox alternatives in Section 2.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
6	Which of the following has your country done to identify, assess and evaluate the threats to dugong populations?	<p>Established baseline data collection and monitoring programmes to gather information on the nature and magnitude of threats (90%).</p> <p>Determined those populations affected by traditional subsistence and customary use, incidental capture in fisheries, and other sources of mortality (76%).</p> <p>Regularly updated existing data on threats to dugong populations and their habitats (66%).</p> <p>Conducted socio-economic studies among communities that interact with dugongs and their habitats (52%).</p>

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
9	Which of the following has your country done to reduce the incidental capture and mortality of dugongs as a result of fishing activities (i.e., bycatch of dugongs)?	<p>Liaised and coordinated with fishing industries, fisheries management organisations and community groups to develop and implement activities that reduce the incidental capture and mortality of dugongs (62%).</p> <p>Limited or controlled the use of gears known to be harmful to dugongs throughout the range of dugong (58%).</p> <p>Developed procedures and extension programmes to promote implementation of these measures (44%).</p> <p>Developed and used gear, devices and techniques to minimise incidental capture of dugongs in artisanal and commercial fisheries, such as the use of alternative gears and spatial closures (20%).</p> <p>Exchanged information and, upon request, provided technical assistance to Signatory and cooperating States to promote these activities (20%).</p> <p>Provided and ensured the use of onshore facilities for the disposal of ship-borne waste (16%).</p> <p>Developed and implemented net retention and recycling schemes to minimise the disposal of fishing gear at sea and on beaches. (12%).</p>
10	Which of the following has your country done to reduce the incidental mortality of dugongs from other anthropogenic (human) activities?	<p>Assessed the level, location and impact of anthropogenic impacts on dugongs at ecologically relevant scales (60%).</p> <p>Reduced, as much as possible, all other human impacts on dugongs and their habitats in areas that sustain subsistence and/or customary use of dugongs (56%).</p> <p>Established appropriate management programmes to ensure that anthropogenic impacts are addressed, taking account of the temporal and spatial variability of dugong reproductive rates and other impacts on the species in a precautionary manner (44%).</p>

The areas where responses indicated that initiatives were least developed were in Question 9: “Initiatives to reduce the incidental capture and mortality of dugongs as a result of fishing activities”: Specifically, Questions 9f (“Providing and ensuring the use of onshore facilities for the disposal of ship-borne waste”) and 9g (“Developing and implementing net retention and recycling schemes to minimize the disposal of fishing gear at sea and on beaches”) had “Very Limited Uptake” with less than 20% of the reporting countries reporting any initiatives. The response score for Question 9d (“Exchange information and, upon request, provide technical assistance to signatory and cooperating

Dugong MoU: 2016 – 2019 National Report Analysis States to promote these activities”) also indicated “Poor Uptake” with only 20% of responses reporting any such activity, despite it being central to the objectives of the Dugong MoU.

There were four long response questions within this Section: Questions **8** (“What kind of measures has your country undertaken to address these threats”); **12** (“What has your country done to prevent the illegal take of dugongs”); **14** (“What has your country done to ensure that customary and/or subsistence use of dugongs is sustainable”); and **16** (“What kinds of legal protection are dugongs and/or their habitats granted and what measures have your country developed to review and, where necessary, strengthen legal protection of dugongs and their habitats”). All four of these open-ended response questions were linked to the respective previous question, therefore only reporting countries which selected “yes” to the previous question were invited to provide a written response.

### **Detailed results**

#### *Measures to address these threats to dugongs (questions 7 and 8)*

Question **8** was linked to Question **7** (“Has your country taken measures to address these threats to dugongs”) to which 18 reporting countries answered “yes”. All except two of these countries provided a qualitative response for Question **8**; Kenya and United Arab Emirates did not respond. Many of the responses were short, describing areas of research and data collection or awareness programs; some countries provided details of specific government-enforced conservation policies and/or training (Box 1). The response from Australia suggests two problems with the reporting framework: (1) The responses were not always restricted to the time since Australia signed the Dugong MoU. For example, although the “Threat Abatement Plan for the impacts of marine debris on vertebrate marine life” dates from 2018, the other initiatives date from before Australia signed the Dugong MoU in 2007; (2) The responses were not always the most recent, significant examples. For example, the re-zoning of the Great Barrier Reef World Heritage Area and resultant industry restructuring, which increased the protection of dugongs from fishing impacts by 56% (573 km<sup>2</sup>) from 2005 compared with the previous arrangements that included the Dugong Protected Areas, which date from the 1990s (Grech et al. 2008) was not mentioned, despite the changes contributing to a 22% decline in the spatial extent of conducted netting. This omission suggests a lack of specialist input into Australia’s response.

**Australia:**

*“Australia has undertaken a number of measures with the aim of reducing threats to dugongs, such as (but not limited to) developing a Threat Abatement Plan for the impacts of marine debris on vertebrate marine life, implementing Dugong Protection Areas that limit the types of fishing equipment allowed to be used, and implementing vessel speed limits in a number of coastal areas frequented by dugongs.”*

**India:**

*“Government of India is being implementing a Centrally Sponsored Scheme titled “Integrated Development of Wildlife Habitats”. Under this Scheme financial and technical assistance is being provided to the State/Union Territory Governments for conservation of wildlife and their habitats. One of the components of the scheme is “Recovery of Critically Endangered Species” and the Dugongs has been identified as one of the 15 species for initiating this recovery programmes in India.”*

**Philippines:**

*“Comprehensive Landuse Plans of Local Governments. Dugongs and their seagrass habitats has benefited in these process where dugong habitats are set aside as locally managed protected areas or sanctuaries (e.g. Green Island Bay, Leganes, Iloilo). Zoning is pursued to protect critical grazing areas from the risk of fish corals and gill nets which are known to be the major cause of dugong accidental capture.”*

**Box 1:** Examples of qualitative responses to Question 8 “What kind of measures has your country undertaken to address these threats?” in the National Reports 2016-2019.

*Actions to reduce and/or prevent the illegal take of dugongs (questions 11 and 12)*

Question 12 is linked to Question 11 (“Has your country undertaken actions to reduce and/or prevent the illegal take of dugongs”); 17 reporting countries answered “yes”. All except one of these countries, the United Arab Emirates, provided a qualitative response. Many of the responses consisted of listing wildlife or species-specific legislation implemented by the reporting countries in the past; some countries provided detail about programs or training recently undertaken (Box 2). Palau and Seychelles left a response even though they selected “no” in response to Question 11. The Seychelles stated that “The illegal take of dugongs is not known to occur”, while Palau stated that they have “Increased penalties for killing or causing injury to a dugong or possessing or selling dugong parts”.

**Australia:**

*“...the Australian Parliament passed the Environment Legislation Amendment Act 2015, which increases the protection for turtles and dugong by tripling penalties for killing or injuring these species. In addition, the Great Barrier Reef Marine Park Authority in Queensland has a dedicated Indigenous Compliance Team which delivers targeted training and development of Compliance and Management Plans to support Indigenous Rangers, Traditional Owners and Indigenous Communities”*

**Philippines:**

*“Preventing illegal hunting of wildlife is being pursued with increase number of deputized wildlife enforcement officers. This is in addition to the existing mechanisms on the deputation of marine patrol officers (“bantay Dagat”). Nationwide training of wildlife enforcement officers (WEOs) leading to the creation of national wildlife enforcement network was initiated since 2010. WEOs, include police officers, local officials, and fisherfolks.”*

**Thailand:**

*“The interview survey of these local villagers in 2014, using the UNEP/CMS Dugong MOU standardised interview method revealed that more than 95% of the interviewees knew that catching a dugong is illegal.... The government organisation such as Department of Marine and Coastal resource also has been providing training course on Rescue and Management of a stranded dugong for veterinarians, biologists as well as local volunteers.”*

**Box 2:** Examples of qualitative responses to Question 12 “What has your country done to prevent the illegal take of dugongs?” in the National Reports 2016-2019.

*Customary and/or subsistence use of dugongs (questions 13 and 14)*

Question 14 is linked to Question 13 (“Is customary and/or subsistence use of dugongs allowed in your country”), with all five countries (Australia, Myanmar, Papua New Guinea, Solomon Islands and Vanuatu) that answered “yes” to Question 13 providing a response. Three of the five reporting countries that allow subsistence take of dugongs, provided evidence of measures designed to ensure sustainable take: Australia, Papua New Guinea and Vanuatu (Box 3) but no evidence of the efficacy of any of these measures. Myanmar stated that their government has enacted Wildlife Laws, and that dugongs are a “fully protected species”. The Solomon Islands reported that they are working on the “development of management plans with local communities having dugong populations” and undertaking “community awareness and strengthening traditional governance in communities”, however, the response did not provide information specific to sustainable take. The Australian and Papua New Guinean responses included activities that originated prior to their signing the Dugong MoU.

**Australia:**

*“Culturally appropriate management programs to ensure customary use of dugongs is sustainable include:*

- *Development of Torres Strait Islander community-based management plans to manage turtles and dugongs, supported by the Torres Strait Regional Authority; and*
- *Development of Traditional Use of Marine Resource Agreements (TUMRAs) between the Great Barrier Reef Marine Park Authority and Traditional Owners”*

**Papua New Guinea:**

*“In the MORO MOMORO GAMO Management Plans it has sections that clearly details take of dugongs ONLY by use of traditional gear and by non-powered canoes, only by sail. Restrictions also relates to take of one or more must be shared by the whole community”*

**Vanuatu:**

*“The use of dugongs only allowed if required for traditional ceremonial purposes. Any person wishing to take a dugong is required to obtain a permit from the Director of Vanuatu Fisheries Department at least 14 days prior to taking a dugong and the permit may be restricted by Size, age, sex, numbers, method of taking of dugongs and the provision of relevant data regarding dugong taking.”*

**Box 3:** Examples of qualitative responses to Question 14 “What has your country done to ensure that customary and/or subsistence use of dugongs is sustainable?” in the National Reports 2016- 2019.

*Legal protection of dugong and/or their habitats (questions 15 and 16)*

Question 16 was linked to Question 15 (“Are dugongs and/or their habitats granted legal protection in your country”); 19 reporting countries answered “yes”. All except one of these countries (Madagascar) left a response (Box 4). Many of the responses consisted of listing wildlife or species-specific legislation implemented by the reporting countries government in the past, while some countries went into detail about new protected areas or increasing current protected dugong habitats (Box 4). However, Palau’s response stated that only dugong habitats are not legally protected, implying that dugongs are protected. Palau’s response to Question 12, and the fact that dugongs are a protected species under the Palauan *Dugong Protection Act – 1993*, suggests they should have selected “yes” in response to Question 11 and illustrates a problem with quality control in the responses.

**India:**

*“Important habitats of Dugongs have already been designated as Protected Areas thus protecting their habitat e.g., Gulf of Mannar Marine National Park, Gulf of Kutch Marine National Park, Mahatma Gandhi Marine National Park, Jhansi Rani Marine National Park, etc. However, some more areas have been identified by the Wildlife Protected Area Network with the participation of local communities.”*

**Mozambique:**

*“The country has increased the number of MPA from three to five. Two new conservation areas protecting dugongs and their habitats (and other marine species) were proclaimed: The Ponta do Ouro Marine Partial Reserve, which protects dugongs and seagrass habitats of Maputo Bay. The Primeiras and Segundas Archipelago Marine Protected Area increased the amount of habitat protection since 2013. The area consists of about 10 islands and cover up to 4020 square miles and is located in central Mozambique, north of Zambezi River.”*

**Tanzania:**

*“The Government of Tanzania through Department of Fisheries Development established a National Committee namely; “Tanzania Turtle and Dugong Conservation Committee”. The main functions of the Committee include, but are not limited to the following: i) Formulation of National Dugong Action Plans (based on CMP); ii) Development of strategies for the implementation of National Dugong Action Plans through the combined efforts of National Government institutions, NGOs, Donors and Private Sector; iii) Fundraising for dugong conservation and management activities; iv) Acting in an advisory capacity to decision-makers within the United Republic of Tanzania; v) Enhancing national cooperation with regard to dugongs conservation; vi) Enhancing regional and international cooperation with regard to dugongs conservation.”*

**Box 4:** Examples of qualitative responses to Question 16 “What kind of legal protection are dugongs and/or their habitats granted and what measures has your country developed to review and, where necessary, strengthen legal protection of dugongs and their habitats?” in the National Reports 2016-2019.

*Other initiatives (questions 6, 9, 10)*

Three of the seven checkbox questions included the option of “other” to enable the responding country to provide information on additional different initiatives undertaken to meet that question’s objective. Five countries provided “other” information in their response to Question 6: Jordan stated that “No action yet were taken due to extreme scarcity of dugongs”; Myanmar stated that “Collecting information about bycatch, stranding carcass, recorded, picture and educated local fishers, local communities about awareness about conservation”; the Philippines stated that “The incidental captures, strandings and reported sightings are recorded by BMB based on the reports submitted by the DENR Regional/Field Officers and conservation organizations”; Saudi Arabia stated that “Socio-economic studies among communities that interact with dugongs and their habitats are planned in 2017”; and Sri Lanka stated that “Awareness programs for dugongs killed in fisheries by-catch”.

Five countries provided “other” information in their response to Question 9 (“Which of the following

Dugong MoU: 2016 – 2019 National Report Analysis has your country done to reduce the incidental capture and mortality of dugongs as a result of fishing activities (i.e., bycatch of dugongs”). India identified multiple community-based programs to assist dugongs and bring awareness to citizens (see their National Report for further details (<https://www.cms.int/en/document/national-report-india-3>); Indonesia highlighted “Training/capacity building for fisheries communities to strengthen awareness”; Mozambique stated that “Within MPAs where dugongs occur, and in coastal areas where dugongs are common, some fishing gear are not licensed (for example: shark nets are not licensed)”; Philippines reported that they are conducting information/awareness campaigns in coastal communities and capacity-building/training of local government units on proper response during dugong strandings/encounters (see their National Report for further detail (<https://www.cms.int/en/document/national-report-philippines-0>); and the United Arab Emirates explained that they “Developed and implemented education awareness programmes for stakeholders”.

Six countries provided “other” information in response to Question 10 (“Which of the following has your country done to reduce the incidental mortality of dugongs from other anthropogenic (human) activities?”). Indonesia stated that it “Had attempted to establish seagrass local community protected area in Bintan”; Malaysia reported that it is “In the process of establishing appropriate management programmes for anthropogenic impacts”; Mozambique said that “At local level, in the MPAs, there are measures and management programs to address anthropogenic impacts. However, due to lack or limited data on temporal and spatial variability of dugong reproductive rates and distribution measures have not taken this into account”; the Philippines explained that “Measures to reduce the risk of seaweed farm lines are being undertaken in Busuanga, Palawan”; and the United Arab Emirates stated that they had implemented a “Declaration of MPAs in dugong-dense areas and management of such protected sites”. Kenya provided further information on every key initiative met, even when not requested.

### ***Overall performance of initiatives***

There was a relationship between the estimated size of a reporting country’s dugong population and how many of the key initiatives were being implemented (Table 4). Most countries estimated to have very small dugong populations (or no data available) did not implement key initiatives; no such country met nearly all of the initiatives. Conversely, countries estimated to have moderate to high dugong populations were likely to report undertaking key initiatives, including Australia, the only country which reported undertaking almost all of the initiatives. Saudi Arabia, a country with a Very High Human Development Index (HDI) and large estimated dugong populations reported implementing

relatively few initiatives. Conversely, Somalia and Kenya, countries with Low to Medium HDIs and very low dugong populations reported that they were undertaking most of them.

**Table 4:** Matrix table illustrating the relationship between the estimated dugong populations of reporting countries and how comprehensively they met the key initiatives covered by Section 2 of the latest National Report (2016-2019).

Dugong Population*	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Sudan Jordan	Palau Seychelles	Egypt Tanzania Eritrea	Somalia Sri Lanka Kenya	
Low (100s)		Vanuatu	Madagascar Malaysia Myanmar Mozambique	Philippines Thailand India	
Moderate (1000s)		Indonesia	Saudi Arabia Papua New Guinea Solomon Islands	Bahrain United Arab Emirates	
High (10,000s)					Australia

\* Dugong population data are from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and Marsh *personal communication*.

All of the IKI partners met at least 20% of the key initiatives (Table 6). This information is included to provide a baseline for IKI partner countries.

**Table 5:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they met the key initiatives covered by Section 2 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Sudan Jordan	Palau Seychelles	Saudi Arabia Myanmar Egypt Papua New Guinea Tanzania Eritrea	Somalia Philippines Bahrain United Arab Emirates Thailand Kenya India	Australia
<b>Yes</b>		Vanuatu Indonesia	Madagascar Malaysia Mozambique Solomon Islands	Sri Lanka	

**Table 6:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they met the key initiatives covered by Section 2 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Sudan Jordan	Palau Seychelles Vanuatu	Saudi Arabia Myanmar Madagascar Egypt Papua New Guinea Tanzania Mozambique Eritrea Solomon Islands	Somalia Sri Lanka Bahrain United Arab Emirates Kenya India	Australia
<b>Yes</b>		Indonesia	Malaysia	Philippines Thailand	

Australia reports implementing 90% of the key initiatives covered by this Section, more than any other country. India (87%) and Kenya (78%) also implemented many of the suggested initiatives. More than half (70%) of all reporting countries meet a minimum of 50% of Section 2 key initiatives. Sudan only implemented one initiative: “No customary and/or subsistence use of dugongs”. Jordan, Palau and Seychelles met only 28% of the Section 2 key initiatives. Indonesia and Vanuatu only met just over half of the initiatives (both 53%) despite being project partners in the GEF Dugong and Seagrass Conservation Project. Indonesia is also an IKI project partner and has an estimated large dugong population (1000s). Language barriers may have been a contributing factor, as the National Report is not offered in Bahasa Indonesia, Indonesia’s official language. In addition, Indonesia is a particularly challenging country for dugong conservation with vast coastal waters supporting a low-density dugong population.

