



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

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8<sup>TH</sup> MEETING OF THE SIGNATORY STATES

Da Nang, Viet Nam, 21-25 October 2019

Agenda Item 7.1

**ANALYSIS OF NATIONAL REPORTS**

*(Prepared by the Secretariat)*

Action Requested:

- Review the document and consider reflecting its content, as necessary, in the draft IOSEA Work Programme, as well as in further development of the IOSEA Technical Support and Capacity-building Programme

## ANALYSIS OF NATIONAL REPORTS

### Introduction

1. The present document provides an overview of all National Reports submitted by Signatories to the Secretariat by 16 September 2019. By that date, the Secretariat had received 20 National Reports from Signatory States submitted through the Online Reporting System. Reports submitted later are being made available as information documents but could not be taken into account in this analysis due to time constraints.
2. The heterogeneity of reports and the fact that the level of detail varied significantly across the reports received made it challenging to analyse the results. The Secretariat has therefore based its analysis on information categories that were included in most reports. We did not apply the scoring system previously utilized by the IOSEA Secretariat, as our purpose was to provide an overview of the activities undertaken and identify successes, gaps and priorities for action, rather than score the quality of the answers.
3. Together with National Reports, the Secretariat has received feedback from Signatory States on how the questionnaire could be improved. Possibilities to modify the national reporting questionnaire can be discussed by the Meeting of Signatories under Agenda Item 7.1. In addition, the Secretariat would be grateful for feedback on what kind of analysis or synthesis of the National Reports the Signatories will find most useful for future meetings.
4. The present overview is split into six main sections, according to the Objectives of the IOSEA Conservation and Management Plan (CMP):
  - Objective I: Reduce direct and indirect causes of marine turtle mortality
  - Objective II: Protect, conserve and rehabilitate marine turtle habitats
  - Objective III: Improve understanding of marine turtle ecology and populations through research, monitoring and information exchange.
  - Objective IV: Increase public awareness of the threats to marine turtles and their habitats, and enhance public participation in conservation activities
  - Objective V: Enhance national, regional and international cooperation
  - Objective VI: Promote implementation of the MOU, including the CMP
5. The Secretariat identified the following priorities, as reported by Signatory States (see Sections 5.2.2 and 5.2.3 for details). The main priority topics according to frequency of them being mentioned by Signatories included: “education and information programmes”, “reduction of incidental capture”, “habitat protection” and other topics, which addressed a total of twelve of the Programmes of the Conservation and Management Plan. Activities corresponding to the priority Programmes are marked as high priority in the draft Work Programme (Doc. 8.2). In addition, Signatory States indicated their capacity-building needs (see Section 5.4.1), which can be addressed through the IOSEA Technical Support and Capacity-building Programme or other mechanisms.
6. Furthermore, the Secretariat provided an overview of the efforts undertaken by Signatory States to implement the CMP and challenges that remain to be addressed. The following paragraphs summarize the main findings by CMP Objective.
7. Objective I *Reducing Causes of Mortality*: In terms of reducing direct and indirect causes of marine turtle mortality, most countries reported imposing restrictions on fishing effort.

More than half of the countries were additionally using bycatch reduction techniques (such as turtle excluder devices (TEDs) and other gear modification). All of the Signatories also reported either planning to implement or already implementing nesting beach management programmes to reduce mortality of hatchlings.

8. Objective II *Protecting Habitat*: Habitat protection has advanced in several countries, as new protected areas were established, or existing ones extended to include a greater portion of marine turtle habitat. However, some respondents also noted with concern the illegal activities within protected areas, such as poaching and unauthorized tourism development. Almost all countries reported routinely undertaking environmental impact assessments for any developments in marine turtle habitat. Three quarters of the respondents reported undertaking activities to restore turtle habitats, such as mangroves, coral reefs and seagrasses. However, only a few countries introduced policies or activities to reduce the amount of plastic waste in marine turtle habitat.
9. Objective III *Research and Monitoring*: Long-term monitoring programmes (of at least 10 years' duration) were undertaken by almost all Signatories. Various research activities were performed in all but one country. The most frequently reported types of research were identifying migration routes and characterizing genetic identity of marine turtle populations. All but two Signatories reported using research results to improve management and three quarters of the respondents reported evaluating research activities regularly. Although the information provided was rather general, three main gaps in terms of scientific studies could be identified as follows:
  - very limited or no data on population trends in most countries;
  - very limited or occasional exchange of information on populations of regional importance between countries
  - only 12 countries are promoting the use of traditional knowledge in research
10. Objective IV *Public Awareness and Participation*: Most countries reported conducting awareness campaigns to address threats to marine turtle populations, using printed materials, community centres, as well as radio, internet videos and television. Only a few Signatories reported conducting activities with children and schools. In terms of stakeholder involvement, three quarters of the Signatories reported having already undertaken or planning initiatives to involve local communities in conservation, ranging from information campaigns to income-generating activities. The latter included employment in conservation and patrolling, low interest loans for alternative livelihoods and other financial incentives, as well as direct involvement in decision-making. Not all countries reported making efforts to include multiple stakeholders in conservation activities, such as non-governmental organizations (NGOs) and the private sector.
11. Objective V *Enhanced Cooperation*: Signatory States identified the most important issues for international cooperation, which included:
  - conducting research (genetic identity, habitat, migration routes)
  - law enforcement (in relation to incidental capture and illegal fishing by foreign fleets)
  - capacity-building and
  - reduction of mortality through gear technology and control of illegal trade (inter alia, via alternative livelihoods)
12. Signatory States listed 18 different platforms for international cooperation, including IOSEA Marine Turtle MOU and the two associated marine turtle task forces (MTTF) in the Western Indian Ocean (WIO) and Northern Indian Ocean (NIO). Despite these platforms being available and international cooperation being essential for conducting