Kenya did not provide any answers for Questions **11**, **13** and **15**; Somalia did not provide any answer for Question **13**. Further, Kenya indicated that they had met the initiative of Question **9e** (“Liaise and coordinate with fishing industries, fisheries management organizations and community groups to develop and implement activities that reduce the incidental capture and mortality of dugongs”), however, they added text to advise that this initiative is currently only at the proposal stage; implementation has not yet begun.

### 3.3 Section 3: Dugong Habitats

#### Question Objectives

The questions in this Section addressed the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 3: Protect, conserve and manage habitats for dugong
  - 3.2 Protect dugong habitats
  - 3.3 Actions to address habitat loss
  - 3.4 Degraded dugong habitats

#### Results Summary

Overall, the reporting countries indicated that habitat protection was less advanced than protecting dugong *per se*. Two key initiatives were scored as “Very Good Uptake”; one “Good Uptake”, and four “Moderate Uptake” (Appendix 4). The percentage of positive answers to the checkbox alternatives for questions that offered a yes/no option are summarized in Table 7.

**Table 7:** Percentage of positive answers to the checkbox alternatives in Section 3.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
17	Which of the following has your country done to protect and conserve dugong habitats (such as seagrasses)?	<p>Designated and managed protected/conservation areas, sanctuaries or temporary exclusion zones in areas of critical habitat, or took other measures (e.g., modification of fishing gear, banning destructive fishing practices, restrictions on vessel traffic) to remove threats to such areas and involving the local community as much as possible (88%).</p> <p>Considered protecting dugong habitats as part of ecosystem-based management (e.g., networks of marine protected areas) (80%).</p> <p>Assessed the environmental impact of marine and coastal development and other human activities on dugong populations and their habitats (56%).</p> <p>Strengthened the application of existing bans on the use of poisonous chemicals and explosives in the exploitation of marine resources (56%).</p> <p>Monitored and promoted the protection of water quality from land-based and maritime pollution, including marine debris, which may adversely affect dugongs and their habitats (52%).</p> <p>Developed incentives for adequate protection of areas of critical habitat outside protected areas (16%).</p>

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
18	Which of the following has your country done to address current degradation, and to reduce the risk of future degradation of dugong habitats (such as seagrasses)?	<p>Identified and enhanced recovery of degraded mangrove and coral reef habitats used by dugongs (64%).</p> <p>Identified and enhanced recovery of degraded seagrass habitats used by dugongs (52%).</p> <p>Undertook measures to restore degraded habitats (32%).</p>

### ***Overall performance of initiatives***

The areas where uptake was most limited related to Question **17b** (“Developed incentives for adequate protection of areas of critical habitat<sup>4</sup> outside protected areas”), which was scored as “Very Limited Uptake”. This was followed by Question **18c** (“Undertook measures to restore degraded habitats”), which scored “Limited Uptake”.

Both of the checkbox questions contained an option of “other”, providing an opportunity for reporting countries to describe different initiatives undertaken to meet the main question objective. In its response to Question **17**, Saudi Arabia stated that “In the recently revised Protected Area System Plan, additional marine protected areas (MPAs) have been proposed, and these include major dugong habitats in Saudi Arabia”. Seven countries provided “other information” in their response to Question **18** as listed in Box 5.

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<sup>4</sup> There is no accepted definition of critical habitat for dugongs.

**Indonesia**

*“Through Coral Reefs Rehabilitation and Management Program (COREMAP) and the development of MPAs”*

**Mozambique:**

*“At Vilankulo and Inhassoro, which are areas adjacent to the Bazaruto Archipelago National Park, the fisheries authorities restricted beach seine fishery through a scheme of license limitation and closed season. This reduces the pressure on the seagrass habitat and allow the recovery of seagrass habitat”*

**Myanmar**

*“Department of Fisheries and INGOs, NGOs, Universities collect information about dugong and seagrass beds at Myanmar Coastal for future plans of protection and conservation”*

**Philippines**

*“The BMB has embarked on a Marine Key Biodiversity Project encompassing large seascapes important for dugong and seagrass conservation. These include Tanon Strait Protected Seascape, Lanuza Bay, Davao Gulf and Southern Palawan. The project aims to increase management effectiveness in these areas to sustain their ecological character”*

**Saudi Arabia** *“Degraded seagrass habitats used by dugongs have been identified but measures to enhance their recovery remain to be undertaken”;*

**Sri Lanka**

*Undertaking “Mapping of dugong habitats”*

**Thailand**

*“Seagrass beds are protected by law.”*

**Box 5:** Responses to Question 18 “Which of the following has your country done to address current degradation, and to reduce the risk of future degradation of dugong habitats (such as seagrasses)?” in the National Reports 2016-2019.

Once again, there was a relationship between the estimated size of a reporting country’s dugong population and how many of the key initiatives were implemented (Table 8). Most countries estimated to have very low dugong populations (or no data available) did not implement the key initiatives to protect habitats. Conversely, countries estimated to have moderate to high dugong populations were likely to undertake key initiatives. Nonetheless, Saudi Arabia, a country with a Very High HDI and large estimated dugong populations, provided limited reporting on initiatives. Conversely, Jordan, Sri Lanka, Eritrea and Tanzania with Low to Medium HDIs and very low dugong populations reported that they were undertaking most of them.

**Table 8:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how comprehensively they met the key initiatives covered by Section 3 of the latest National Report (2016-2019).

Dugong Population*	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Somalia Kenya	Seychelles Palau	Sudan Egypt	Jordan Tanzania Eritrea	Sri Lanka
Low (100s)		Malaysia Myanmar	Vanuatu Madagascar Mozambique	India	Philippines Thailand
Moderate (1000s)			Indonesia Saudi Arabia Papua New Guinea	Solomon Islands Bahrain	United Arab Emirates
High (10,000s)				Australia	

\* Dugong population data is collected from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and personal communication.

Once again, there was no apparent relationship between a country being a partner in the GEF Dugong and Seagrass Conservation Project (Table 9) and the number of Section 3 key initiatives it implemented. All of the IKI members met at least 20% of the key initiatives (Table 10). The data in Table 10 provide a baseline for the IKI project.

**Table 9:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they met the key initiatives covered by Section 3 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya	Seychelles Palau Myanmar	Sudan Saudi Arabia Egypt Papua New Guinea	Jordan Tanzania Eritrea India Bahrain Australia	United Arab Emirates Philippines Thailand
<b>Yes</b>		Malaysia	Vanuatu Indonesia Madagascar Mozambique	Solomon Islands	Sri Lanka

**Table 10:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they met the key initiatives covered by Section 3 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya	Seychelles Palau Myanmar	Sudan Vanuatu Saudi Arabia Egypt Papua New Guinea Madagascar Mozambique	Jordan Tanzania Eritrea India Solomon Islands Bahrain Australia	United Arab Emirates Sri Lanka
<b>Yes</b>		Malaysia	Indonesia		Philippines Thailand

Philippines, Sri Lanka, Thailand and United Arab Emirates reported implementing almost 90% of the key initiatives within this Section. More than half (64%) of all reporting countries meet a minimum of 50% of Section 3 key initiatives. Neither Kenya nor Somalia reported implementing any of the Section 3 key initiatives; the Seychelles (22%), Vanuatu (33%), Indonesia (44%), and Malaysia (44%) all met less than 50%, despite the last three countries being project partners for the GEF Dugong and Seagrass Conservation Project, and Indonesia and Malaysia being a Seagrass Ecosystem Services Project (IKI) members. Indonesia also has an estimated large, albeit dispersed, dugong population (1000s). Language may have been a contributing factor.

### 3.4 Section 4: Research and Monitoring

#### Question Objectives

The questions in this Section address the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 2: Improve understanding through research and monitoring
  - 2.1 Dugong populations and habitats
  - 2.2 Dugong research
  - 2.3 Data collection and analysis
- Objective 3: Protect, conserve and manage habitats for dugong
  - 3.1 Dugong habitat mapping
- Objective 4: Improve understanding of dugong habitats through research and monitoring
  - 4.1 Research of habitats

#### Results Summary

Overall, the reporting countries indicated that they were only addressing some of the relevant objectives and actions of the Dugong MoU Conservation and Management Plan in this Section; the collective responses to two key initiatives were scored as “Very Good Uptake”, one scored “Good Uptake”, and nine scored “Moderate Uptake” (Appendix 5). The percentage of positive answers to the checkbox alternatives for questions that offered a yes/no option are summarized in Table 11.

**Table 11:** Percentage of positive answers to the checkbox alternatives in Section 4.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
20	Which of the following has your country done to conduct research and monitoring into dugongs?	Initiated and/or continued long-term monitoring of priority dugong populations (56%). Identified and included priority research and monitoring needs in action plans (56%). Involved local communities in research and monitoring programmes, with training (52%). Promoted the use of traditional ecological knowledge (44%). Periodically reviewed and evaluated research and monitoring activities (36%). Conducted collaborative studies and monitoring of genetic identity, conservation status, migrations, and other biological and ecological aspects of dugongs (24%). Identified migratory routes (16%). Carried out studies on dugong population dynamics and survival rates (12%)

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
23	Which of the following has your country done to conduct research and monitoring into important dugong habitats (such as seagrasses)?	<p>Conducted baseline studies or gathered secondary information on dugong habitats (72%).</p> <p>Initiated and/or continued long-term monitoring of priority dugong habitats (44%).</p> <p>Periodically reviewed and evaluated research and monitoring activities (44%).</p> <p>Identified and included priority research and monitoring needs in action plans (44%).</p> <p>Promoted the use of traditional ecological knowledge in research and management studies, where possible (40%).</p> <p>Involved local communities in research and monitoring programmes with training as required (40%).</p>

The suggested initiatives where response was weakest were related to research and monitoring on dugong; specifically Question **20b** (Identified migratory routes through the use of techniques such as genetic studies and/or satellite tracking where appropriate) and **20c** (Carried out studies on dugong population dynamics and survival rates) which scored “Very Limited Uptake”. These questions are likely unrealistic as such information is generally unavailable even for extensively studied dugong populations. This was followed by Question **20f** (“Periodically reviewed and evaluated research and monitoring activities”) and **20h** (“Conducted collaborative studies and monitoring of genetic identity, conservation status, migrations, and other biological and ecological aspects of dugongs”), both of which scored “Limited Uptake”.

### **Detailed results**

There were three long response questions within this Section; Questions **19** (“What has your country done to determine the distribution and abundance of dugong populations to provide a base for future conservation efforts and actions”), **22** (“What kind of data does your country collect on dugongs and how is it analysed”), and **25** (“What kind of identification and mapping of dugong habitats has your country undertaken”). Question **19** was a stand-alone question, independent of response to the previous question. Questions **22** and **25** were linked to their previous question, and only reporting countries which selected “yes” to the previous question were required to provide a written response.

#### *Initiatives to determine the distribution and abundance of dugong populations (question 19)*

Most (84%) reporting countries provided a written response to Question **19** (Box 6); the exceptions were Jordan, Kenya, Somalia and United Arab Emirates. Most responses were brief statements describing when population surveys were undertaken, with some countries providing in-depth detail on new research underway and where areas of research need updating or improvement (Box 6).

**Australia:**

*“...Western Australia is the least studied state in regard to dugongs and further surveys are planned from 2017-2019 to characterise dugong seagrass habitat in the Pilbara region in Western Australia which will attempt to link seagrass distribution to dugong distribution.”*

**India:**

*“a)...Dugong mortality due to activities other than fishing would be ascertained after this survey. Necessary conservation actions have already been initiated based on findings.*

*b) Seagrass habitats in the country has already been mapped by various scientific organisations, but it needs to be updated.*

*c) Assessment of population status using aerial survey, under water sonar technique etc would be carried out soon.*

*d) A study on Ecological services of seagrass habitats has already been initiated in Tamil Nadu and Gujarat.*

*e) Genetic studies on the fragmented populations of dugong is underway.”*

**Solomon Islands:**

*“Encourage research programs with academic institutions, researchers and NGO programs to promote dugong conservation projects into their portfolios.*

*Implementation of the DSCP Project by WorldFish and SICCP are capturing objectives to determine distribution and abundance of dugong’s populations in Western, Malaita, Temotu province.*

*2009 – conducted perspective surveys for Guadalcanal, Malaita, Makira and Isabel Provinces. Reports of sightings in all these provinces. Basic mapping done for these sites.*

*Reports by NGOs, communities, fisherman on accidental kills, stranded dugongs etc – Reporting mechanisms to be improved.”*

**Box 6:** Examples of written responses to Question 19 “What has your country done to determine the distribution and abundance of dugong populations to provide a base for future conservation efforts and actions?” from the most recent National Reports 2016-2019.

*Collection of dugong data (questions 21 and 22)*

Question 22 is linked to Question 21 (“Does your country collect data on dugongs”); 19 reporting countries answered “yes”, and all of these countries provided a written response. Kenya and Papua New Guinea did not select an answer for Question 21 or leave a written response for Question 22, and Palau advised that no data were being collected. Most replies were brief statements about population studies and habitat surveys; some reporting countries left detailed responses on the current research being undertaken, especially outside of population assessments and habitat surveys (Box 7).

**Malaysia:**

*“...c) Dugong feeding trail surveys to study the feeding preferences of dugongs in relation to seagrass species, substrate type, nutrient composition of seagrass, biomass of seagrass (above ground and below ground).*

*d) Contaminates study (PAHs, PCBs, pesticides) to assess the habitat health risks to dugongs.*

*e) Dugong acoustic surveys to study the vocalisation patterns of dugong, micro-scale movement within the Johor east coast islands, and habitat use.*

*f) Social science studies to determine the level of awareness of local stakeholders about dugongs and seagrass, their perception of dugongs and seagrass, their community structure and factors that influence their perception and attitudes towards dugongs and seagrass conservation, and their willingness to participate in dugong and seagrass conservation.”*

**Philippines:**

*“Dugong strandings, catch and by-catch, mortalities and sources of threats, rescue and release data, and location are collected by DENR field offices and forwarded to ad consolidated at the BMB. Reports from citizens and NGO partners are also received by BMB. Some NGOs (e.g. PMMSM) also hold their own data on dugongs as part of their broader stranding data on marine mammals.”*

**Sri Lanka:**

*“GIS mapping of available seagrass beds. Analysis and identification of the species composition and diversity on seagrass. Analysis of water quality. Assess the damage of seagrass beds by fishing boats. Recording of kills and bycatch of dugongs. Community survey of fishing community by interviews. Detection of dugong using Sonar devices.”*

**Box 7:** Written text to Question 22 “Does your country collect data on dugongs” from the latest National Reports 2016-2019.

*Identification and mapping of important dugong habitats (questions 24 and 25)*

Question 25 is linked to Question 24 (“Has your country undertaken any identification and mapping of important dugong habitats (such as seagrasses)”), where 21 countries answered yes. All but one of these countries, Bahrain, left a response. The majority of responses were brief statements about seagrass mapping, while some countries provided in-depth detail responses about more than mapping and areas where work is required or knowledge gaps to be filled (Box 8). Kenya did not select an answer for Question 24 or leave a written response for Question 25. Palau left a response, even though they selected “no” for Question 24. Palau stated simply “GIS mapping” as their written response for Question 25.

**Australia:**

*“...Although research on seagrass distribution and quality is becoming more widespread, there are still knowledge gaps regarding the relationship between various seagrass species” distribution patterns and dugong distribution/movement. Some areas in Australia have been surveyed intensively, whereas other areas (remote and difficult to access areas) have had little to no seagrass monitoring. Areas that have been impacted from cyclones or flooding have been surveyed more intensively. There are a number of Australian Government National Environment Science Program projects that have recently been completed, including among others “Seagrass mapping”, “Light thresholds for seagrass of the Great Barrier Reef”, “Developing and refining biological indicators for seagrass condition assessments in an integrated monitoring program”, and “Assessment of key dugong and turtle seagrass resources in the northern Torres Strait”. There are also a number of projects regarding water quality that have been completed...These particular programs have been completed in Queensland. Surveys have been planned in Western Australia from 2017-2019 to characterise dugong seagrass habitat in the Pilbara region in Western Australia and will attempt to link seagrass distribution to dugong distribution.”*

**Philippines:**

*“...Seagrass assessment in specific localities, dugong population and fishery interactions were undertaken by DENR, NGOs (WWF, CCC3) and academic institutions...Map of priority areas for dugong and seagrass conservation in the Philippines as contained in the publication of Philippine Biodiversity Conservation Priorities (Ong, et al. 2002).”*

**Box 8:** Written text to Question **25:** What kind of identification and mapping of dugong habitats has your country undertaken?” in the latest National Reports 2016-2019.

*Other initiatives (multiple questions)*

Half of the checkbox Questions, contained an option of “other”, to provide the opportunity to describe different initiatives undertaken to meet the main Question’s objective. Question **20** had three countries that provided “other” information; Indonesia stated that “We have conducted trainings on community-based monitoring”; Myanmar stated that “Department of Fisheries want to conduct frequently (or) regularly research and monitoring program, now collect information through coastal fisheries offices, DoF had lack of budget”; and Sudan stated that they “Conducted collaborative study on population and abundance of dugongs as mentioned above”. Question **23** had only one country provide “other” information; Saudi Arabia stated that the “Saudi Wildlife Authority in collaboration with the Khaled bin Sultan Living Oceans Foundation, has conducted marine habitats research project in the Red Sea”.

**Overall performance of initiatives**

There was a relationship between the estimated size of a reporting country’s dugong population and how many of the key initiatives that were implemented (Table 12). Most countries estimated to have very low dugong populations (or no data available) did not implement key initiatives; however, Thailand, with an estimated dugong population in the 100s implemented all of the initiatives, presumably reflecting the fact that it has the largest confirmed dugong population in South-East Asia

Dugong MoU: 2016 – 2019 National Report Analysis (Hines et al. 2012). Conversely, countries estimated to have moderate to high dugong populations were likely to undertake key initiatives. Nonetheless, Saudi Arabia and Bahrain, two countries with a Very High HDI and large estimated dugong populations, provided limited reporting on these initiatives. Conversely, Tanzania with a Low HDI and very low dugong population reported that they were undertaking most of them.

**Table 12:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how comprehensively they met the key initiatives covered by Section 4 of the latest National Report (2016-2019).

Dugong Population*	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Somalia Kenya Palau Sudan	Jordan Sri Lanka	Egypt Eritrea Seychelles		Tanzania
Low (100s)		Vanuatu Madagascar	Myanmar Malaysia India	Philippines Mozambique	Thailand
Moderate (1000s)		Saudi Arabia Papua New Guinea Bahrain	Indonesia	United Arab Emirates	Solomon Islands
High (10,000s)					Australia

\* Dugong population data from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and personal communication.

There was no obvious relationship between a country being a partner in the GEF Dugong and Seagrass Conservation Project (Table 13) and the number of Section 4 key initiatives it implemented. All of the IKI members met at least 20% of the key initiatives (Table 14). These data have been included to provide a baseline for the IKI project countries.

**Table 13:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they addressed the key initiatives covered by Section 4 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya Palau Sudan	Saudi Arabia Papua New Guinea Jordan Bahrain	Myanmar Egypt Eritrea Seychelles India	United Arab Emirates Philippines	Tanzania Australia Thailand
<b>Yes</b>		Vanuatu Madagascar Sri Lanka	Indonesia Malaysia	Mozambique	Solomon Islands

**Table 14:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they implemented the key initiatives covered by Section 4 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya Palau Sudan	Saudi Arabia Vanuatu Papua New Guinea Jordan Bahrain Madagascar Sri Lanka	Myanmar Egypt Eritrea Seychelles India	United Arab Emirates Mozambique	Tanzania Solomon Islands Australia
<b>Yes</b>			Indonesia Malaysia	Philippines	Thailand

Australia and Thailand were the countries with the highest uptake of the key initiatives within this Section, both meeting all of them (Appendix 5). Almost half (48%) of all reporting countries meet a minimum of 50% of Section 4 key initiatives. Palau, Somalia and Sudan did not meet any of the key initiatives within Section 4. Kenya implemented only 12% of the Section 4 key initiatives. Indonesia, Madagascar, Sri Lanka and Vanuatu also did not implement many of these key initiatives (Indonesia met 46%, Madagascar and Sri Lanka met 47%, and Vanuatu met 31%), despite all four countries being project partners for the GEF Dugong and Seagrass Conservation Project, and Indonesia being a Seagrass Ecosystem Services Project (IKI) member. Indonesia also has an estimated large dugong population (1000s), albeit very dispersed over a huge area. Language barriers may have been a contributing factor, as the national report is not offered in Indonesia's official language.

### 3.5 Section 5: Dugong Conservation<sup>5</sup>

#### *Question Objectives*

The Questions in this Section address the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 5: Raise awareness of dugong conservation
  - 5.1 Information programmes
  - 5.2 Encourage local community participation

#### *Results Summary*

Overall, the reporting countries indicated that they were addressing only a few of the relevant objectives and actions of the Dugong MoU Conservation and Management Plan; one key initiative scored “Very Good Uptake”, two “Good Uptake”, and three “Moderate Uptake” (see Appendix 6). The percentage of positive answers to the checkbox alternatives for questions that invited a yes/no option are summarized in Table 15.

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<sup>5</sup> This section would be more appropriately titled ‘Awareness and Education’ as in the Conservation and Management Plan.

**Table 15:** Percentage of positive answers to the checkbox alternatives in Section 5.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
26	Which of the following has your country done to establish education, awareness and information programmes?	<p>Encouraged the participation of government institutions, intergovernmental organizations, the private sector and the general community in research, conservation and management efforts (84%).</p> <p>Promoted public participation in conservation activities (68%)</p> <p>Collected, developed, coordinated and disseminated education materials (e.g., dedicated regional website) (64%).</p> <p>Developed and conducted focused education and awareness programmes for target groups (56%).</p> <p>Organised special events related to dugong conservation and biology (e.g., Dugong Day, Year of the Dugong, symposia, and community education workshops) (48%).</p> <p>Involved stakeholders, including key policymakers, subsistence and customary users, and local communities in particular, in planning and implementation (48%).</p> <p>Identified key persons/champions to help disseminate messages (32%).</p> <p>Encouraged the incorporation of dugong biology and conservation issues into school curricula (28%).</p> <p>Developed and implemented mass media information programmes (24%).</p> <p>Implemented incentive schemes to encourage public participation (e.g., T-shirts, public acknowledgement and certificates) (20%).</p> <p>Established community learning/information centres (16%).</p>

The areas where the response was weakest were in Question **26c** (established community learning/information centres) and **26k** (implemented, where appropriate, incentive schemes to encourage public participation) in research, conservation and management efforts) which both scored “Very Limited Uptake”. This was followed by Questions **26b** (identified key persons/champions to help disseminate messages about the need to conserve dugongs and their habitats), **26d** (developed and implemented mass media information programmes), and **26f** (encouraged the incorporation of dugong biology and conservation issues into school curricula), which scored “Limited Uptake”.

There was one long response question within this Section; Question **27** (What specifically has your country done to encourage local communities to actively participate in conservation efforts). This was

Dugong MoU: 2016 – 2019 National Report Analysis

a stand-alone question. Most (80%) reporting countries provided a written response. Only five countries did not respond to this question; Bahrain, Kenya, Papua New Guinea, Somalia and Sri Lanka. Responses to this question mainly consisted of brief statements on one awareness program, however, some countries provided detailed responses on multiple specific programs ranging from large costs to small NGO funded programs (Box 9).

**Australia:**

*“Under the Government’s Dugong and Turtle Protection Plan (DTPP), \$700,000 has been provided to the Great Barrier Reef Marine Park Authority to collaborate with community groups, including Reef Guardian councils, fishers, farmers and schools, traditional owners, and tourism operators along the Queensland coast to conduct reef clean-up events and raise awareness of the issues to reduce the source and occurrence of marine debris.”*

**India:**

*“a) All the schools in the vicinity of dugong habitats are covered under the “Intensive Awareness Programme”. As part of this programme, WII organising various awareness programmes in these schools. Similarly, State Governments such as Tamil Nadu, Gujarat and Andaman and Nicobar Islands have also conducted various awareness programs to school children.*

*b) MoEFCC and WII is initiated the process of creating networks of “Dugong Ambassadors” comprising school students of fishermen community. These students would be provided with “Dugon Scholarships” to successfully complete their study.*

*c) As part of Citizen Science, Tamil Nadu Government has developed a Mobile App to report the dugong sightings by fisherman. Those who report the sightings of dugong would be provided with incentives that include a certificate of appreciation and small monetary gift. Then same scheme would be implemented in other parts of dugong areas, such as Andaman and Nicobar Islands and Gurjat with help of CAMPA Funds by WII.”*

**Madagascar:**

*“...In the framework of the GEF Dugong and Seagrass Project, the national partner project MG4 involved the local community in the conservation of dugongs and seagrass. The project developed strategies to income diversification for avoiding direct hunting of seagrass dependent migratory species in Sahmalaza.”*

**Philippines:**

*“...Coastal Resource Management Program widely adopted in the Philippines is essentially community-based through mainstreaming in local governance resource management and forming and training people’s organisation to managed certain community projects like seagrass and mangrove rehabilitation, community managed eco-tourism activities e.g., dugong watching in Leganes, Iloilo.”*

**Box 9:** Examples of written text to Question 27 What specifically has your country done to encourage local communities to actively participate in conservation efforts?” from the latest National Report 2016-2019.

**Overall performance of initiatives**

There was a relationship between the estimated size of a reporting country’s dugong population and how many of the key initiatives that were implemented (Table 16). Most countries estimated to have very low dugong populations (or no data available) did not implement key initiatives; with only one country meeting nearly all of the initiatives. Conversely, countries estimated to have moderate to high dugong populations were likely to have implemented key initiatives. However, Bahrain and Saudi Arabia, two countries with a Very High HDI and large estimated dugong populations, provided limited reporting on these initiatives. Conversely, Tanzania with a Low HDI and very low dugong population

reported that they were undertaking most of them.

**Table 16:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how comprehensively they implemented the key initiatives covered by Section 5 of the latest National Report (2016-2019).

Dugong Population*	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Somalia Kenya Sudan	Palau Sri Lanka Jordan Egypt	Eritrea Seychelles		Tanzania
Low (100s)		Vanuatu	Myanmar Malaysia India Philippines Thailand Madagascar	Mozambique	
Moderate (1000s)		Bahrain	Saudi Arabia Indonesia Papua New Guinea	United Arab Emirates	Solomon Islands
High (10,000s)				Australia	

\* Dugong population data from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and Marsh personal communication.

Being a partner in the GEF Dugong and Seagrass Conservation Project (Table 13) did not appear to influence the number of Section 5 key initiatives implemented. All of the IKI partners met at least 40% of the key initiatives (Table 13). These data are provided as a baseline for the IKI project.

**Table 17:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they implemented the key initiatives covered by Section 5 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya Sudan	Palau Bahrain Jordan Egypt	Saudi Arabia Myanmar Eritrea India Philippines Thailand Papua New Guinea Seychelles	Australia	United Arab Emirates Tanzania
<b>Yes</b>		Sri Lanka Vanuatu	Indonesia Malaysia Madagascar	Mozambique	Solomon Islands

**Table 18:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they implemented the key initiatives covered by Section 5 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia Kenya Sudan	Palau Bahrain Sri Lanka Jordan Egypt Vanuatu	Saudi Arabia Myanmar Eritrea India Papua New Guinea Seychelles Madagascar	Australia Mozambique	United Arab Emirates Tanzania Solomon Islands
<b>Yes</b>			Philippines Thailand Indonesia Malaysia		

The Solomon Islands and Tanzania were the countries that most comprehensively implemented the key initiatives within this Section, both meeting all except one. Only one third (32%) of all reporting countries meet a minimum of 50% of Section 5 key initiatives. Kenya, Somalia and Sudan did not meet any of the key initiatives within Section 5. Palau and Sri Lanka were the next weakest performing countries, meeting only 27% of the Section 5 key initiatives. Sri Lanka, Vanuatu, Thailand, Philippines, Malaysia and Indonesia did not meet many of the key initiatives (Sri Lanka met 27%, Vanuatu met 36%, Thailand, Philippines, Malaysia and Indonesia met 45%), despite most of these countries being project partners for the GEF Dugong and Seagrass Conservation Project, and all of the Seagrass Ecosystem Services Project (IKI) members being within the same group (Appendix 6). Indonesia also has an estimated large dugong population (1000s). Language barriers may have been a contributing factor, as the national report is not offered in Indonesia or Thailand's official language. The IKI project commenced in 2020, which means it is too early for its influence to be reflected in these National Reports. Recording this information provides a baseline for these countries.

### 3.6 Section 6: Cooperation

#### Question Objectives

The Questions in this Section address the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 6: Enhance national, regional and international cooperation
  - 6.1 Combat illegal trade
  - 6.2 Information exchange
  - 6.3 Improve coordination
  - 6.4 Database
- Objective 8: Improve legal protection of dugongs and their habitats
  - 8.1 Incorporation into national legislation
- Objective 9: Enhance national, regional and international cooperation on capacity building
  - 9.1 Promote capacity building

#### Results Summary

Overall, the reporting countries indicated that they were only addressing some of the relevant objectives and actions of this section of the Dugong MoU Conservation and Management Plan; one key initiative scored “Very Good Uptake”, six scored “Good Uptake”, and eleven “Moderate Uptake” (Appendix 7). The percentage of positive answers to the checkbox alternatives for questions that invited a yes/no option are summarized in Table 19.

**Table 19:** Percentage of positive answers to the checkbox alternatives in Section 6.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
28	Which of the following has your country done in order to collaborate with and assist Range States to combat illegal international trade of dugongs and dugong related products?	<p>Reviewed at a national level, compliance with obligations under CITES relating to illegal international trade in dugong parts or products (68%).</p> <p>Encouraged Signatory States, that have not already done so, to become Parties to CITES (44%).</p> <p>Facilitated better compliance with CITES through training of relevant authorities in cooperation with other Signatory States, the CITES Secretariat and other relevant organisations (44%).</p> <p>Identified routes of international illegal trade through monitoring, and sought cooperation to take action to prevent, deter and, where possible, eliminate it (28%).</p>

Q #	Question	Percentage of positive responses to the specified alternatives
30	Which of the following has your country undertaken to cooperate in enforcement activities relating to the illegal trade of dugongs and dugong related products?	<p>Identified, prevented, deterred and, where possible, eliminated domestic illegal trade through monitoring, implementation of legislation, identification of gaps in enforcement capabilities, and training of enforcement officers (60%).</p> <p>Exchanged and discussed information on compliance and illegal trade issues at regular intervals, such as through annual reporting to the MOU Secretariat and at meetings of the Signatory States (28%).</p>
31	Which of the following has your country done to develop and implement mechanisms for effective exchange of information?	<p>Identified and strengthened existing mechanisms for cooperation at the regional and sub-regional level (44%).</p> <p>Cooperated where possible in the establishment of transboundary marine protected areas using ecological rather than political boundaries (40%).</p> <p>Developed a website and/or newsletter to facilitate networking and exchange of information (36%).</p> <p>Determined the most appropriate methods for information and expertise among nations, scientific institutions, non-governmental and international organisations, in order to develop and implement best practice approaches to the conservation of dugongs and their habitats (36%).</p> <p>Exchanged at regular intervals scientific and technical information and expertise among nations, scientific institutions, non-governmental and international organisations, in order to develop and implement best practice approaches to conservation of dugongs and their habitats (36%).</p> <p>Updated data on dugong populations of regional interest on a regular basis (e.g., country status reports) (32%).</p> <p>Developed networks for cooperative management of shared populations, within or across sub-regions, and where appropriate, formalise cooperative management arrangements (28%).</p> <p>Disseminated traditional knowledge on dugongs, their habitats and traditional practices for conservation and management in a culturally appropriate manner (28%).</p> <p>Established relationships with regional fisheries bodies with a view to obtaining data on incidental capture and encourage them to adopt dugong conservation measure within Exclusive Economic Zones (EEZ) and territorial waters (16%).</p> <p>Regularly updated a directory of experts and organisations concerned with dugong conservation (16%).</p> <p>Encouraged Signatory States to become contracting parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) and to implement the FAO Code of Conduct for Responsible Fisheries (1995) (12%).</p> <p>Developed a streamlined format for reporting and exchanging information (through the MOU Secretariat and among Signatory States) on the state of dugong conservation at the national level (8%).</p> <p>Developed a web-based information resource for dugong conservation (including data on populations, migration, on-going projects) based on the IUCN website (4%).</p>

Q #	Question	Percentage of positive responses to the specified alternatives
32	Which of the following has your country done to improve coordination among government and non-government sectors and communities in the conservation of dugongs and their habitats?	<p>Encouraged cooperation within and among government and non-government sectors, including through the development and/or strengthening of national networks (72%).</p> <p>Designated a lead agency responsible for coordinating national dugong conservation and management policy (60%).</p> <p>Identified non-governmental organisations with an interest in dugong conservation and management (60%).</p> <p>Reviewed the roles and responsibilities of government agencies related to the conservation and management of dugongs and their habitats (52%).</p>
34	Which of the following has your country done to encourage Range/Signatory States to incorporate dugong and habitat conservation and protection measures into national legislation?	<p>Raised public awareness to boost surveillance for reporting of illegal activities (56%).</p> <p>Encouraged the establishment of legislation to protect dugongs and their habitats while recognising existing traditional management systems (40%).</p> <p>Encouraged MOU Signatory States that have not already done so to become Parties to the Convention on Migratory Species (CMS) (36%).</p> <p>Reviewed domestic policies and laws to address gaps or impediments to dugong conservation (32%).</p> <p>Ensured corporate sanctions for harming dugongs or destroying habitat (32%).</p> <p>Trained law enforcement authorities (28%).</p>
35	Which of the following has your country done to promote capacity building at all levels to strengthen conservation measures?	<p>Developed partnerships with universities, research institutions, non-government organisations, training bodies and other relevant organisations to support capacity building initiatives (80%).</p> <p>Identified needs for capacity-building in terms of human resources, knowledge and facilities (76%).</p> <p>Provided and/or coordinated training (e.g., through workshops) in conservation and management techniques for dugongs and their habitats to relevant agencies, individuals and local communities (56%).</p> <p>Organised forums (local, national and regional as appropriate) with the involvement of all relevant stakeholders to enable knowledge sharing and capacity building (48%).</p> <p>Identified, assessed, developed and implemented training programmes for local communities, non-government organisations, community-based organisations, media, enforcement officers, policy makers, law makers and decision makers (40%).</p> <p>Enhanced capacity at all levels to develop and undertake joint research programmes on dugong and their habitats (40%).</p> <p>Supported local communities and relevant national organisations with necessary basic equipment and facilities to enable protection, conservation and management of dugong and their habitats (36%).</p> <p>Provided training on development, implementation and monitoring of community rehabilitation programmes (28%).</p>

The area where uptake was weakest were in the development and implementation of mechanisms for effective exchange of information; specifically Questions **31c** (“Developed a web-based information resource for dugong conservation (including data on populations, migration, on-going projects) based on the IUCN website”), **31d** (“Regularly updated a directory of experts and organizations concerned with dugong conservation”), **31g** (“Developed a streamlined format for reporting and exchanging information (through the MoU Secretariat and among signatory range states) on the state of dugong conservation at the national level”), **31h** (“Encouraged signatory range states to become contracting parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) and to implement the FAO Code of Conduct for Responsible Fisheries (1995)”), and **31i** (“Established relationships with regional fisheries bodies with a view to obtaining data on incidental capture and encourage them to adopt dugong conservation measure within Exclusive Economic Zones (EEZ) and territorial waters”), all of which scored “Very Limited Uptake”. Questions **28d**, **30a**, **31b**, **31e**, **31j**, **31k**, **31l**, **31m**, **34a**, **34c**, **34d**, **34e**, **35g** and **35h** (see Appendix 1 for the written Questions), all scored “Limited Uptake”.