research activities, as stated by Signatories, there is no regular information exchange on populations of regional importance between most reporting countries. Nevertheless, conferences, meetings and workshops were seen by the Signatories as the most important occasion to share information internationally. Another challenge experienced by the majority of Signatories is poor inter-agency cooperation and collaboration within countries. This was, *inter alia*, due to the low priority given to such issues and lack of understanding of turtle conservation issues among decision-makers.

13. Objective VI *Promote IOSEA Marine Turtle MOU and CMP Implementation*: The Signatories attempted to address the challenge of inter-agency cooperation and coordination by:
  - designating a head agency responsible for marine turtle issues,
  - clearly defining agency roles and responsibilities,
  - having recently conducted a review of the latter.
14. Nine countries reported reaching out to potential Signatories to encourage them to join the IOSEA Marine Turtle MOU to encourage cooperation in conserving marine turtles.
15. In conclusion, substantial progress has been made by individual countries in: enhancing habitat protection, involving local communities and conducting research. However, exchange of information, as well as strengthening inter-agency and international cooperation and coordination remains a major challenge. In particular, bycatch, illegal fishing and illegal trade and unregulated development in turtle habitat remain challenges requiring enhanced inter-agency or international cooperation to be properly addressed.

## **OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY**

### **1.1 Introduction to marine turtle populations and habitats, challenges and conservation efforts**

16. All 20 respondents provided information with varying levels of detail on their marine turtle populations and habitats. Some countries differentiated populations by occasional and regular observations and indicated the geographic areas for nesting and foraging. This question is intended to provide the reader with an overview of each Signatory's marine turtle populations, associated habitats and status trends; as well as to highlight the country's main challenges and achievements in marine turtle conservation, drawing attention to particular issues of concern. Please refer to the individual National Reports for details.

### **1.2 Best practice approaches to minimizing threats to marine turtles and their habitats**

17. All but one respondent answered this question, but the responses varied greatly in terms of the level of detail provided. Most frequently mentioned types of practices and some examples of activities reported by the Signatories are provided below. In general, Signatories did not discuss the effectiveness of measures conducted and lessons learned, which would have been useful, particularly if other countries were to learn from these practices.

**Legislation and policy instruments**

18. All respondents mentioned the existence of legislation and/or policy instruments to enable marine turtle conservation, although these were not further described. Some examples of recent developments in national instruments are:

- [National Plan of Action for the Conservation of Marine Turtles in the UAE 2019 – 2021](#)
- [The Coastal and Marine Ecosystems Management Program of the Philippines 2017-2028](#)
- [Recovery Plan for Marine Turtles in Australia \(2017\)](#)

**Awareness raising**

19. Activities to raise awareness were the most frequently mentioned types of activities (mentioned by 13 respondents). Viet Nam, for example, reported having conducted hundreds of training courses, communication and awareness raising activities on marine turtle protection and conservation for fishermen and communities living in and around marine protected areas (MPAs). These activities were carried out by the government, NGOs or MPA staff. In addition, as a result of a recent project supported by TRAFFIC and the US Fish and Wildlife Service, posters and billboards were produced and displayed to raise awareness of the illegality of killing, eating, and trading marine turtle parts and products. School presentations and exhibitions on theme days such as Biodiversity Day, Ocean Day and Environment Day were held in the Seychelles. The Day of Marine Turtles has been regularly celebrated in Comoros since 1997. Many respondents did not describe the activities to raise awareness in detail in this Section. Please also see Section 4.1 for this topic.

**Local community involvement**

20. Activities to involve local communities were mentioned by 12 respondents. These included income-generating activities, such as ecotourism, employment of local people in research and other financial incentives (please also see Section 4.2 Alternative Livelihoods). South Africa reported employing and training locals to conduct turtle monitoring. India provided an example of financial rewards for communities involved in nesting beach protection. In addition, the India Wildlife Institute recommended establishing a “Marine Turtle Scholarship” programme for fishermen’s children to encourage fishermen’s interest in marine turtle conservation. In Comoros, Kenya and the United Republic of Tanzania co-management of marine turtle habitats with the involvement of local communities is practised. In the Philippines, community members can be deputized as Bantay Dagat, or Guardians of the Sea, which enables them to implement enforcement activities. Programmes also exist in the Philippines to provide training to local stakeholders on hatchery management.