There were two open-ended, stand-alone questions within this Section; Question **29** (“What has your country done to work collaboratively with dugong range states to combat illegal domestic and/or regional trade of dugong related products”), and Question **33** (“What has your country done to develop and implement a regional database of relevant information in relation to dugong conservation and management”).

### **Detailed results**

#### *Actions to work collaboratively with dugong range states to combat illegal domestic and/or regional trade of dugongs and dugong related products (question 29)*

Sixty-eight percent of reporting countries provided a written response for Question **29**: “What has your country done to work collaboratively with dugong range states to combat illegal domestic and/or regional trade of dugongs and dugong related products?” Exceptions were Eritrea, Kenya, Madagascar, Malaysia, Mozambique, Somalia, Sri Lanka and Sudan. Responses mainly consisted of brief statements on legal avenues available within their county: some countries provided detailed responses on multiple projects they have led or participated in to discourage illegal trade in dugongs (Box 10). Three reporting countries advised that they had done nothing for this initiative: Jordan, Palau and Tanzania.

**India:**

*"...b) Participating South Asian countries and organisations including UNEP/CMS strongly encouraged the Governments of Bangladesh, Pakistan and Sri Lanka to sign the UNEP/CMS Dugong MOU early, and latest before second meeting of the Signatory States.*

*...d) The Ministry of Environment, Forest and Climate Change has adopted the statue of South Asia Wildlife Enforcement Network (SAWEN) on 13<sup>th</sup> April 2016. SAWEN is a regional wildlife enforcement network of eight South Asian countries, including India, Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka, established as a strong regional inter-governmental body in combating wildlife crime in the region and beyond."*

**Papua New Guinea:**

*"PNG is a signatory to the Coral Triangle Initiative and we have been working very closely with out 5 country partners developing a management plan under the Threaten Species Goal, mainly to address illegal harvest and protect migratory pathways for immigratory species"*

**Philippines:**

*"At the regional level, the Philippines has been actively participating in the ASEAN – Wildlife Enforcement Network to address illegal wildlife trade across the region. Implementation if the CITES and enforcement of wildlife laws among the ASEAN is realized through enhances exchange of information and intelligence reporting and sharing of experiences that feeds into capacity building activities of enforcers. At the national level, a task force (i.e., Philippine Operations Group on Ivory and other Wildlife) was created to strengthened national capacity in addressing illegal wildlife crime. The task force is taken to capacitate local level enforcers and liaise with regional counterparts in the ASEAN-WEN."*

**Box 10:** Examples of answers to Question 29: "What has your country done to work collaboratively with dugong range states to combat illegal domestic and/or regional trade of dugongs and dugong related products?" from the National Reports 2016-2019.

*Regional database of relevant information in relation to dugong conservation and management (question 33)*

Sixty-four percent of reporting countries provided a written response for Question 33: "What has your country done to develop and implement a regional database of relevant information in relation to dugong conservation and management?" Nine countries did not respond: Egypt, Kenya, Madagascar, Malaysia, Myanmar, Somalia, Sri Lanka, Sudan and Vanuatu. Responses mainly consisted of brief statements on their countries database; some countries provided detailed responses on the dataset their country has either led or participated in that spans over multiple dugong range states or is publicly available (Box 11). Eight countries advised that they had done nothing with regard to this initiative: Bahrain, Eritrea, Jordan, Indonesia, Palau, Papua New Guinea, Solomon Islands and Tanzania. Seychelles and Thailand advised that they are now ready to include regional information in their national database.

**Australia:**

*“The Australian Government Department of the Environment and Energy has a public database with information on all nationally listed threatened and migratory species...”*

**Mozambique:**

*“Mozambique is currently in coordination of a western Indian Ocean Research Program (which include Tanzania and Kenya). This program consists of running both aerial surveys and dugong by-catch survey Questionnaires to update the status of dugong populations. There is also a plan to carry out a regional genetic study to complement. A webpage (Dugong.org), Facebook page (Friends of Dugongs) on dugongs have been created to allow storage and exchange of information. In addition, two whatsapp groups are active: one at the regional scale joining scientists from Western Indian Ocean and another of partners who are implementing the dugong and seagrass conservation project in Mozambique.”*

**Box 11:** Examples of written text answers to Question 33 “What has your country done to develop and implement a regional database of relevant information in relation to dugong conservation and management?” from National Reports 2016-2019.

*Other initiatives*

The six checkbox questions all included the option of “other”, to provide scope for reporting different initiatives undertaken to meet the main question’s objective. In response to Question 28: “Which of the following has your country done in order to collaborate with and assist range states to combat illegal international trade of dugongs and dugong related products?”. Papua New Guinea advised that “PNG has been working very closely with Australia under the Torres Strait Treaty focused mainly in the protection of turtle and dugong usage within these two countries. Specific trainings have been undertaken with Traffic Asia on combating illegal harvest of dugong tusks from PNG and sold in Asia markets. This also includes the development of Dugong and Turtle Management Plan to restrict traditional harvest as well as illegal harvest for sale to Indonesia. Joint efforts coordinate are from PNG, Australia and Indonesia”. Myanmar stated that “Myanmar CITES Authority collaborated INGOs NGOs and Government Armed Forces such as Border Polices, Army check points for regular inspections”.

Two countries provided “other” information in response to Question 30 “Which of the following has your country undertaken to cooperate in enforcement activities relating to the illegal trade of dugongs and dugong related products?”. Papua New Guinea stated that the “PNG has only two workshops coordinated through Asia Traffic in the last 10-15 years. PNG government has not invested more funding to protect our dugong illegal harvest and therefore have been depended on outside funding and other educational sources”. Myanmar advised that “Myanmar Authority had strictly prohibited wildlife trade and trafficking also announced at local media, and distributed posters at important places”.

Question **31** asked “Which of the following has your country done to develop and implement mechanisms for effective exchange of information?”. Myanmar stated that “Myanmar is one of the ASEAN Countries members of SEAFDEC, so DoF collaborate member countries also actively participated regional workshops, meeting, present the status of dugong and seagrass condition”. Madagascar advised that “Information on dugongs shared via MIHARI networks to communities”.

In response to Question **32**: “Which of the following has your country done to improve coordination among government and non- government sectors and communities in the conservation of dugongs and their habitats?”, Myanmar stated that the “Department of Fisheries is the most competent authority if dugong and seagrass conservation, so DoF is a leading agency of Dugong Conservation in Myanmar”.

Myanmar was also the only country to provided “Other information in response to Question **34**: “Which of the following has your country done to encourage Range/signatory range states to incorporate dugong and habitat conservation and protection measures into national legislation?” stating that “Forest Department already acted the Wildlife Protection Laws, it is fully covered and fully protected dugong species”.

Two countries which provided “other” information in response to Question **35** (“Which of the following has your country done to promote capacity building at all levels to strengthen conservation measures?”) Myanmar stated that “Department of Fisheries, and its scientist frequently training to local fisheries and communities, sometimes freelance biologist conducted training and awareness program to Ecotourism Guide at Hotel and tourism and training schools”. The Seychelles stated that “A voluntary contribution of US\$10,000 was made by the SIF towards the Small Grants Programme under this MoU for the conservation of the dugong in the South Western Indian Ocean”.

### ***Overall performance of initiatives***

There was no clear relationship between the estimated size of a reporting countries dugong population and how many of the key initiatives that were implemented for Section 6 (Table 20). More countries with low dugong populations did not meet most of the key initiatives, while countries with moderate dugong populations met a minimum of 20%. Australia (the only country with high dugong populations), met at least 40%. However, no country met all or nearly all of the key initiatives. Once again, Saudi Arabia, a country with a Very High HDI and large estimated dugong populations, provided limited reporting on these initiatives. Conversely, Tanzania with a Low HDI and very low dugong population reported that they were undertaking at least 60% of them.

**Table 20:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how comprehensively they met the key initiatives covered by Section 6 of the latest National Report (2016-2019).

Dugong Population*	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Kenya Palau Somalia Sudan	Jordan	Seychelles Sri Lanka Eritrea Egypt		Tanzania
Low (100s)	Madagascar Vanuatu	Malaysia	Myanmar India		Mozambique Thailand Philippines
Moderate (1000s)		Saudi Arabia Indonesia	Bahrain United Arab Emirates Solomon Islands		Papua New Guinea
High (10,000s)			Australia		

\* Dugong population data from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and Marsh personal communication.

There was no obvious relationship between a country being a partner in the GEF Dugong and Seagrass Conservation Project (Table 21) and the number of Section 6 key initiatives implemented. All of the IKI members met at least 20% of the key initiatives (Table 22). The IKI project commenced in 2020 and this information is included to provide a baseline for IKI partners.

**Table 21:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they implemented the key initiatives covered by Section 6 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Kenya Somalia Palau Sudan	Jordan Saudi Arabia	Seychelles Bahrain Myanmar Eritrea India Egypt United Arab Emirates Australia	Tanzania Thailand Papua New Guinea Philippines	
<b>Yes</b>	Madagascar Vanuatu	Indonesia Malaysia	Sri Lanka Solomon Islands	Mozambique	

**Table 22:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they implemented the key initiatives covered by Section 6 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Kenya Somalia Palau Madagascar Sudan Vanuatu	Jordan Saudi Arabia	Seychelles Sri Lanka Bahrain Myanmar Eritrea India Egypt United Arab Emirates Australia Solomon Islands	Tanzania Mozambique Papua New Guinea	
<b>Yes</b>		Indonesia Malaysia		Thailand Philippines	

The Philippines was the country that implemented the most of the key initiatives within this Section (73%), followed closely by Papua New Guinea (70%). Less than half (40%) of all reporting countries meet a minimum of 50% of Section 6 key initiatives. Kenya did not meet any of the key initiatives within Section 6, suggesting that these initiatives may not have been relevant. Palau and Somalia met only 3% of the Section 6 key initiatives, followed by Madagascar (who met only 5%). Many of the project partners for the GEF Dugong and Seagrass Conservation Project (Madagascar, Vanuatu met 14%, Indonesia met 30%, Malaysia met 38% and Sri Lanka met 46%) failed to meet most of the key initiatives within this Section. Additionally, Indonesia and Malaysia are Seagrass Ecosystem Services Project members, and Indonesia has an estimated large dugong population (1000s). Language barriers may have been a contributing factor. The IKI project commenced in 2020, which means it may be too early for its influence to be reflected in the National Reports. Nonetheless, this information provides a baseline.

### 3.7 Section 7: Implementation of the MoU

#### Question Objectives

The questions in this Section address the following objectives and actions of the Dugong MoU Conservation and Management Plan:

- Objective 7: Promote implementation of the MoU
  - 7.1 Encourage participation in the MoU
  - 7.2 Support the Secretariat
  - 7.3 Seek resources
  - 7.4 Synergies with other conventions

#### Results Summary

Overall, the reporting countries indicated that they were addressing only some of the relevant objectives and actions of the Dugong MoU Conservation and Management Plan; no key initiatives scored “Very Good Uptake” or “Good Uptake”; three scored “Moderate Uptake” (see Appendix 8). The percentage of positive answers to the checkbox alternatives for questions that offered a yes/no option are summarized in Table 23.

**Table 23:** Percentage of positive answers to the checkbox alternatives in Section 7.

Q #	Question	Percentage of positive responses to the specified alternatives in order of reported implementation
36	Which of the following has your country done to encourage all Range States to participate in the MOU and its conservation and management activities?	Encouraged non-Signatory States to sign the MOU (40%). Arranged regional and sub-regional workshops involving non-Signatory States to raise awareness of the MOU (20%).
38	Which of the following actions has your country undertaken to seek resources that support the implementation of the Dugong MOU (at either a national or international level)?	Prioritised conservation and management activities for funding (56%). Explored funding options with governments and other donors (such as the Asian Development Bank, World Bank, UNDP, European Union, UNEP, GEF) (44%). Solicited funding and other contributions from industries that have impacts on dugongs and their habitats (e.g., fisheries, tourism, oil industry, real estate) (32%). Explored international funding support and other incentives for Signatory States that effectively manage populations (12%).

The areas where uptake was most limited were within Question **38d** (“Explored international funding support and other incentives for signatory range states that effectively manage populations”) which

Dugong MoU: 2016 – 2019 National Report Analysis scored “Very Limited Uptake”. This was followed by Question **36b** (“Arranged regional and sub-regional workshops involving non-signatory range states to raise awareness of the MoU”) and **38c** (“Solicited funding and other contributions from industries that have impacts on dugongs and their habitats (e.g., fisheries, tourism, oil industry, real estate)”, which both scored “Limited Uptake”.

### **Detailed results**

*Initiatives to encourage dugong range states’ participation in the MoU and its conservation and management activities (question 36)*

Three countries provided “other” information in response to Question **36** “Which of the following has your country done to encourage all range states to participate in the MoU and its conservation and management activities?” Indonesia stated that they “attend(ed) MOS as observers”; Myanmar stated that “when we attend CMS signatory state meeting, we encourage other state represents to signed MoU with CMS, sharing knowledge what we had done in Myanmar.”; and Papua New Guinea stated that “PNG has been promoting this MoU mainly through the Coral Triangle Initiative mainly with Indonesia and Solomon Island and Australia”.

*Initiatives to support the Dugong MoU Secretariat to ensure the objectives of the CMP are met (question 37)*

Less than half (48%) of the reporting countries provided a written response to Question **37**, an open-ended Question (“What, if anything, has your country done to support the Dugong MoU Secretariat to ensure the objectives of the CMP are met). Eritrea, Jordan, Kenya, Madagascar, Mozambique, Seychelles, Somalia, Sri Lanka, Sudan, Tanzania, Thailand, United Arab Emirates and Vanuatu did not respond. Responses mainly consisted of a brief statement about one contribution, however, some countries provided detailed responses on multiple contributions (Box 12). Two countries advised that they had done nothing: Palau and Solomon Islands.

**India:**

- "a) National Conservation Action Plan for Dugongs and their habitat has been developed.*
- b) Interview based assessment of dugong distributions and their threats due to fisheries etc has been completed.*
- c) Dugong Recovery Plan has been developed and implemented.*
- d) To seek regional cooperation in the conservation of dugongs. First Regional Workshop with South-Asian countries has already been conducted and looking forward to organise the second Meeting with help of Dugong MOU Secretariat."*

**Philippines:**

*"In 2015, the Philippines co-hosted with the CMS secretariat and ASEAN Centre for Biodiversity a capacity building workshop for non-CMS member countries in the ASEAN region. The workshop was an opportunity to share the Philippine experience in implementing the work program of the CMS, and the MOUs which the Philippines is a signatory including the Dugong MOU. The workshop aimed to encouraged the ASEAN member countries to join the convention and/or participates in its conservation instruments...."*

**Saudi Arabia:**

*"The Saudi Wildlife Authority has held a meeting during the visit of the Executive Coordinator of the CMS Office in Abu Dhabi to Riyadh, where various measures to enhance collaboration between the CMS Office in Abu Dhabi and the Kingdom of Saudi Arabia were discussed, including participation in the Dugong and Seagrass Conservation Project."*

**Box 12:** Examples of written text to Question 37 "What, if anything, has your country done to support the Dugong MoU Secretariat to ensure the objectives of the CMP are met?"  
From the latest National Report 2016-2019.