**Protected Areas**

21. Establishment of protected areas, extension of protected areas or positive changes in their management were reported by ten countries. For example, Seychelles has committed up to 30 per cent of the Exclusive Economic Zone (EEZ) including 15 per cent in “no-take” areas, through its Marine Spatial Planning. In comparison, in 2014 less than one per cent of the Seychelles’ EEZ was protected. South Africa declared 20 additional Marine Protected Areas (MPAs) as part of its MPA network that will benefit all life stages of marine turtles as well as various in-shore and offshore ecosystems. The declaration of these MPAs will take effect on 1 August 2019. Viet Nam also reported being in the process of extending its MPAs by 2020.

**Fisheries Interactions**

22. Best practices in relation to changing fishing methods and fishing gear were named by nine respondents. Most of the respondents indicated the use of TEDs in specific types of fisheries and/or areas with variable success, some also reported using circular hooks and restricting fishing activities. Kenya also reported having evaluated the effectiveness of TEDs and pointed out that modification of the design was needed to fit local conditions. Several respondents mentioned that stronger management of human impact in coastal areas, such as from shipping activities and mechanised fishing was needed to reduce the negative impact on marine turtles.

**Marine debris**

23. The Seychelles reported introducing restrictions on manufacturing, import and distribution of plastic bags in 2017. The Seychelles additionally reported introducing a ban on plastic straws, except those attached to a juice box. Outreach activities to reduce plastic use were reported by Viet Nam, while the Seychelles and two other Signatories mentioned exemplary practices to remove debris from marine turtle habitats. In Australia, a marine debris monitoring programme in the Northern Territory was initiated by an NGO and is now run by ranger groups and supported by the Government, in response to the concerns of coastal Indigenous communities, land councils, government agencies, conservation organisations and the fishing industry.

**Other practices**

24. The existence of facilities to rehabilitate stranded or injured turtles was mentioned by four countries: the United Arab Emirates, South Africa, Australia and Jordan. Predator control measures were described by India and Australia. Some interesting practices were mentioned only by one respondent. For example, only the USA reported addressing the light pollution problem as an exemplary approach. The USA has recently reviewed the conservation status of the Green Turtle and is in the process of completing the review for Leatherbacks in order to identify necessary research and conservation action. The Maldives mentioned the first case of a penalty being imposed on an individual for an offence relating to marine turtles, since legislation was adopted in 2016. The Seychelles reported establishing a “green line” whereby environmental crime can be reported by citizen directly to the Ministry of Environment.

**1.3 Programmes to correct adverse economic incentives**

25. When asked about the adverse economic incentives underlying threats to marine turtles in their countries, the respondents chose the following options:
- High prices earned from turtle products relative to other commodities (6 Signatories)
  - Lack of affordable alternatives to turtle products (3 Signatories),
  - Ease of access to the turtle resource (11 Signatories),
  - Low cost of land near nesting beaches (3 Signatories),
  - Low penalties against illegal harvesting (6 Signatories).
26. Seventeen Signatories answered “others”, which means that at least part of their answer did not match any of the options indicated above. Other adverse incentives were:
- Profitability of aquaculture (shrimp ponds) on sandy beaches,
  - Illegal or uncontrolled tourism development in or near protected areas and
  - Industrial development due to the low cost of land in turtle habitat.

27. Further factors driving the threats were reported: organized networks which illegally trade marine turtle products, extreme poverty in coastal areas, and the increase in coastal fishing effort.
28. Among programmes to correct adverse economic incentives the following were mentioned:
- awareness campaigns
  - financial support for artisanal fisheries, low interest rate loans for shifting from fishing to aquaculture and other alternative livelihoods
  - capacity-building and human resource development
  - empowerment of local communities
  - raising of penalties
  - strengthening enforcement, e.g. through additional patrolling, installing wildlife cameras on key beaches

#### 1.4 Reduction of incidental capture and mortality

29. The answers in this section were very variable and some lacked sufficient detail to be fully included in this analysis. Seven respondents did not know the impact on marine turtles of any type of fishery practiced in their country. Thirteen countries indicated that at least one type of fishery practiced by the country had a high or a moderate perceived impact on marine turtles.
30. Table 3 shows that the most frequently reported fishery types were longlines, set gill nets, purse seine and shrimp trawl. The fisheries with the highest impact, ranked according to how many times they were indicated to have a high or moderate perceived impact were longlines, set gillnets and shrimp trawls (Table 3). Fisheries with a low level of impact were those with low fishing effort in the countries responding.

Table 3: Main fisheries reported to be practiced by Signatory States

Fishery	Number of countries practising this type of fishery	Countries with a Relatively High and Moderate Perceived Impact on Marine Turtles
Longline (shallow or deep-set)	18	Philippines, USA, Maldives, South Africa, Viet Nam, Kenya ( <b>6 countries</b> )
Set gill nets	15	Philippines, Kenya, United Republic of Tanzania, India, Pakistan, Viet Nam, USA ( <b>7 countries</b> )
Shrimp trawls	11	India, USA, Pakistan, Philippines, Viet Nam, Kenya, Mozambique ( <b>7 countries</b> )
Purse seine (with or without Fish Aggregating Devices (FADs))	12	-
Others	11	Philippines, Tanzania, UAE, Kenya ( <b>3 countries</b> )
Anchored FADs	10	Comoros, Seychelles ( <b>2 countries</b> )
Driftnets	7	Comoros, USA ( <b>2 countries</b> )

31. The Signatories were asked to indicate which techniques were used to minimize incidental capture and mortality. Most countries practised spatial and temporal restrictions to control fishing effort and reduce bycatch (17 countries). Appropriate handling of incidentally caught turtles and the use of TEDs were the most frequently reported measures to reduce mortality of turtles due to incidental capture (16 and 12 countries, respectively). The following options were chosen by Signatories in answering this question (number of positive answers indicated next to each option):
- Appropriate handling of incidentally caught turtles (16 countries)
  - Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness) (12 countries)
  - Measures to avoid encirclement of marine turtles in purse seine (4 countries)
  - Appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices (10 countries)
  - Monitoring and recovery of fish aggregating devices (6 countries)
  - Net retention and recycling schemes (4 countries)
  - Spatial and temporal control of fishing (17 countries)
  - Effort management control (15 countries)

### 1.5 Addressing harvest of, and trade in, marine turtles; and protecting of habitat

32. All 20 respondents reported that their countries had legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products; and to protect important turtle habitats.
33. As shown in Table 4, in terms of economic and cultural uses of marine turtles, eco-tourism was the most popular. Seventeen signatories reported having eco-tourism programmes and 7 of the countries rated this activity with a high prevalence. Cultural and traditional significance was ranked as second most important value of the turtles. The use of turtles for meat consumption was also widespread and important. Fourteen out of 20 countries practice turtle meat consumption, 4 countries with a high prevalence. The least important type of use of marine turtles was fat consumption, as 15 respondents out of 20 reported no fat consumption being practiced in their countries.

Table 4: Economic uses and cultural values

Economic and cultural uses	Number of countries	Countries with a Relatively <u>High</u> prevalence / importance
Eco-tourism programmes	17	Myanmar, Comoros, Maldives, Oman, Philippines, Seychelles, South Africa <b>(7 countries)</b>
Egg consumption	16	-
Cultural / traditional significance	15	Australia, Maldives, Seychelles, Vietnam <b>(4 countries)</b>
Meat consumption	14	Comoros, Kenya, Madagascar, United Republic of Tanzania <b>(4 countries)</b>
Traditional medicine	12	-
Shell products	10	Philippines <b>(1 country)</b>
Fat consumption	5	-



## 1.6 Minimizing mortality through nesting beach programmes

34. Table 5 shows that all 20 Signatories engage in education and awareness programmes in order to minimize the mortality of eggs, hatchlings and nesting females. All but one also implement monitoring/protection programmes. In terms of effectiveness, the majority found monitoring/protection programmes and education and awareness programmes useful, estimated by the number of times each measure was ranked as having a “good” or “relatively high” effectiveness. Seventeen countries reported conducting activities to remove debris and clean up the beaches, with only ten countries reporting this measure to have a good or excellent effectiveness. Predator control and light pollution reduction activities were considered least effective out of all measures, being mentioned most frequently as measures with a “low” effectiveness.

*Table 5: Measures in place to minimize mortality through nesting beach programmes and their effectiveness, according to the National Reports.*

<b>Measure</b>	<b>Number of countries</b>	<b>Number of countries ranking the effectiveness as “good” or “excellent”</b>	<b>Number of countries ranking the effectiveness as “low”</b>
Education/awareness programmes	20	15	1
Monitoring/protection programme	19	16	0
Removal of debris / clean-up	17	10	4
Light pollution reduction	14	9	5
Building location/design regulations	14	10	2
Vehicle/access restriction	14	10	3
Predator control	13	7	5
Egg relocation/hatcheries	13	11	0
Re-vegetation of frontal dunes	8	4	2
Other	2	-	-

## **OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS**

### **2.1 Measures to protect and conserve marine turtle habitats**

35. When asked what has been done to protect critical habitats outside of established protected areas, all Signatories mentioned at least two measures. Ranked first, seven Signatories answered that their countries had patrolling mechanisms in place. Ranked second place with six answers each were identification of critical sites for marine turtles and awareness programmes to target protection of marine turtles outside of protected areas. The Maldives reported regulations for the conservation and management of tourist resorts. As a result, most of the resorts had conservation programmes focused on marine turtles and had marine biologists among their staff.
36. In terms of environmental impact assessment, 17 Signatories indicated that their country routinely assessed the environmental impact of marine and coastal development on marine turtles and their habitats. Fifteen Signatories monitored marine water quality (including marine debris) near turtle habitats.
37. When asked about regulations to stop the use of poisonous chemicals and explosives for fishing, all 20 respondents answered that their countries had measures in place to prohibit these activities.

### **2.2 Rehabilitation of degraded marine turtle habitats**

38. As shown in Table 6, 15 respondents mentioned making efforts to recover degraded mangrove habitats that are important for turtles mainly through replanting initiatives. Many also engage in efforts to recover degraded coral reefs, e.g. through periodic monitoring programmes and restoration projects, and to recover degraded seagrass habitats.