*Actions to seek resources that support the implementation of the Dugong MoU (question 38)*

Three countries provided "other" information in response to Question 38: ("Which of the following actions has your country undertaken to seek resources that support the implementation of the Dugong MoU (at either a national or international level)?"). Kenya stated that "we have joint project in the WIO by WIOMSA"; Myanmar stated that "DoF are always seeking funding and also expertise for Dugong and Seagrass Conservation, the Freelance Myanmar Scientists, Biologists looking forward to collaborate International Organization INGOs, Foreign Universities, Science and Institutes, organizing to get funding for fully research and monitoring and population estimates of Myanmar Dugong and Seagrass Bed for Conservation. Myanmar is one of the first signatory states of Dugong and Seagrass Conservation, one decade ago, it is still lack of funding to estimate the population also far away for research and monitoring, but Dugong are still occurrence at Myanmar coastal water."; and Papua New Guinea stated that "PNG has had very little funding support from the Secretariat after 2013/14 and all opportunities has been through the PNG focal point, CEPA".

*Creation of links and development of synergies with other relevant regional conservation conventions, MoUs and agreements (question 39)*

Less than two thirds (60%) of reporting countries provided a written response to Question 39 ("What,

if anything, has your country done to create links and develop synergies with other relevant regional conservation conventions, MoUs and agreements?”) Madagascar, Malaysia, Mozambique, Philippines, Seychelles, Somalia, Sri Lanka, Sudan and Thailand did not respond and the responses of Bahrain, Jordan and Palau and vised that they had done nothing in response to this initiative. The Philippines National Report is missing all reference to this question as well as the question itself. Responses mainly consisted of brief statements on the other MoUs reporting countries have signed, however, some countries provided additional responses on how they are meeting the requirements of these other MoUs (Box 13).

**India:**

*“Being a signatory to the IOSEA, India is implementing the Management Action Plan as per the IOSEA conservation and Management Plan. Being signatory of UNEP/CMS Dugong MoU in which sea turtles are also care in the habitat of dugong, India has actively initiated implementing Dugong MoU.”*

**Kenya:**

*“...Currently, Kenya and Tanzania is working together on the establishment of a Transboundary Marine Conservation Area that shall enhance and promote the implementation of the MoU. Locally, there is a strong partnership between government institutions, the private sector and Conservation NGOs such as WWF, East African Wildlife Society, IFAW, Colobus Trust and the Watamu Marine Association amongst others in promoting the implementation of the MEAs and MoUs.”*

**Saudi Arabia:**

*“Saudi Arabia took the lead in developing the “Regional Action Plan for the Conservation of the Coral Reefs and the Establishment of Special Protected Areas” for both PERSGA and OPME, and is now promoting links to the Dugong MoU with a view to develop synergies. These Action Plans also address mangrove and seagrass habitats.”*

**Tanzania:**

*“The Tanzania Turtle and Dugong Conservation Committee oversees obligation to both the CMS Dugong MoU and the CMS/UNEP IOSEA Marine Turtle MoU. In 2014, the central Tanzania coast was declared a “Regional Site of Importance to Marine Turtles” under an initiative of the CMS/UNEP IOSEA Marine Turtle MoU. The central Tanzania coast also supports a population of dugongs and hence the initiative creates direct linkages between the two MoUs and provide opportunities to attract funding for conservation programmes that provide benefits for both marine turtles and dugongs.”*

**Box 13:** Examples of written answers to Question 39 “What, if anything, has your country done to create links and develop synergies with other relevant regional conservation conventions, MoUs and agreements?” from the latest National Report 2016-2019.

**Overall performance of initiatives**

The relationship between the estimated size of a reporting country’s dugong population and how many of the key initiatives that were implemented was unclear for Section 7 (Table 24). Slightly more countries with low dugong populations did not meet the majority of key initiatives within this Section, compared to countries with moderate dugong populations. The only countries to meet all or nearly

all of the key initiatives, were countries with Low (Philippines) and Moderate (Papua New Guinea)

Dugong populations. Bahrain and Saudi Arabia, countries with a Very High HDI and large estimated dugong populations, provided limited reporting on these initiatives.

**Table 24:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how comprehensively they met the key initiatives covered by Section 7 of the latest National Report (2016-2019).

Dugong Population*	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
Very Low (10s)/NA	Palau Somalia Sudan Jordan	Eritrea Kenya	Seychelles Sri Lanka Tanzania	Egypt	
Low (100s)	Madagascar Mozambique Thailand Vanuatu	Malaysia	Myanmar	India	Philippines
Moderate (1000s)	Indonesia	Bahrain Saudi Arabia	United Arab Emirates	Solomon Islands	Papua New Guinea
High (10,000s)		Australia			

\* Dugong population data from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and Marsh personal communication.

Any relationship between a country being a partner in the GEF Dugong and Seagrass Conservation Project (Table 25) and the number of Section 7 key initiatives it met was again unclear (Table 26).

**Table 25:** Matrix table showing reporting countries that were project partners of the GEF Dugong and Seagrass Conservation Project and how comprehensively they met the key initiatives covered by Section 7 of the latest National Report (2016-2019).

GEF Project Country	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia	Kenya	Seychelles	India	Papua New Guinea Philippines
	Palau	Saudi Arabia	Myanmar	Egypt	
	Sudan	Bahrain	United Arab		
	Jordan	Eritrea	Emirates		
	Thailand	Australia	Tanzania		
<b>Yes</b>	Madagascar	Malaysia	Sri Lanka	Solomon Islands	
	Mozambique				
	Vanuatu				
	Indonesia				

**Table 26:** Matrix table showing reporting countries that are partners of the Seagrass Ecosystem Services Project (IKI) and how comprehensively they met the key initiatives covered by Section 7 of the latest National Report (2016-2019).

IKI Member	National Report Performance				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<b>No</b>	Somalia	Kenya	Seychelles	India	Papua New Guinea
	Palau	Saudi Arabia	Myanmar	Egypt	
	Mozambique	Bahrain	United Arab	Solomon Islands	
	Sudan	Eritrea	Emirates		
	Jordan	Australia	Tanzania		
	Madagascar		Sri Lanka		
	Vanuatu				
<b>Yes</b>	Thailand	Malaysia			Philippines
	Indonesia				

Papua New Guinea and Philippines were the countries that implemented the most of the key initiatives within this Section, both meeting 83%. Less than half (40%) of all reporting countries meet a minimum of 50% of Section 7 key initiatives. Seven countries (Thailand, Sudan, Somalia, Palau, Mozambique, Madagascar and Jordan) did not meet any of the key initiatives within Section 7. Thailand and Vanuatu implemented only 17% of the Section 7 key initiatives. Many of the project partners for the GEF Dugong and Seagrass Conservation Project (Mozambique, Madagascar, Vanuatu, Indonesia (17%) and Malaysia (33%)) did not implement many of the key initiatives within this Section. Additionally, Indonesia and Malaysia are Seagrass Ecosystem Services Project (IKI) members, and Indonesia has an estimated large dugong population (1000s). Language barriers may have been a contributing factor, as the national report is not offered in Thailand or Indonesia's official languages.

The IKI project commenced in 2020, which means it is too early for its influence to be reflected in the National Reports. Nonetheless, the data presented here are a baseline.

### **3.8 Section 8: Country Priorities**

#### ***Question Objectives***

The questions in this section address how each country ranks the key initiatives of the Dugong MoU Conservation and Management Plan

#### ***Results Summary***

Overall, the reporting countries indicated that they see the objectives of the Conservation Management Plan as a high priority (Table 27); more than three quarters (80%) of the key initiatives were ranked as high priorities, compared to 12% low and 8% medium. The initiatives that ranked highest ( $\geq 70\%$  of countries ranked high) were: **1.1** (“Threats facing dugong populations”); **2.1** (“Dugong populations and habitats”); **3.2** (“Dugong habitat protection”); and **9.1** (“Promote capacity building”). The initiatives which ranked as medium priorities were **7.4** (“Synergy with other conventions”) and **3.4** (“Degraded dugong habitats”). Key initiative **7.2** (“Support the Secretariat”) ranked equally as high or medium priority amongst the reporting countries. The initiatives which ranked as low priority were **1.4** (“Illegal take of dugongs”), **1.5** (“Sustainable take of dugongs”), and **6.1** (“Combat illegal trade”).

**Table 27:** Results from Question 40 in the national summary 2016-2019; the percentage of countries which selected either high, medium or low as their country's priority.

<b>Objective</b>	<b>High</b>	<b>Med</b>	<b>Low</b>
1.1 Threats facing dugong populations	75%	25%	0%
1.2 Dugong mortality in fishing activities	45%	42%	13%
1.3 Dugong mortality due to human activities	46%	33%	21%
1.4 Illegal take of dugongs	26%	30%	43%
1.5 Sustainable dugong use	22%	30%	48%
2.1 Dugong populations and habitats	70%	30%	0%
2.2 Dugong research	65%	22%	13%
2.3 Data collection and analysis	61%	26%	13%
3.1 Dugong habitat mapping	67%	25%	8%
3.2 Dugong habitat protection	70%	26%	4%
3.3 Actions to address habitat loss	61%	30%	9%
3.4 Degraded dugong habitats	38%	46%	17%
4.1 Research of habitats	50%	38%	13%
5.1 Information programmes	46%	38%	17%
5.2 Encourage local community participation	50%	33%	17%
6.1 Combat illegal trade	26%	22%	52%
6.2 Exchange information	54%	21%	25%
6.3 Improve coordination	58%	21%	21%
6.4 Database	48%	39%	13%
7.1 Encourage participation in the MoU	36%	27%	36%
7.2 Support the Secretariat	38%	38%	24%
7.3 Seek resources	52%	26%	22%
7.4 Synergy with other conventions	36%	55%	9%
8.1 Incorporation into national legislation	57%	35%	9%
8.2 Legal protection	67%	25%	8%
9.1 Promote capacity building	71%	17%	13%

Jordan was the only country which scored less than 50% for all of the key initiatives with regards to importance (Table 28). Palau ranked the key initiatives highest, listing all of them as high importance; followed by Madagascar (97%), Sudan (94%), India (92%) and Philippines (91%), which all listed the majority of key initiatives as of high importance. Australia had the second lowest score, scoring most key initiatives as of medium to low importance. Australia's dugong population is more secure than that of most other range states, which is why further initiatives may be lower priority

**Table 28:** Results from Question 40 in the national summary between 2016 and 2019. The percentage score is calculated by assigning 3 for each “high” rank, 2 for each “medium” rank, and 1 for each “low” rank provided by a country for each initiative, adding these numbers up and dividing by the maximum score possible. The data table does not include Eritrea, Kenya, Malaysia, Myanmar and Somalia due to the missing data in their National Report.

<u>Country</u>	<u>Signatory</u>	<u>Score</u>	<u>Percentage</u>
Palau	Yes	78	100%
Madagascar	Yes	76	97%
Sudan	Yes	73	94%
India	Yes	72	92%
Philippines	Yes	71	91%
Indonesia	No	68	87%
Sri Lanka	Yes	68	87%
Mozambique	Yes	67	86%
Saudi Arabia	Yes	65	83%
Vanuatu	Yes	64	82%
Bahrain	Yes	63	81%
Solomon Islands	Yes	62	79%
Papua New Guinea	Yes	59	76%
United Arab Emirates	Yes	58	74%
Thailand	Yes	57	73%
Seychelles	Yes	56	72%
Egypt	Yes	53	68%
Tanzania	Yes	50	64%
Australia	Yes	46	59%
<u>Jordan</u>	<u>No</u>	<u>38</u>	<u>49%</u>

### ***Overall performance of initiatives***

The relationship between the estimated size of a reporting country’s dugong population and how they rank the key initiatives in this Section of the latest National Report is not clear (Table 29). However, there does appear to be a slight trend for countries with low (100s) dugong populations to allocate high priorities to the majority of objectives, compared with countries with very low or high dugong populations. There appeared to be a relationship between the reporting country’s ranking of key initiatives within the latest National Report, and how well they meet them overall (Table 30). The higher the uptake of initiatives in the latest National Report, the lower a country tended to rank the key initiatives. Jordan was the only country that performed counter to this trend; it exhibited low uptake and ranked the key initiatives low.

**Table 29:** Matrix table illustrating the relationship between the dugong populations of reporting countries and how they rank the key initiatives within the latest National Report (2016-2019).

Dugong Population*	Reporting Countries Key Initiative Priority Ranking				
	<20%	21 to ≤40%	41 to ≤60%	61 to ≤80%	>80%
Very Low (10s)/NA			Jordan	Seychelles Egypt Tanzania	Palau Sudan Sri Lanka
Low (100s)				Thailand	Madagascar India Philippines Mozambique Vanuatu
Moderate (1000s)				Solomon Islands Papua New Guinea United Arab Emirates	Indonesia Saudi Arabia Bahrain
High (10,000s)			Australia		

\* Dugong population data from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011 and Marsh personal communication.

**Table 30:** Matrix table illustrating the relationship between how reporting countries ranked the key initiatives of the latest National Report (2016-2019) and how they performed for the uptake of the key initiatives overall.

Countries Priority	National Report Performance - Overall				
	Very Limited Uptake	Limited Uptake	Moderate Uptake	Good Uptake	Very Good Uptake
<20%					
21 to ≤40%					
41 to ≤60%		Jordan		Australia	
61 to ≤80%			Seychelles Egypt Papua New Guinea	United Arab Emirates Solomon Islands Tanzania Thailand	
>80%	Sudan Palau	Vanuatu Madagascar Indonesia Saudi Arabia	Bahrain Sri Lanka India Mozambique	Philippines	

There was only one open-ended response question within this Section; Question 41 (“Do you have any other comments you would like to add”). Six reporting countries left a response (Box 14).

**Australia:**

*“Priorities – these reflective of the current priorities. Some of the objectives are listed as low because related actions have been completed.*

*A number of actions referred to in this report weren’t developed specifically for dugong conservation, however these actions indirectly benefit dugong.”*

**India:**

*“India has launched the National level “Dugong Recovery Programme” recently with CAMPA Fund, amounting to USD\$4 million. This programme would encourage the higher level of community participation in the conservation of dugongs and their habitat in India.”*

**Palau:**

*“Fund is needed to improve research and monitoring of dugong population and conservation efforts in Palau.”*

**Philippines:**

*“The governments overall response to dugong conservation is subsumed in its broader program on law enforcement, ecosystem management through various models of ecosystem management, nationally through the Protected Area and local conservation areas and Critical Habitat management by local governments. Information contained in this report therefore essentially reflects the initiative of the government. Initiatives of conservation NGOs, POs, local government and academic institutions on specific aspects such as research and site-specific interventions as a result of national framework and support policies and programs of the national government may be sporadic and the current coordination and reporting mechanism may not have captured as possible such initiative throughout the archipelago.”*

**Sudan:**

*“Really my country needs a very substantial assistance in various fields to achieve many objectives in annex 1, so as to implement of Dugong MOU.*

*All studies related to dugong are research studies in a collaborative research program with the Japanese side and Faculty of Marine Science and Fisheries, Red Sea University. In addition to the rare studies carried out by some researchers in respect of dugong habitats, such as seagrass. As well as the activities carried out by BERSSGA in regard to environment evaluation of MPAs specifically Dugonab Bay and Mukkawwar Island area, which is mostly carried out by the Faculty of Marine Sciences and Fisheries, Red Sea University.*

*It is up to all of this lack of financial possibilities to carry out such research. As well as the weakness and lack or even the lack of provision financial support of the government or scientific research in Sudan in general.”*

**Vanuatu:**

*“Dugong conservation are covered in Vanuatu National Biodiversity Strategy and Action Plan which is a national obligation under UNCBD, to which Vanuatu is party.”*

**Box 14:** Responses to Question 41 ‘Do you have any other comments you would like to add?’ for the six countries providing a response, from the latest National Reports 2016-2019.

## 4 KEY FINDINGS

The purpose of the National Report is “to provide information on each signatory dugong range state’s implementation of the Dugong MoU” (see Appendix 1) with a view to giving an overview of regional and international implementation of the Dugong MoU and to highlight opportunities for collaboration.”

The response rate for the period 2016-2019 was good. Eighty-three percent of the signatory range states completed a National Report, along with four non-signatory range states. Of the 28 reports submitted, all except three used the 2016 template. These format differences prevented meaningful comparisons and the statistics in this report are based on the 25 reports in the 2016 template.

These Reports explicitly reflect the current version of the Conservation and Management Plan for the Dugong MoU and enable review of which of the menu of actions suggested by this Plan have been implemented, acknowledging that some may be inappropriate for some countries. Most (120/123) of the examples of the specific actions that the Plan suggests could be implemented, are listed in the checkbox questions in the National Report form; the remainder are largely addressed in the open-ended questions. This arrangement makes it relatively straightforward to quantify the percentage of reporting countries that have implemented each suggested action and to identify the suggestions that have been most and least implemented (Tables 31 and 32).

**Table 31:** Suggested actions in the Conservation and Management Plan that more than at least 80% of reporting countries indicated they had implemented. These actions are grouped thematically.