*Table 6: Rehabilitation of degraded marine turtle habitats*

<b>Measure</b>	<b>Number of countries</b>
Efforts to recover degraded mangrove habitats	15
Efforts to recover degraded coral reefs	14
Efforts to recover degraded sea grass habitats	12

## **OBJECTIVE III: IMPROVE UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS THROUGH RESEARCH, MONITORING AND INFORMATION EXCHANGE**

### **3.1 Studies on marine turtles and their habitats**

39. Long-term monitoring programmes (of at least 10 years' duration) were either planned or enacted in 17 out of 20 countries. Two respondents did not have such programmes and one reported being "unsure". Several monitoring programmes were carried out in partnership with local NGOs.
40. As shown in Table 7, in terms of the type of research conducted, the most common was tagging to identify migration routes, followed by characterization of genetic identity of populations and satellite tracking. Two respondents also reported using methods not mentioned in the questionnaire, such as Passive Integrated Transponder (PIT) tagging and notching of Loggerhead hatchlings. Studies on marine turtle population dynamics

and survival rates were carried out in 14 countries. Use of traditional knowledge in research was promoted in twelve countries, whereas studies of marine turtle diseases were conducted by half of the respondents. Research on population estimates and hatching rates was reported only by nine countries.

*Table 7: Types of research conducted by IOSEA Signatory States*

Type of research	Number of countries undertaking this type of activity
Tagging to identify migration routes	19
Characterization of genetic identity of marine turtle populations	16
Satellite tracking to identify migration routes	15
Marine turtle population dynamics and survival rates	14
Use of traditional knowledge in research	12
Frequency and pathology of diseases	10
Population estimates and hatching rates	9

### 3.3 Priority Species

41. Table 9 shows the priority species or populations per country, as well as any information given on population trends in each country. Fifteen countries listed the marine turtle species, and some also listed the populations, in need of conservation actions in their countries. Only two respondents provided information on the population trends of all the species occurring in their waters. Many respondents indicated that the population trends were unknown due to a lack of adequate monitoring (e.g. no long-term data, no ongoing monitoring efforts, limited extent of relevant research).

*Table 9: Species or populations in need of conservation actions as indicated by each Signatory State*

Signatory State	Priority populations or species
Australia	<ul style="list-style-type: none"> <li>- Green Turtle</li> <li>- Loggerhead Turtle</li> <li>- Flatback Turtle, Hawksbill Turtle</li> <li>- Olive Ridley Turtle</li> <li>- Leatherback Turtle</li> </ul> (no information provided on population trends)
Comoros	<ul style="list-style-type: none"> <li>- Green Turtle (no population trends reported)</li> <li>- Hawksbill Turtle (never monitored in Comoros)</li> </ul>
India	<ul style="list-style-type: none"> <li>- Hawksbill Turtle</li> <li>- Olive Ridley Turtle</li> <li>- Leatherback Turtle</li> <li>- Green Turtle</li> </ul> (population status unknown)
Kenya	<ul style="list-style-type: none"> <li>- Green Turtle</li> <li>- Loggerhead Turtle</li> <li>- Hawksbill Turtle</li> <li>- Olive Ridley Turtle</li> </ul>

<b>Signatory State</b>	<b>Priority populations or species</b>
	- Leatherback Turtle (population trends probably declining for all species, based on local community interviews)
Maldives	- Olive Ridley Turtle (trend unknown) - Green Turtle (declining population trend) - Hawksbill Turtle (trend unknown)
Mozambique	- Olive Ridley Turtle (little information available) - Loggerhead Turtle (trends unclear from the report) - Hawksbill Turtle (trend unknown)
Myanmar	Populations of all marine turtles in decline
Oman	- Loggerhead Turtle (trend unknown) - Hawksbill Turtle (trend unknown) - Olive Ridley Turtle (trend unknown) - Leatherback Turtle (trend unknown)
Philippines	- Green Turtle (increasing population trend) - Olive Ridley Turtle (trend unknown) - Hawksbill Turtle (trend unknown) - Leatherback Turtle (trend unknown)
Seychelles	- Green Turtle (nesting activity increasing, except in three main islands, where most people reside) - Hawksbill Turtle (nesting activity increasing, except in three main islands)
South Africa	- Leatherback Turtle (stable population trend) - Loggerhead Turtle (increasing population trend)
United Kingdom	- Green Turtle (trend unknown) - Hawksbill Turtle (trend unknown) - Leatherback Turtle (trend unknown) - Loggerhead Turtle (trend unknown) - Olive Ridley Turtle (trend unknown)
United Republic of Tanzania	- Foraging greens (trend unknown) - Nesting hawksbills (trend unknown) - Nesting greens (trend unknown at most sites, but nesting population in Mafia showing upward trend) - Foraging loggerheads, Olive Ridleys and Leatherbacks (trend unknown)
Viet Nam	- Loggerhead Turtle (trend unknown) - Leatherback Turtle (declining population) - Olive Ridley Turtle (trend unknown) - Hawksbill Turtle (trend unknown) - Green Turtle (trend unknown)
Yemen	- Green Turtle - Loggerhead Turtle - Flatback Turtle - Hawksbill Turtle - Olive Ridley Turtle - Leatherback Turtle (no information provided on population trends)

### 3.3.2 Evaluation of the efficacy of research activities

42. Fifteen respondents reported periodically reviewing research and monitoring activities and evaluating them for their efficacy. Most respondents evaluated the effectiveness of research activities annually.

### 3.3.3. Use of scientific findings in management

43. All but two signatories strive to use the results of the aforementioned research (Section 3.2) to improve management. Generally, results from research were reported to be used to compile information and address threats to marine turtle populations and to improve conservation measures.

### 3.4 Information exchange

44. Sixteen respondents reported regularly compiling data on marine turtle populations of regional interest, with four reporting being “unsure”. However, the exchange of scientific and technical information and expertise with other Range States was conducted regularly only by one country, while the other respondents only indicated exchanging information with other countries occasionally (15 respondents) or rarely (4 respondents). The main means of communication indicated were conferences, meetings and workshops.

## OBJECTIVE IV: INCREASE PUBLIC AWARENESS OF THE THREATS TO MARINE TURTLES AND THEIR HABITATS, AND ENHANCE PUBLIC PARTICIPATION IN CONSERVATION ACTIVITIES

### 4.1 Public education and information programmes

45. As shown in Table 10, when asked to describe the activities conducted to raise awareness, most countries indicated a variety of different types of activities. Most countries utilized traditional means of communication. Producing and disseminating printed materials was one of the most frequently mentioned activities together with running community learning centres. Video (including those posted on the internet), radio and television were the second most frequently used means of communication.
46. Less popular were awareness days, activities with children and talks. Six countries mentioned celebrating a specific day to raise awareness on marine turtles. Only five countries conducted activities with children and schools. The least frequently mentioned type of activity was holding talks and presentations (3 countries).

Table 10: Means of communication used to raise awareness

Type of activity carried out	Number of countries undertaking this activity
Disseminating leaflets, posters, and other printed informational material	13
Community learning centres	13
Producing radio and television programmes and videos for the internet	11
National awareness days	6
Disseminating information through websites	5
Activities for children and schools	5
Presentations and talks	3

## **4.2 Alternative livelihood opportunities**

47. Thirteen respondents reported having undertaken or planning to start initiatives to identify and facilitate alternative livelihoods (including income-generating activities) for local communities, four did not, and three reported this question was not applicable to their country's situation. The initiatives carried out include training of fishermen and other local actors, as well as providing them with financial compensation.

## **4.3 Stakeholder participation**

48. Fifteen respondents reported having already undertaken or planned initiatives to involve local communities in conservation. The activities most commonly undertaken with community participation included awareness campaigns and education of citizen scientists (mentioned 13 times). The second most commonly mentioned type of activity was direct involvement of local communities in the management of the resource, e.g. through jobs in conservation, ecotourism and/or possibility to influence regulations (mentioned eight times). Three respondents mentioned undertaking coastal area clean-ups with the participation of local communities. Only two respondents answered that initiatives to involve local communities did not exist in their countries.
49. Fourteen countries described initiatives already undertaken or planned to involve and encourage the cooperation of government, private sector and NGOs. However, most countries developed measures to involve either the private sector or NGOs and not both. Some examples of activities where different types of stakeholders (government, NGOs and private sector) were involved included:
- Beach clean-up, reporting and retrieval of lost fishing gear to avoid ghost fishing (e.g. Monthly beach clean-ups by the Diego Garcia Yacht Club, UK; Dubai Voluntary Diving Team, UAE)
  - Co-management of biosphere reserves by government, NGOs and private sector (Baa Atoll Biosphere Reserve, Addu and Fuvahmulah Nature Park, Maldives)
  - Involvement of all relevant stakeholders at the stage of planning or creation of management approaches (South Africa, Kenya and the United Republic of Tanzania).

## **OBJECTIVE V: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION**

### **5.1.1 National review of compliance with Convention on International Trade in Endangered Species (CITES) obligations in relation to marine turtles**

50. Thirteen countries reported having undertaken a national review of their compliance with CITES obligations in relation to marine turtles, while three countries reported this was not applicable to them.

51. Eighteen countries reported having participated in CITES training programmes for relevant authorities, as well as participating in CITES COP meetings. They reported participating and organizing training events on:
- education courses on CITES and its appendices;
  - how to curb illegal wildlife trade;
  - the scientific aspects of CITES implementation and on the identification of CITES-listed species;
  - how to verify CITES permits and other relevant documentation;
  - how to educate customs officers at a national and regional (west Asia) level.
52. Fourteen countries have mechanisms in place to identify international illegal trade routes for marine turtle products. All the respondents reported protecting marine turtle species under relevant laws, which prohibit their domestic trade and international trade.

## **5.2 Prioritization, development and implementation of national action plans**

53. All but four respondents reported having developed a national action plan or a set of key management measures that could eventually serve as a basis for a more specific action plan at a national level, while 3 countries reported being in the process of developing a national action plan.

### **5.2.2 Conservation and management activities, and/or sites or locations which ought to be the highest priorities for action**

54. All respondents indicated priorities for action, however, only 5 countries named priority activities from the IOSEA Marine Turtle MOU CMP, as requested in the questionnaire, with some selecting programmes rather than individual activities. The answers were very heterogenous with a great variety of priorities and varying level of detail indicated. Therefore, we grouped the responses by CMP Programme which the indicated priority activities address.
55. Overall 20 out of 24 CMP Programmes were mentioned by the 20 respondents. As shown in Table 11, the top 4 priorities of the respondents in terms of marine turtle conservation were:
- i. public education and awareness;
  - ii. reduction of the incidental capture and mortality in fisheries;
  - iii. establishing habitat protection measures;
  - iv. to identifying and documenting threats to marine turtles.