Suggested action	% reporting countries
Established baseline data collection and monitoring programmes to gather information on the nature and magnitude of threats.	90
Designated and managed protected/conservation areas, sanctuaries or temporary exclusion zones in areas of critical habitat, or took other measures (e.g., modification of fishing gear, banning destructive fishing practices, restrictions on vessel traffic) to remove threats to such areas and involving the local community as much as possible.	88
Considered protecting dugong habitats as part of ecosystem-based management (e.g., networks of marine protected areas).	80
Encouraged the participation of government institutions, intergovernmental organisations, the private sector and the general community in research, conservation and management efforts.	84
Developed partnerships with universities, research institutions, non-government organisations, training bodies and other relevant organisations to support capacity building initiatives.	80

**Table 32:** Suggested actions in the Conservation and Management Plan that 20% or fewer reporting countries indicated they had implemented. These actions are grouped thematically.

<b>Suggested action</b>	<b>% reporting countries</b>
Arranged regional and sub-regional workshops involving non-Signatory States to raise awareness of the MOU.	20
Developed a streamlined format for reporting and exchanging information (through the MOU Secretariat and among Signatory States) on the state of dugong conservation at the national level.	12
Established relationships with regional fisheries bodies with a view to obtaining data on incidental capture and encourage them to adopt dugong conservation measure within Exclusive Economic Zones (EEZ) and territorial waters.	16
Encouraged Signatory States to become contracting parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) and to implement the FAO Code of Conduct for Responsible Fisheries (1995).	12
Developed and used gear, devices and techniques to minimise incidental capture of dugongs in artisanal and commercial fisheries, such as the use of alternative gears and spatial closures.	20
Exchanged information and, upon request, provided technical assistance to Signatory and cooperating States to promote these activities.	20
Developed a web-based information resource for dugong conservation (including data on populations, migration, on-going projects) based on the IUCN website.	4
Regularly updated a directory of experts and organisations concerned with dugong conservation.	16
Provided and ensured the use of onshore facilities for the disposal of ship-borne waste.	16
Developed and implemented net retention and recycling schemes to minimise the disposal of fishing gear at sea and on beaches.	12
Identified migratory routes.	16
Carried out studies on dugong population dynamics and survival rates.	12
Developed incentives for adequate protection of areas of critical habitat outside protected areas.	16
Implemented incentive schemes to encourage public participation (e.g., T-shirts, public acknowledgement and certificates).	20
Established community learning/information centres.	16
Explored international funding support and other incentives for Signatory States that effectively manage populations.	12

The initiatives reported as implemented by at least 80% of reporting countries were either government- initiated (monitoring; protected areas) or aimed at facilitating domestic partnerships, rather than community-based. Those implemented by 20% or fewer respondents were: regional initiatives; initiatives involving fishing controls, waste disposal, incentives, establishing information centers and lists of experts; and requiring sophisticated dedicated research that has never been successfully conducted at other than local scales (migratory routes, population dynamics and survival rates; critical habitat).

The National Report is designed for self-reporting. There is no external review or quality control or requirement to identify the evidence used to make the assessment. The Report reflects what the

respondent believes is being done, rather than the effectiveness of what is being done. These are serious deficiencies. Ways in which these deficiencies might be addressed are considered below.

The questions aim to document initiatives implemented between when the reporting country became a signatory to the Dugong MoU and December 2016 because technically international instruments do not apply retrospectively. There is ambiguity in the instructions as to whether the reporting country should also report on initiatives introduced: (1) prior to signing the MoU but continued during the period covered by the relevant report, or (2) after December 2016. Although such activities could presumably be addressed within the 13 open-ended questions, no report explicitly identified initiatives implemented prior to signing the Dugong MoU and as illustrated below, we noted that at least some National Reports include unidentified information on prior initiatives. This finding is underestimated because we were generally unable to verify a country's answers except in the case of some of Australia's responses. The intent of the instructions should be clarified.

Additionally, we noted that the report from Australia, the only report for which we have "inside knowledge" was not comprehensive. It appears to have been completed by an officer from the lead agency with limited input from state agencies or researchers. It is likely that Australia is not an isolated case in this regard, and responders for all range states should be explicitly encouraged to engage with researchers, NGOs and other agencies to ensure that their National Report is accurate and comprehensive.

Our analysis suggests that countries that have larger dugong populations are doing more to implement the Conservation and Management Plan than countries with small populations. While not surprising, this pattern increases the risk of local extinctions and the range of the dugong becoming even more fragmented. It is also concerning that involvement in initiatives such as the GEF Dugong and Seagrass Conservation Project (Tables 6, 10, 14, 18, 22 and 26) does not appear to have increased the level of implementation of the Conservation and Management Plan.

## 5 SUGGESTIONS FOR A WAY FORWARD

We consider that the National Report template could be improved with changes which would: (1) make it much easier to estimate how comprehensively and accurately countries report that they are implementing the Dugong Conservation and Management Plan; and (2) enable a feedback loop in the planning cycle. Our suggestions borrow from the template for CMS National Reports:

1. Change the National Report template to explicitly mirror the objectives and actions in the relevant version of the Dugong MoU Conservation and Management Plan.
2. Revise the list of options for each checkbox question to reflect the suggested actions in the relevant version of the Dugong MoU Conservation and Management Plan explicitly.
3. Add elements from the CMS National Report template <https://www.cms.int/en/documents/national-reports> to the Dugong National Report template to enable the responding country to:
  - Describe the actions undertaken;
  - Identify the actions that have been most successful, and the evidence base for this assessment; and
  - Specify additional actions that should improve the outcome for dugongs in their country.

An example of the suggested format change follows for Objective 1 Action 1.1 in the current Conservation and Management Plan in Box 15.

Objective 1 - Reduce direct and indirect causes of dugong mortality
Action 1 - Identify, assess and evaluate the threats to dugong populations and develop appropriate measures to address these threats
Please indicate the actions that have been undertaken taken by your country during the reporting period. These actions can include ongoing activities as well as actions initiated during the reporting period.
(select all that apply)
<input type="checkbox"/> Establish baseline data collection and monitoring programmes to gather information on the nature and magnitude of threats
<input type="checkbox"/> Regularly update existing data on threats to dugong populations and their habitats
<input type="checkbox"/> Determine those populations affected by traditional subsistence and customary use, incidental capture in fisheries, and other sources of mortality
<input type="checkbox"/> Implement programmes to correct adverse social and economic incentives that threaten dugong populations
<input type="checkbox"/> Facilitate the development of means of subsistence to minimise resultant adverse social and economic impacts
<input type="checkbox"/> Enact, where not already in place, legislation and prohibit the direct use (capture or killing) of, and domestic trade in, dugongs their parts or products, whilst allowing exceptions for traditional subsistence or customary use
<input type="checkbox"/> Establish management programmes to enforce such legislation
<input type="checkbox"/> Negotiate, where appropriate, management agreements in consultation with other concerned states
<input type="checkbox"/> Identify resources and sources of funding for the above programmes
<i>the following questions appear only if at least one action was selected</i>
Overall, how successful have these actions been in reducing threats?
Tick one box
<input type="checkbox"/> 1 very little impact
<input type="checkbox"/> 2 small impact
<input type="checkbox"/> 3 good impact
<input type="checkbox"/> 4 large positive impact
<input type="checkbox"/> not known
Please describe the actions that you consider particularly successful and why [free text]
Please describe the actions that you consider of limited success and why [free text]
Please identify the main form(s) of evidence that has/have been used to make this assessment. [free text]
What else could have been done to reduce direct and indirect causes of dugong mortality for dugongs in your country?

**Box 15:** An example of a suggested question format for a revised on-line Dugong National Report. Similar adjustments could be made to reflect each of the objectives and actions of a revised Conservation and Management Plan.

We consider that this reform would be further enhanced by several additional initiatives:

1. Ask the signatory range states to submit new National Reports in 2022 in time for MOS4, given that this meeting has been delayed by the COVID-19 pandemic. These reports should be requested in the suggested revised template (see Box 15 above).
2. Work with the IUCN Sirenia Specialist Group to develop a list of experts, including details of expertise and contact details, for the Dugong MoU website. This would address one of the actions that the 2016-2019 National Reports indicate has been implemented by relatively few reporting countries (Table 32) and increase the visibility of local experts.
3. Define regional groupings of countries as part of the MOS4 agenda and provide time during MOS4 for the regional groups to workshop potential regional activities. This would address another of the actions that the 2016-2019 National Reports indicate have been implemented by relatively few reporting countries (Table 32). It would also be an opportunity to identify non-signatory range states in each region and to ask the other range states to encourage them to sign the MoU.
4. Dedicate a session at MOS4 or in the associated technical meeting to workshop options for reducing the incidental capture of dugongs in fishing gear as this threat is not only the major source of dugong mortality in most parts of the species range (Marsh and Sobtzick 2015) but is addressed in only a low percentage of National Reports (Table 32).
5. Explicitly encourage the countries participating in the IKI project to implement additional initiatives suggested in the Duong MoU Conservation and Management Plan.
6. Advise reporting countries to complete their National Report in association with other relevant agencies, relevant researchers and NGOs to increase the likelihood of a comprehensive response.
7. Update the Regional Status and Priority Actions for Dugong range states (Marsh et al. 2002) as an additional reporting methodology as part of the regular reporting process under the MoU process, provided the initiative is endorsed by the MOS after a trial with a subset of countries. This system should be on-line in WIKI format to enable regular updates and more up to date information and, through the involvement of the IUCN Sirenia Specialist Group and relevant government authorities, allow for quality control and government engagement. Additionally, this proposed system would provide for collated information on best practice and lessons learned, inclusive of IKI and GEF project learning and outputs. It is envisaged that this system would be complementary to national reporting in the run up to MOS4, where the initiative would be introduced, and training/explanation to signatory range states provided as part

of MOS4 agenda. The Regional Status and Priority Actions Report would be used both as a 2022/23 baseline as well as one of the means of enabling countries to update their status reports every 3 years under the MoU with appropriate quality control provided by the IUCN Sirenian Specialist Group.

## 6 REFERENCES

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## 7 APPENDICES

### APPENDIX 1: NATIONAL REPORT TEMPLATE – 2016 VERSION

## National Report Template

### Background

The purpose of the National Report is to provide information on each Signatory State's implementation of the Dugong MOU. The information in National Reports will be collated to give an overview of regional and international implementation of the Dugong MOU and to highlight opportunities for collaboration.

When completing the National Report template, you may wish to refer to the Dugong MOU Conservation and Management Plan (CMP) and Annex 1 (for examples of specific actions that could be implemented under the CMP) at

[www.cms.int/sites/default/files/document/Dugong\\_CMP\\_Eng\\_0.pdf](http://www.cms.int/sites/default/files/document/Dugong_CMP_Eng_0.pdf).

### Instructions for completing the National Report

- Please complete all Questions. Where a written response is required, please provide an answer.
- Checkboxes can be selected by clicking on it, an "x" will appear in the box. You can de-select a box by clicking on it again.
- To enter text, highlight on "click here to insert text" and start typing.
- You should select all activities (checkboxes) that are relevant to each Question.
- The Questions in the National Report refer to any activities you have undertaken since your country became a Signatory to the Dugong MOU, until December 2016. For example, if a country became a Signatory to the MOU in January 2010, this report would refer to any activities from January 2010 to December 2016 (particularly highlighting recent activities).
- Detailed responses are encouraged, especially with regard to future plans. Wherever possible and/or relevant, please indicate the source of information used to answer a particular Question. For example, if you are answering using information from a published annual report, please include the name of the report and link if it is available online. Remember that you are sharing information with other countries about your progress, so it may be of benefit to them.
- When you have completed your report, please email it, along with any other relevant information to the Dugong MOU Secretariat at [CmsOffice.ae@cms.int](mailto:CmsOffice.ae@cms.int).

- The deadline for submission of National Reports is 31 December 2016. Reports must be received by this date to allow time for collation of results prior to presentation at the Third Meeting of Signatories on 13-14 March 2017.

### Section 1: General information

1. What country are you completing the National Report on behalf of?
2. What agency or institution has been primarily responsible for answering the Questions in this report?
3. Please list any other agencies, institutions or non-government organisations that have provided input:
4. On what date did the Dugong MOU take effect in your country? i.e., what is the start date of activities reported on in this National Report?
5. On what date are you submitting this report?

### Section 2: Dugong status

Questions in Section 2 address the following objectives and actions of the Dugong MOU Conservation and Management Plan:

- *Objective 1: Reduce direct and indirect causes of dugong mortality*
  - 1.1 Threats facing dugong populations
  - 1.2 Dugong mortality in fishing activities
  - 1.3 Dugong mortality due to human activities
  - 1.4 Illegal Take of Dugongs
  - 1.5 Sustainable Use of Dugongs
- *Objective 8. Improve legal protection of dugongs and their habitats*
  - 8.2 Legal protection

**6. Which of the following has your country done to identify, assess and evaluate the threats to dugong populations?**

- Established baseline data collection and monitoring programmes to gather information on the nature and magnitude of threats.
- Regularly updated existing data on threats to dugong populations and their habitats.
- Determined those populations affected by traditional subsistence and customary use, incidental capture in fisheries, and other sources of mortality.
- conducted socio-economic studies among communities that interact with dugongs and their habitats.
- Other, please describe: Click here to enter text.

**7. Has your country undertaken measures to address these threats to dugongs?**

- Yes (please continue to Question 8.)
- No (please continue to Question 9.)

**8. What kind of measures has your country undertaken to address these threats?**

**9. Which of the following has your country done to reduce the incidental capture and mortality of dugongs as a result of fishing activities (i.e. bycatch of dugongs)?**

- Developed and used gear, devices and techniques to minimise incidental capture of dugongs in artisanal and commercial fisheries, such as the use of alternative gears and spatial closures.
- Limited or controlled the use of gears known to be harmful to dugongs throughout the range of dugong.
- Developed procedures and extension programmes to promote implementation of these measures.
- Exchanged information and, upon request, provided technical assistance to Signatory and cooperating States to promote these activities.
- Liaised and coordinated with fishing industries, fisheries management organisations and community groups to develop and implement activities that reduce the incidental capture and mortality of dugongs.
- Developed and implemented net retention and recycling schemes to minimise the disposal of fishing gear at sea and on beaches.
- Provided and ensured the use of onshore facilities for the disposal of ship-borne waste.
- Other, please describe: Click here to enter text.

**10. Which of the following has your country done to reduce the incidental mortality of dugongs from other anthropogenic (human) activities?**

- Assessed the level, location and impact of anthropogenic impacts on dugongs at ecologically relevant scales.
- Reduced, as much as possible, all other human impacts on dugongs and their habitats in areas that sustain subsistence and/or customary use of dugongs.
- Established appropriate management programmes to ensure that anthropogenic impacts are addressed, taking account of the temporal and spatial variability of dugong reproductive rates and other impacts on the species in a precautionary manner.
- Other, please describe: Click here to enter text.

**11. Has your country undertaken actions to reduce and/or prevent the illegal take of dugongs?**

- Yes *(please continue to Question 12.)*
- No *(please continue to Question 13.)*

**12. What has your country done to prevent the illegal take of dugongs?**

**13. Is customary and/or subsistence use of dugongs allowed in your country?**

- Yes *(please continue to Question 14.)*
- No *(please continue to Question 15.)*

**14. What has your country done to ensure that customary and/or subsistence use of dugongs is sustainable?**

**15. Are dugongs and/or their habitats granted legal protection in your country?**

- Yes *(please continue to Question 16.)*
- No *(please continue to Question 17.)*

**16. What kind of legal protection are dugongs and/or their habitats granted and what measures has your country developed to review and, where necessary, strengthen legal protection of dugongs and their habitats?**

### Section 3: Dugong habitats

Questions in Section 3 address the following objectives and actions of the Dugong MOU Conservation and Management Plan:

- *Objective 3: Protect, conserve and manage habitats for dugong*
  - *3.2 Protect dugong habitats*
  - *3.3 Actions to address habitat loss*
  - *3.4 Degraded dugong habitats*

#### **17. Which of the following has your country done to protect and conserve dugong habitats (such as seagrasses)?**

- Designated and managed protected/conservation areas, sanctuaries or temporary exclusion zones in areas of critical habitat, or took other measures (e.g., modification of fishing gear, banning destructive fishing practices, restrictions on vessel traffic) to remove threats to such areas and involving the local community as much as possible.
- Developed incentives for adequate protection of areas of critical habitat outside protected areas.
- Considered protecting dugong habitats as part of ecosystem-based management (e.g., networks of marine protected areas).
- Assessed the environmental impact of marine and coastal development and other human activities on dugong populations and their habitats.
- Monitored and promoted the protection of water quality from land-based and maritime pollution, including marine debris, which may adversely affect dugongs and their habitats.
- Strengthened the application of existing bans on the use of poisonous chemicals and explosives in the exploitation of marine resources.
- Other, please describe: Click here to enter text.

#### **18. Which of the following has your country done to address current degradation, and to reduce the risk of future degradation of dugong habitats (such as seagrasses)?**

- Identified and enhanced recovery of degraded seagrass habitats used by dugongs.
- Identified and enhanced recovery of degraded mangrove and coral reef habitats used by dugongs.
- Undertook measures to restore degraded habitats.
- other, please describe: Click here to enter text.