*Table 11: Priorities of Signatory States in terms of the Programmes of the Conservation and Management Plan, according to the National Reports submitted in 2019 reporting period*

<b>CMP Programme</b>	<b>Number of countries</b>
4.1 Establish public education, awareness and information programmes	9
1.4 Reduce to the greatest extent practicable the incidental capture and mortality of marine turtles in the course of fishing activities	8
2.1 Establish necessary measures to protect and conserve marine turtle habitats	8
1.1 Identify and document the threats to marine turtle populations and their habitats	7
2.2 Rehabilitate degraded marine turtle habitats	5
3.1 Conduct studies on marine turtles and their habitats targeted to their conservation and management	5
4.3 Promote public participation	5
5.1 Collaborate with and assist signatory and non-signatory States to regulate and share information on trade, to combat illegal trade, and to cooperate in enforcement activities	5
5.5 Strengthen and improve enforcement of conservation legislation	5
6.3 Seek resources to support the implementation of the MOU	5
1.3 Implement programmes to correct adverse economic incentives that threaten marine turtle populations	4
5.4 Build capacity for conservation	4
1.6 Develop nesting beach management programmes	3
3.2 Conduct collaborative research and monitoring and exchange information (3.4)	3
1.5 Prohibit the direct harvest (capture or killing) of, and domestic trade in, marine turtles, their eggs, parts or products, whilst allowing exceptions for traditional harvest by communities	2
5.2 Assist signatory and non-signatory States, upon request, to develop and implement national, sub-regional and regional action plans	2
5.3 Enhance mechanisms for cooperation and promote information exchange	2
6.4 Improve coordination among government and non-government sectors	2
1.2 Determine and apply best practice approaches to minimising those threats to marine turtle populations and their habitats	1
4.2 Develop alternative livelihood opportunities	1



### 5.2.3 Issues that require international cooperation in order to achieve progress

56. When asked to indicate the level of importance of international cooperation to address a set of issues, as shown in Table 12, most respondents considered scientific studies (on migration routes, habitat and genetics) to be most important. Related issues of identifying marine turtle populations and satellite tracking were also frequently mentioned.
57. Training and capacity-building were also among the issues requiring international cooperation as indicated by 17 respondents. In addition, international cooperation was considered crucial for dealing with related issues of law enforcement in territorial waters, control of illegal fishing and incidental capture by foreign fleets. In contrast, only half of the respondents considered international cooperation important or essential for alternative livelihood development, this was the lowest ranking issue out of the available options.

*Table 12: The number of countries indicating that international cooperation was “essential” or “important” to address the following issues.*

<b>Issues</b>	<b>Number of countries</b>
Identification of migration routes	18
Habitat studies	18
Genetics studies	18
Training / capacity-building	17
Identification of turtle populations	17
Tagging / satellite tracking	16
Illegal fishing in territorial waters	15
Incidental capture by foreign fleets	15
Enforcement/patrolling of territorial waters	15
Development of gear technology	14
Oil spills, pollution, marine debris	14
Poaching, illegal trade in turtle products	13
Hunting/harvest by neighbouring countries	12
Alternative livelihood development	10

### 5.3.1 Mechanisms for cooperating in marine turtle conservation at the sub-regional level

58. The Signatory States listed 18 platforms and other mechanisms for sub-regional cooperation, including the IOSEA Marine Turtle MOU and its WIO and NIO MTTFs as shown in Table 13.