## Section 4: Research and Monitoring

Questions in Section 4 address the following objectives and actions of the Dugong MOU Conservation and Management Plan:

- *Objective 2: Improve understanding through research and monitoring*
  - *2.1 Dugong Populations and Habitats*
  - *2.2 Dugong Research*
  - *2.3 Data Collection and Analysis*
- *Objective 3: Protect, conserve and manage habitats for dugong*
  - *3.1 Dugong Habitat Mapping*
- *Objective 4: Improve understanding of dugong habitats through research and monitoring*
  - *4.1 Research of Habitats*

**19. What has your country done to determine the distribution and abundance of dugong populations to provide a base for future conservation efforts and actions?**

**20. Which of the following has your country done to conduct research and monitoring into dugongs?**

- Initiated and/or continued long-term monitoring of priority dugong populations at appropriate spatial scales.
- Identified migratory routes through the use of techniques such as genetic studies and/or satellite tracking where appropriate.
- Carried out studies on dugong population dynamics and survival rates.
- Promoted the use of traditional ecological knowledge in research and management studies, where possible.
- Involved local communities in research and monitoring programmes, with training as required.
- Periodically reviewed and evaluated research and monitoring activities.
- Identified and included priority research and monitoring needs in regional and sub-regional action plans.
- Conducted collaborative studies and monitoring of genetic identity, conservation status, migrations, and other biological and ecological aspects of dugongs.
- Other, please describe: [Click here to enter text.](#)

**21. Does your country collect data on dugongs?**

- Yes *(please continue to Question 22.)*
- No *(please continue to Question 23.)*

**22. What kind of data does your country collect on dugongs and how is it analysed?**

**23. Which of the following has your country done to conduct research and monitoring into important dugong habitats (such as seagrasses)?**

- Conducted baseline studies or gathered secondary information on dugong habitats using cost effective techniques where possible, including community-based monitoring.
- Initiated and/or continued long-term monitoring of priority dugong habitats.
- Promoted the use of traditional ecological knowledge in research and management studies, where possible.
- Involved local communities in research and monitoring programmes with training as required.
- Periodically reviewed and evaluated research and monitoring activities.
- Identified and included priority research and monitoring needs in regional and sub-regional action plans.
- Other, please describe: [Click here to enter text.](#)

**24. Has your country undertaken any identification and mapping of important dugong habitats (such as seagrasses)?**

- Yes *(please continue to Question 25.)*
- No *(please continue to Question 26.)*

**25. What kind of identification and mapping of dugong habitats has your country undertaken?**

## Section 5: Dugong conservation

Questions in Section 5 address the following objectives and actions of the Dugong MOU Conservation and Management Plan:

- *Objective 5: Raise awareness of dugong conservation*
  - *5.1 Information programmes*
  - *5.2 Encourage local community participation*

### 26. Which of the following has your country done to establish education, awareness and information programmes?

- Collected, developed, coordinated and disseminated education materials (e.g. dedicated regional website).
- Identified key persons/champions to help disseminate messages about the need to conserve dugongs and their habitats.
- Established community learning/information centres.
- Developed and implemented mass media information programmes.
- Developed and conducted focused education and awareness programmes for target groups (e.g. policy makers, teachers, schools, fishing communities, subsistence and customary users, media).
- Encouraged the incorporation of dugong biology and conservation issues into school curricula.
- Organised special events related to dugong conservation and biology (e.g., Dugong Day, Year of the Dugong, symposia, and community education workshops).
- Promoted public participation in conservation activities.
- Involved stakeholders, including key policymakers, subsistence and customary users, and local communities in particular, in planning and implementation of conservation and management measures.
- Encouraged the participation of government institutions, intergovernmental organisations, the private sector and the general community (e.g., students, volunteers, fishing communities, local communities) in research, conservation and management efforts.
- Implemented, where appropriate, incentive schemes to encourage public participation (e.g., T-shirts, public acknowledgement and certificates).

**27. What specifically has your country done to encourage local communities to actively participate in conservation efforts?**

**Section 6: Cooperation**

Questions in Section 6 address the following objectives and actions of the Dugong MOU Conservation and Management Plan:

- *Objective 6: Enhance national, regional and international cooperation*
  - *6.1 Combat illegal trade*
  - *6.2 Information exchange*
  - *6.3 Improve coordination*
  - *6.4 Database*
- *Objective 8: Improve legal protection of dugongs and their habitats*
  - *8.1 Incorporation into national legislation*
- *Objective 9: Enhance national, regional and international cooperation on capacity building*
  - *9.1 Promote capacity building*

**28. Which of the following has your country done in order to collaborate with and assist Range States to combat illegal international trade of dugongs and dugong related products?**

- Encouraged Signatory States, that have not already done so, to become Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- Reviewed at a national level, compliance with obligations under CITES relating to illegal international trade in dugong parts or products.
- Facilitated better compliance with CITES through training of relevant authorities in cooperation with other Signatory States, the CITES Secretariat and other relevant organisations.
- Identified routes of international illegal trade through monitoring, and sought cooperation to take action to prevent, deter and, where possible, eliminate it.
- Other, please describe: [Click here to enter text.](#)

**29. What has your country done to work collaboratively with dugong Range States to combat illegal domestic and/or regional trade of dugongs and dugong related products?**

**30. Which of the following has your country undertaken to cooperate in enforcement activities relating to the illegal trade of dugongs and dugong related products?**

- Exchanged and discussed information on compliance and illegal trade issues at regular intervals, such as through annual reporting to the MOU Secretariat and at meetings of the Signatory States.
- Identified, prevented, deterred and, where possible, eliminated domestic illegal trade through monitoring, implementation of legislation, identification of gaps in enforcement capabilities, and training of enforcement officers.
- Other, please describe: Click here to enter text.

**31. Which of the following has your country done to develop and implement mechanisms for effective exchange of information?**

- Identified and strengthened existing mechanisms for cooperation at the regional and sub-regional level.
- Developed a website and/or newsletter to facilitate networking and exchange of information.
- Developed a web-based information resource for dugong conservation (including data on populations, migration, on-going projects) based on the IUCN website.
- Regularly updated a directory of experts and organisations concerned with dugong conservation.
- Developed networks for cooperative management of shared populations, within or across sub-regions, and where appropriate, formalise cooperative management arrangements.
- Cooperated where possible in the establishment of transboundary marine protected areas using ecological rather than political boundaries.
- Developed a streamlined format for reporting and exchanging information (through the MOU Secretariat and among Signatory States) on the state of dugong conservation at the national level.
- Encouraged Signatory States to become contracting parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) and to implement the FAO Code of Conduct for Responsible Fisheries (1995).
- Established relationships with regional fisheries bodies with a view to obtaining data on incidental capture and encourage them to adopt dugong conservation measure within Exclusive Economic Zones (EEZ) and territorial waters.

- Determined the most appropriate methods for information and expertise among nations, scientific institutions, non-governmental and international organisations, in order to develop and implement best practice approaches to the conservation of dugongs and their habitats.
- Exchanged at regular intervals scientific and technical information and expertise among nations, scientific institutions, non-governmental and international organisations, in order to develop and implement best practice approaches to conservation of dugongs and their habitats.
- Disseminated traditional knowledge on dugongs, their habitats and traditional practices for conservation and management in a culturally appropriate manner.
- Updated data on dugong populations of regional interest on a regular basis (e.g. country status reports).
- Other, please describe: [Click here to enter text.](#)

**32. Which of the following has your country done to improve coordination among government and non- government sectors and communities in the conservation of dugongs and their habitats?**

- Reviewed the roles and responsibilities of government agencies related to the conservation and management of dugongs and their habitats.
- Designated a lead agency responsible for coordinating national dugong conservation and management policy.
- Identified non-governmental organisations with an interest in dugong conservation and management.
- Encouraged cooperation within and among government and non-government sectors, including through the development and/or strengthening of national networks.
- Other, please describe: [Click here to enter text.](#)

**33. What has your country done to develop and implement a regional database of relevant information in relation to dugong conservation and management?**

**34. Which of the following has your country done to encourage Range/Signatory States to incorporate dugong and habitat conservation and protection measures into national legislation?**

- Encouraged MOU Signatory States that have not already done so to become Parties to the Convention on Migratory Species (CMS).
- Encouraged the establishment of legislation to protect dugongs and their habitats while recognising existing traditional management systems.
- Reviewed domestic policies and laws to address gaps or impediments to dugong conservation.
- Ensured corporate sanctions for harming dugongs or destroying habitat.
- Trained law enforcement authorities.
- Raised public awareness to boost surveillance for reporting of illegal activities.
- Other, please describe: Click here to enter text.

**35. Which of the following has your country done to promote capacity building at all levels to strengthen conservation measures?**

- Identified needs for capacity-building in terms of human resources, knowledge and facilities.
- Provided and/or coordinated training (e.g., through workshops) in conservation and management techniques for dugongs and their habitats to relevant agencies, individuals and local communities.
- Developed partnerships with universities, research institutions, non-government organisations, training bodies and other relevant organisations to support capacity building initiatives.
- Identified, assessed, developed and implemented training programmes for local communities, non- government organisations, community-based organisations, media, enforcement officers, policy makers, law makers and decision makers.
- Enhanced capacity at all levels to develop and undertake joint research programmes on dugong and their habitats.
- Organised forums (local, national and regional as appropriate) with the involvement of all relevant stakeholders to enable knowledge sharing and capacity building.
- Provided training on development, implementation and monitoring of community rehabilitation programmes.

- Supported local communities and relevant national organisations with necessary basic equipment and facilities to enable protection, conservation and management of dugong and their habitats.
- Other, please describe: [Click here to enter text.](#)

## Section 7: Implementation of the MOU

Questions in Section 7 address the following objectives and actions of the Dugong MOU

Conservation and Management Plan:

- *Objective 7: Promote implementation of the MOU*
  - *7.1 Encourage participation in the MOU*
  - *7.2 Support the Secretariat*
  - *7.3 Seek resources*
  - *7.4 Synergies with other conventions*

**36. Which of the following has your country done to encourage all Range States to participate in the MOU and its conservation and management activities?**

- Encouraged non-Signatory States to sign the MOU.
- Arranged regional and sub-regional workshops involving non-Signatory States to raise awareness of the MOU.
- Other, please describe: [Click here to enter text.](#)

**37. What, if anything, has your country done to support the Dugong MOU Secretariat to ensure the objectives of the CMP are met?**

**38. Which of the following actions has your country undertaken to seek resources that support the implementation of the Dugong MOU (at either a national or international level)?**

- Prioritised conservation and management activities for funding.
- Explored funding options with governments and other donors (such as the Asian Development Bank, World Bank, UNDP, European Union, UNEP, GEF).
- Solicited funding and other contributions from industries that have impacts on dugongs and their habitats (e.g., fisheries, tourism, oil industry, real estate).
- Explored international funding support and other incentives for Signatory States that effectively manage populations.
- Other, please describe: [Click here to enter text.](#)

**39. What, if anything, has your country done to create links and develop synergies with other relevant regional conservation conventions, MOUs and agreements?**

## Section 8: Country priorities & additional comments

### 40. How much of a priority is each of the objectives below to your country?

Objective	High	Med	Low
1.1 Threats facing dugong populations			
1.2 Dugong mortality in fishing activities			
1.3 Dugong mortality due to human activities			
1.4 Illegal take of dugongs			
1.5 Sustainable dugong use			
2.1 Dugong populations and habitats			
2.2 Dugong research			
2.3 Data collection and analysis			
3.1 Dugong habitat mapping			
3.2 Dugong habitat protection			
3.3 Actions to address habitat loss			
3.4 Degraded dugong habitats			
4.1 Research of habitats			
5.1 Information programmes			
5.2 Encourage local community participation			
6.1 Combat illegal trade			
6.2 Exchange information			
6.3 Improve coordination			
6.4 Database			
7.1 Encourage participation in the MOU			
7.2 Support the Secretariat			
7.3 Seek resources			
7.4 Synergy with other conventions			
8.1 Incorporation into national legislation			
8.2 Legal protection			
9.1 Promote capacity building			

### 41. Do you have any other comments you would like to add?

APPENDIX 2: DATA ON SIGNATORY AND RANGE STATES<sup>4</sup>

Country	Signatory to Dugong MoU	National Report Available in Official Language	Estimated dugong population size <sup>#</sup>	Local Partner of GEF Dugong and Seagrass Conservation Program	Involved in the Seagrass Ecosystem Services Project	HDI Category <sup>^</sup>
Australia	Yes	Yes	Tens of thousands	Supporting Country	No	VHHD
Bahrain	Yes	Yes	Thousands	No	No	VHHD
Bangladesh	Yes	No	NA	No	No	MHD
Brunei Darussalam	No	No	Tens	No	No	VHHD
Cambodia	No	No	Tens	No	No	MHD
China	No	No	Tens	No	No	MHD
Comoros	Yes	Yes	Tens	No	No	MHD
Djibouti	No	Yes	Tens	No	No	LHD
Egypt	Yes	Yes	Tens	No	No	HHH
Eritrea	Yes	Yes	NA	No	No	LHD
India	Yes	Yes	Hundreds	Supporting Country	No	VHHD
Indonesia	No	No	Thousands	Project Country	Yes	MHD
Iran	No	No	Tens	No	No	HHH
Iraq	No	Yes	NA	No	No	HHH
Israel	No	Yes	NA	No	No	MHD
Japan	No	No	Less than 10	No	No	VHHD
Jordan	No	Yes	NA	No	No	VHHD
Kenya	Yes	Yes	Tens	Supporting Country	No	MHD
Kuwait	No	Yes	NA	No	No	VHHD
Madagascar	Yes	Yes	Hundreds	Project Country	No	LHD
Malaysia	No	Yes	Hundreds	Project Country	Yes	VHHD
Maldives	No	No	Extinct	No	No	HHH
Mauritius	No	Yes	NA	No	No	VHHD
Mayotte (France)	Yes	Yes	Hundreds	No	No	VHHD*
Mozambique	Yes	No	Hundreds	Project Country	No	LHD

<sup>4</sup> France is the signatory state that represents Mayotte and New Caledonia

Myanmar	Yes	No	Hundreds	Supporting Country	No	MHD
New Caledonia (France)	Yes	Yes	Thousands	No	No	VHHD*
Oman	No	Yes	NA	No	No	VHHD
Pakistan	No	Yes	Extinct	No	No	MHD
Palau	Yes	Yes	Tens	No	No	VHHD
Papua New Guinea	Yes	Yes	Thousands	Supporting Country	No	MHD
Philippines	Yes	Yes	Hundreds	Supporting Country	Yes	HHD
Qatar	No	Yes	Thousands	No	No	VHHD
Saudi Arabia	Yes	Yes	Thousands	No	No	VHHD
Seychelles	Yes	Yes	Tens	Supporting Country	No	HHD
Singapore	No	Yes	Tens	No	No	VHHD
Solomon Islands	Yes	Yes	Thousands	Project Country	No	MHD
Somalia	Yes	Yes	NA	No	No	NA
Sri Lanka	Yes	No	Tens	Project Country	No	HHD
Sudan	Yes	Yes	Tens	No	No	LHD
Tanzania	Yes	Yes	Tens	Supporting Country	No	LHD
Thailand	Yes	No	Hundreds	No	Yes	HHD
Timor-Leste	Yes	No	Hundreds	Project Country	Yes	MHD
United Arab Emirates	Yes	Yes	Thousands	Supporting Country	No	VHHD
Vanuatu	Yes	Yes	Hundreds	Project Country	No	MHD
Viet Nam	No	No	Tens	No	No	HHD
Yemen	Yes	Yes	Hundreds	No	No	LHD

VVHD = Very high human development

HHD = High human development

MHD = Medium human development

LHD = Low human development

# This data is collected from “Ecology and Conservation of the Sirenia”, Marsh et al. 2011

^ This data is collected from the United Nations Development Program: <http://hdr.undp.org/en/content/human-development-index-hdi>

\* This data is for France, and not specifically the island nations of Mayotte and New Caledonia

**APPENDIX 3: PERFORMANCE IN NATIONAL REPORT FOR SECTION 2 – DUGONG STATUS**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Uptake Score</b>
<b>6a</b>	Jordan Sudan Vanuatu	90%	Very Good Uptake
<b>6b</b>	Eritrea Indonesia Jordan Madagascar Palau Papua New Guinea Saudi Arabia Solomon Islands Sudan Vanuatu	66%	Good Uptake
<b>6c</b>	Egypt Indonesia Jordan Myanmar Palau Seychelles Sudan	76%	Good Uptake
<b>6d</b>	Bahrain Egypt Jordan Mozambique Myanmar Palau Saudi Arabia Seychelles Sri Lanka Sudan Tanzania Thailand United Arab Emirates Vanuatu	52%	Moderate Uptake
<b>7</b>	Egypt Indonesia Jordan Mozambique Papua New Guinea Somalia Sudan	76%	Good Uptake
<b>9a</b>	Bahrain Egypt Eritrea India Indonesia Jordan Madagascar Malaysia	20%	Limited Uptake

	Mozambique		
	Myanmar		
	Palau		
	Papua New Guinea		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Sri Lanka		
	Sudan		
	Tanzania		
	United Arab Emirates		
<b>9b</b>	Bahrain	58%	Moderate Uptake
	Indonesia		
	Madagascar		
	Malaysia		
	Palau		
	Papua New Guinea		
	Seychelles		
	Sudan		
	Tanzania		
	Vanuatu		
<b>9c</b>	Eritrea	44%	Moderate Uptake
	Indonesia		
	Jordan		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Sudan		
	Tanzania		
	Vanuatu		
<b>9d</b>	Egypt	20%	Limited Uptake
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		

	United Arab Emirates		
	Vanuatu		
<b>9e</b>	Eritrea	62%	Good Uptake
	Indonesia		
	Madagascar		
	Malaysia		
	Saudi Arabia		
	Seychelles		
	Sudan		
	Thailand		
	Vanuatu		
<b>9f</b>	Australia	12%	Very Limited Uptake
	Bahrain		
	Egypt		
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		
<b>9g</b>	Egypt	16%	Very Limited Uptake
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Papua New Guinea		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		

<b>10a</b>	Bahrain Indonesia Myanmar Palau Papua New Guinea Seychelles Solomon Islands Somalia Sudan Tanzania	60%	Good Uptake
<b>10b</b>	Egypt Kenya Malaysia Palau Philippines Saudi Arabia Seychelles Somalia Sudan Tanzania Vanuatu	56%	Moderate Uptake
<b>10c</b>	Egypt Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Saudi Arabia Seychelles Somalia Sri Lanka Sudan Vanuatu	44%	Moderate Uptake
<b>11</b>	Jordan Palau Papua New Guinea Seychelles Somalia Sudan	75%	Good Uptake
<b>13</b>	Australia Myanmar Papua New Guinea Solomon Islands Vanuatu	78%	Good Uptake
<b>15</b>	Jordan Palau Papua New Guinea Somalia Sudan	79%	Good Uptake

**APPENDIX 4: PERFORMANCE IN NATIONAL REPORT FOR SECTION 3 – DUGONG HABITATS**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Performance Score</b>
<b>17a</b>	Kenya Papua New Guinea Somalia	88%	Very Good Uptake
<b>17b</b>	Australia Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Papua New Guinea Philippines Saudi Arabia Seychelles Solomon Islands Somalia Sudan Tanzania Thailand United Arab Emirates Vanuatu	16%	Very Limited Uptake
<b>17c</b>	Egypt Jordan Kenya Myanmar Somalia	80%	Very Good Uptake
<b>17d</b>	India Indonesia Kenya Madagascar Myanmar Palau Seychelles Solomon Islands Somalia Sudan Tanzania	56%	Moderate Uptake
<b>17e</b>	Egypt India Indonesia Kenya Madagascar Malaysia Myanmar Palau Seychelles	52%	Moderate Uptake

	Somalia Sri Lanka Vanuatu		
<b>17f</b>	Australia Egypt India Kenya Malaysia Myanmar Papua New Guinea Saudi Arabia Seychelles Solomon Islands Somalia	56%	Moderate Uptake
<b>18a</b>	Bahrain Eritrea Indonesia Kenya Malaysia Mozambique Palau Saudi Arabi Seychelles Somalia Sudan Vanuatu	52%	Moderate Uptake
<b>18b</b>	Jordan Kenya Malaysia Mozambique Palau Seychelles Somalia Sudan Vanuatu	64%	Good Uptake
<b>18c</b>	Bahrain Egypt Eritrea Indonesia Kenya Madagascar Malaysia Mozambique Myanmar Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sudan Tanzania Vanuatu	32%	Limited Uptake

**APPENDIX 5: PERFORMANCE IN NATIONAL REPORT FOR SECTION 4 – RESEARCH AND MONITORING**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Performance Score</b>
<b>20a</b>	Bahrain Eritrea Kenya Madagascar Myanmar Palau Philippines Saudi Arabia Somalia Sudan Vanuatu	56%	Moderate Uptake
<b>20b</b>	Bahrain Egypt Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Papua New Guinea Philippines Saudi Arabia Seychelles Solomon Islands Somalia Sudan Tanzania Vanuatu	16%	Very Limited Uptake
<b>20c</b>	Bahrain Egypt Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Papua New Guinea Philippines Saudi Arabia Seychelles Solomon Islands	12%	Very Limited Uptake

	Somalia Sri Lanka Sudan Tanzania Vanuatu		
<b>20d</b>	Bahrain Jordan Kenya Madagascar Malaysia Mozambique Palau Philippines Saudi Arabia Seychelles Somalia Sri Lanka Sudan United Arab Emirates	44%	Moderate Uptake
<b>20e</b>	Bahrain Indonesia Jordan Kenya Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sri Lanka Sudan Vanuatu	52%	Moderate Uptake
<b>20f</b>	Egypt Eritrea India Indonesia Jordan Kenya Madagascar Myanmar Palau Papua New Guinea Philippines Saudi Arabia Somalia Sri Lanka Sudan Vanuatu	36%	Limited Uptake
<b>20g</b>	Egypt Indonesia Kenya Madagascar Myanmar Palau Papua New Guinea	56%	Moderate Uptake

	Somalia Sri Lanka Sudan United Arab Emirates		
<b>20h</b>	Bahrain Egypt Eritrea India Indonesia Jordan Kenya Madagascar Myanmar Palau Papua New Guinea Saudi Arabia Seychelles Solomon Islands Somalia Sri Lanka Sudan United Arab Emirates Vanuatu	24%	Limited Uptake
<b>21</b>	Jordan Palau Somalia Sudan	83%	Very Good Uptake
<b>23a</b>	Jordan Kenya Palau Saudi Arabia Somalia Sudan Vanuatu	73%	Good Uptake
<b>23b</b>	Bahrain Egypt Eritrea Jordan Kenya Madagascar Malaysia Myanmar Palau Saudi Arabia Somalia Sri Lanka Sudan Vanuatu	44%	Moderate Uptake
<b>23c</b>	Bahrain India Kenya Malaysia Mozambique Palau	40%	Moderate Uptake

	Papua New Guinea Philippines Saudi Arabia Seychelles Somalia Sri Lanka Sudan United Arab Emirates Vanuatu		
<b>23d</b>	Bahrain Eritrea Indonesia Jordan Kenya Malaysia Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sri Lanka Sudan United Arab Emirates Vanuatu	40%	Moderate Uptake
<b>23e</b>	Egypt Eritrea India Indonesia Kenya Madagascar Myanmar Palau Papua New Guinea Saudi Arabia Somalia Sudan Tanzania Vanuatu	44%	Moderate Uptake
<b>23f</b>	Bahrain Egypt India Indonesia Kenya Madagascar Malaysia Myanmar Palau Papua New Guinea Somalia Sri Lanka Sudan United Arab Emirates	44%	Moderate Uptake
<b>24</b>	Palau Somalia	87%	Very Good Uptake

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Sudan

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**APPENDIX 6: PERFORMANCE IN NATIONAL REPORT FOR SECTION 5 – DUGONG CONSERVATION**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Performance Score</b>
<b>26a</b>	Bahrain Egypt Indonesia Jordan Kenya Papua New Guinea Somalia Sudan and	64%	Good Uptake
<b>26b</b>	Australia Bahrain Egypt Eritrea India Jordan Kenya Madagascar Malaysia Mozambique Palau Philippines Saudi Arabia Somalia Sri Lanka Sudan and	32%	Limited Uptake
<b>26c</b>	Bahrain Egypt Eritrea India Indonesia Kenya Madagascar Malaysia Mozambique Palau Papua New Guinea Philippines Saudi Arabia Seychelles Somalia Sri Lanka Sudan Tanzania Thailand United Arab Emirates atu	16%	Very Limited Uptake
<b>26d</b>	Australia iin	24%	Limited Uptake

	Egypt India Indonesia Jordan Kenya Malaysia Mozambique Myanmar Palau Papua New Guinea Philippines Seychelles Somalia Sri Lanka Sudan Thailand Vanuatu		
<b>26e</b>	Bahrain Indonesia Kenya Malaysia Myanmar Philippines Seychelles Somalia Sri Lanka Sudan Vanuatu	56%	Moderate Uptake
<b>26f</b>	Bahrain Egypt Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Philippines Saudi Arabia Solomon Islands Somalia Sri Lanka Sudan Vanuatu	28%	Limited Uptake
<b>26g</b>	Australia Bahrain Eritrea Jordan Kenya Myanmar Palau Philippines	48%	Moderate Uptake

	Saudi Arabia Somalia Sri Lanka Sudan Thailand		
<b>26h</b>	Eritrea India Kenya Madagascar Palau Somalia Sudan Vanuatu	68%	Good Uptake
<b>26i</b>	Egypt Jordan Kenya Mozambique Myanmar Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sri Lanka Sudan Vanuatu	48%	Moderate Uptake
<b>26j</b>	Egypt Kenya Somalia Sudan	84%	Very Good Uptake
<b>26k</b>	Australia Bahrain Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sri Lanka Sudan Thailand United Arab Emirates Vanuatu	20%	Limited Uptake

**APPENDIX 7: PERFORMANCE IN NATIONAL REPORT FOR SECTION 6 – CO-OPERATION**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Performance Score</b>
<b>28a</b>	Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Philippines Solomon Islands Sri Lanka Sudan Vanuatu	44%	Moderate Uptake
<b>28b</b>	Kenya Madagascar Papua New Guinea Saudi Arabia Seychelles Somalia Sudan Vanuatu	68%	Good Uptake
<b>28c</b>	Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Papua New Guinea Somalia Sudan Tanzania Vanuatu	44%	Moderate Uptake
<b>28d</b>	Bahrain Egypt Eritrea Indonesia Jordan Kenya Madagascar Malaysia Palau Papua New Guinea Saudi Arabia Seychelles Somalia	28%	Limited Uptake

	Sri Lanka Sudan Tanzania United Arab Emirates Vanuatu		
<b>30a</b>	Australia Bahrain Egypt Indonesia Jordan Kenya Malaysia Mozambique Myanmar Palau Papua New Guinea Saudi Arabia Solomon Islands Somalia Sri Lanka Sudan Thailand Vanuatu	28%	Limited Uptake
<b>30b</b>	India Jordan Kenya Madagascar Malaysia Palau Seychelles Somalia Sudan Vanuatu	60%	Good Uptake
<b>31a</b>	Bahrain Egypt Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Somalia Sri Lanka Sudan United Arab Emirates Vanuatu	44%	Moderate Uptake
<b>31b</b>	Australia Egypt Indonesia Kenya Madagascar Malaysia Myanmar	36%	Limited Uptake

	Palau		
	Papua New Guinea		
	Saudi Arabia		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Thailand		
	Vanuatu		
<b>31c</b>	Australia	4%	Very Limited Uptake
	Bahrain		
	Egypt		
	Eritrea		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Papua New Guinea		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		
<b>31d</b>	Australia	16%	Very Limited Uptake
	Bahrain		
	Egypt		
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Myanmar		
	Palau		
	Papua New Guinea		
	Seychelles		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		

<b>31e</b>	Bahrain Egypt India Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Saudi Arabia Seychelles Somalia Sri Lanka Sudan Thailand United Arab Emirates Vanuatu	28%	Limited Uptake
<b>31f</b>	Australia Bahrain Egypt India Indonesia Kenya Madagascar Mozambique Myanmar Palau Saudi Arabia Seychelles Somalia Sudan Vanuatu	40%	Moderate Uptake
<b>31g</b>	Australia Bahrain Egypt Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Mozambique Palau Papua New Guinea Philippines Saudi Arabia Seychelles Solomon Islands Somalia Sri Lanka Sudan Thailand	8%	Very Limited Uptake

	United Arab Emirates		
	Vanuatu		
<b>31h</b>	Australia	12%	Very Limited Uptake
	Egypt		
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		
<b>31i</b>	Australia	16%	Very Limited Uptake
	Egypt		
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
<b>31j</b>	Australia	36%	Limited Uptake
	Eritrea		
	Indonesia		
	Kenya		
	Madagascar		
	Malaysia		
	Palau		
	Philippines		
	Saudi Arabia		

	Seychelles		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	United Arab Emirates		
	Vanuatu		
<b>31k</b>	Australia	36%	Limited Uptake
	Bahrain		
	Eritrea		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Myanmar		
	Palau		
	Saudi Arabia		
	Seychelles		
	Somalia		
	Sudan		
	Thailand		
	United Arab Emirates		
	Vanuatu		
<b>31l</b>	Australia	28%	Limited Uptake
	Bahrain		
	Egypt		
	India		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Somalia		
	Sri Lanka		
	Sudan		
	United Arab Emirates		
	Vanuatu		
<b>31m</b>	Bahrain	32%	Limited Uptake
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Palau		
	Papua New Guinea		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		

	Sudan Thailand United Arab Emirates Vanuatu		
<b>32a</b>	Egypt India Kenya Madagascar Malaysia Palau Saudi Arabia Somalia Sudan Tanzania United Arab Emirates Vanuatu	52%	Moderate Uptake
<b>32b</b>	Eritrea Jordan Kenya Madagascar Myanmar Palau Saudi Arabia Somalia Sudan United Arab Emirates	60%	Good Uptake
<b>32c</b>	Egypt Eritrea India Jordan Kenya Madagascar Palau Somalia Sudan United Arab Emirates	60%	Good Uptake
<b>32d</b>	Kenya Madagascar Palau Somalia Sri Lanka Sudan United Arab Emirates	72%	Good Uptake
<b>34a</b>	Australia Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Palau Saudi Arabia Solomon Islands	36%	Limited Uptake

	Somalia Sri Lanka Sudan Tanzania Vanuatu		
<b>34b</b>	Australia India Indonesia Kenya Madagascar Malaysia Myanmar Palau Philippines Saudi Arabia Somalia Sri Lanka Sudan Tanzania Vanuatu	40%	Midrate Uptake
<b>34c</b>	Australia Eritrea India Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Philippines Saudi Arabia Seychelles Somalia Sri Lanka Sudan Vanuatu	32%	Limited Uptake
<b>34d</b>	Australia Egypt India Indonesia Jordan Kenya Madagascar Malaysia Myanmar Palau Saudi Arabia Seychelles Solomon Islands Somalia Sudan Tanzania Vanuatu	32%	Limited Uptake

<b>34e</b>	Australia Bahrain Egypt Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Seychelles Solomon Islands Somalia Sudan Thailand Vanuatu	28%	Limited Uptake
<b>34f</b>	Australia Bahrain Indonesia Kenya Madagascar Malaysia Palau Seychelles Somalia Sudan Vanuatu	56%	Moderate Uptake
<b>35a</b>	Kenya Madagascar Palau Somalia Sudan Vanuatu	76%	Good Uptake
<b>35b</b>	Bahrain Eritrea Jordan Kenya Palau Papua New Guinea Saudi Arabia Seychelles Somalia Sudan Vanuatu	56%	Moderate Uptake
<b>35c</b>	Eritrea Kenya Madagascar Palau Somalia Vanuatu	80%	Good Uptake
<b>35d</b>	Bahrain India	40%	Moderate Uptake

	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Myanmar		
	Palau		
	Saudi Arabia		
	Seychelles		
	Somalia		
	Thailand		
	United Arab Emirates		
	Vanuatu		
<b>35e</b>	Bahrain	40%	Moderate Uptake
	Egypt		
	Eritrea		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Myanmar		
	Palau		
	Saudi Arabia		
	Somalia		
	Sudan		
	Tanzania		
	Vanuatu		
<b>35f</b>	Bahrain	48%	Moderate Uptake
	Egypt		
	India		
	Jordan		
	Kenya		
	Myanmar		
	Palau		
	Papua New Guinea		
	Saudi Arabia		
	Seychelles		
	Somalia		
	Sri Lanka		
	Vanuatu		
<b>35g</b>	Bahrain	28%	Limited Uptake
	India		
	Indonesia		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		

	Sri Lanka		
	Sudan		
	Tanzania		
	United Arab Emirates		
	Vanuatu		
<b>35h</b>	Bahrain	36%	Limited Uptake
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Mozambique		
	Palau		
	Saudi Arabia		
	Solomon Islands		
	Somalia		
	Sri Lanka		
	Sudan		
	Thailand		
	<u>nuatu</u>		

**APPENDIX 8: PERFORMANCE IN NATIONAL REPORT FOR SECTION 7 – IMPLEMENTATION OF THE MOU**

(For details of each question see Appendix 1)

<b>Question</b>	<b>Countries that did not meet the initiative</b>	<b>Percentage of reporting countries that met the initiative</b>	<b>Performance Score</b>
<b>36a</b>	Australia Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Palau Somalia Sri Lanka Sudan Tanzania Thailand Vanuatu	40%	Moderate Uptake
<b>36b</b>	Australia Bahrain Eritrea Indonesia Jordan Kenya Madagascar Malaysia Mozambique Myanmar Palau Saudi Arabia Seychelles Solomon Islands Somalia Sudan Tanzania Thailand United Arab Emirates Vanuatu	20%	Limited Uptake
<b>38a</b>	Bahrain Indonesia Jordan Madagascar Mozambique Palau Somalia Sri Lanka Sudan Thailand Vanuatu	56%	Moderate Uptake
<b>38b</b>	Australia Bahrain Egypt	44%	Moderate Uptake

	Jordan		
	Madagascar		
	Mozambique		
	Myanmar		
	Palau		
	Papua New Guinea		
	Saudi Arabia		
	Somalia		
	Sudan		
	Thailand		
	United Arab Emirates		
<b>38c</b>	Egypt	32%	Limited Uptake
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Palau		
	Saudi Arabia		
	Seychelles		
	Solomon Islands		
	Somalia		
	Sudan		
	Thailand		
	Vanuatu		
<b>38d</b>	Australia	12%	Very Limited Uptake
	Bahrain		
	Eritrea		
	India		
	Indonesia		
	Jordan		
	Kenya		
	Madagascar		
	Malaysia		
	Mozambique		
	Myanmar		
	Palau		
	Philippines		
	Saudi Arabia		
	Seychelles		
	Somalia		
	Sri Lanka		
	Sudan		
	Tanzania		
	Thailand		
	United Arab Emirates		
	Vanuatu		