Table 13: Mechanisms for sub-regional cooperation mentioned by Signatories

<b>Mechanisms of sub-regional cooperation</b>	<b>Sub-region</b>	<b>URL</b>
FAO Code of Conduct for Responsible Fisheries	All sub-regions	<a href="http://www.fao.org/fishery/code/en">http://www.fao.org/fishery/code/en</a>
International Sea Turtle Society (ISTS) symposia	All sub-regions	<a href="https://internationalseaturtlesociety.org/">https://internationalseaturtlesociety.org/</a>
IOSEA Marine Turtle MOU and CMS	All sub-regions	<a href="https://www.cms.int/iosea-turtles/en">https://www.cms.int/iosea-turtles/en</a>
IOSEA Site Network	All sub-regions	<a href="https://www.cms.int/iosea-turtles/en/activities/site-network">https://www.cms.int/iosea-turtles/en/activities/site-network</a>
Northern Indian Ocean Marine Turtle Task Force (NIO MTTF)	NIO	<a href="https://www.cms.int/iosea-turtles/en/activities/nio-mttf">https://www.cms.int/iosea-turtles/en/activities/nio-mttf</a>
South Asia Co-operative Environment Programme (SACEP)	NIO	<a href="http://www.sacep.org/">http://www.sacep.org/</a>
South Asian Association for Regional Cooperation (SAARC)	NIO	<a href="http://www.saarc-sec.org/">http://www.saarc-sec.org/</a>
The Bay of Bengal Large Marine Ecosystem Project (BOBLME)	NIO, SEA+	<a href="https://www.boblme.org/">https://www.boblme.org/</a>
Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA)	NWIO	<a href="http://www.persga.org/">http://www.persga.org/</a>
Regional Organization for the Protection of the Marine Environment (ROPME)	NWIO	<a href="http://ropme.org">http://ropme.org</a>
Association of Southeast Asian Nations (ASEAN)	SEA+	<a href="https://asean.org/">https://asean.org/</a>
Coral Triangle Initiative, Ecoregion Conservation Plan	SEA+	<a href="http://www.coraltriangleinitiative.org/">http://www.coraltriangleinitiative.org/</a>
Secretariat of the Pacific Regional Environment Programme (SPREP) Regional Marine Turtle Action Plan 2018-2022	SEA+	<a href="https://www.sprep.org/">https://www.sprep.org/</a>
The Southeast Asian Fisheries Development Center (SEAFDEC)	SEA+	<a href="https://www.seafdec.org.ph/">https://www.seafdec.org.ph/</a>
The Sulu-Sulawesi Marine Ecoregion (SSME), Sulu-Sulawesi Seascape (SSS)	SEA+	<a href="http://intl.denr.gov.ph/index.php/asia-pacific-menu-2/article/5;">http://intl.denr.gov.ph/index.php/asia-pacific-menu-2/article/5;</a> <a href="https://www.giz.de/en/worldwide/18229.html">https://www.giz.de/en/worldwide/18229.html</a>
Torres Strait Treaty	SEA+	<a href="https://dfat.gov.au/geo/torres-strait/Pages/the-torres-strait-treaty.aspx">https://dfat.gov.au/geo/torres-strait/Pages/the-torres-strait-treaty.aspx</a>

Mechanisms of sub-regional cooperation	Sub-region	URL
Western Indian Ocean Marine Science Association (WIOMSA), Marine and Coastal Science for Management (MASMA) programme	WIO	<a href="https://www.wiomsa.org/">https://www.wiomsa.org/</a>
Western Indian Ocean Marine Turtle Task Force (WIO MTTF)	WIO	<a href="https://www.cms.int/iosea-turtles/en/activities/wio-mttf">https://www.cms.int/iosea-turtles/en/activities/wio-mttf</a>

## 5.4 Capacity Building

### 5.4.1 Capacity-building needs in terms of human resources, knowledge and facilities

59. Capacity-building needs of Signatory States were very variable. These ranged from general categories to very specific needs listed by a number of countries (Table 14). The three most frequently named types of needs were:
- i. improving knowledge of biological and ecological aspects of conservation, including genetics, other research and monitoring techniques;
  - ii. improving knowledge of conservation and management approaches and
  - iii. the need for equipment to conduct research, patrolling and monitoring activities.

Table 14. Capacity Building needs of Signatory States.

Capacity-building needs	Number of countries
Improving knowledge of biological and ecological aspects of conservation, including genetics, other research and monitoring techniques	10
Improving knowledge of conservation and management approaches, including management plan development	9
Equipment for research, monitoring, communication, transportation or patrolling	8
Conducting education and awareness campaigns	5
Bycatch assessment or reduction techniques	2
Training for working with local communities, businesses and other local stakeholders	2
Socio-economic research	2
Information exchange and cooperation	2
Control of illegal take and trade	2
Training for wildlife guards/patrol	1
IOSEA Site network sites management	1
Approaches to control poaching in remote areas	1

## **5.5 Strengthen and improve enforcement of conservation legislation**

### **5.5.2 Review of policies and laws**

60. Half of the respondents conducted a review of policies and laws to address any gaps, inconsistencies or impediments concerning the conservation of marine turtles and their habitats. Seven countries reported not having conducted such a review without further explanation and one reported that the review of the relevant action plan was due in 2022.

### **5.5.3 Enforcement of conservation legislation**

61. When asked whether the country experienced any difficulties achieving cooperation to ensure compatible application of laws across and between jurisdictions, half of the respondents reported experiencing such difficulties. Seven respondents clearly stated that the collaboration between jurisdictions and inter-agency collaboration within the country was challenging. Various reasons for insufficient collaboration in enforcement were named: slow uptake of localized issues at the national level, lack of technical understanding of marine turtle issues, remoteness of provinces in the case of Island states, and misinterpretation of the law. Poor understanding of the law related to turtle protection by local lawyers was mentioned as a challenge, which could be addressed through targeted training for prosecutors. Eight countries reported having no difficulties to achieve cooperation in law enforcement, while the rest were unsure.

## **OBJECTIVE VI: PROMOTE IMPLEMENTATION OF THE MOU, INCLUDING THE CMP**

### **6.1 IOSEA Marine Turtle MOU membership and activities**

62. When asked whether their country would be in favour, in principle, of amending the MOU to make it a legally binding instrument, Yemen, the United Republic of Tanzania, South Africa, Mozambique, Kenya, the United States and the Maldives answered yes. Myanmar, Seychelles and the United Kingdom answered no. Australia, India, Jordan, Madagascar, Oman and Vietnam reported having no view. Four countries did not answer.
63. When asked instead whether their country would be favourable to amending the MoU to make it a legally-binding instrument over a longer time horizon, Pakistan, Viet Nam, Jordan, the Philippines, Oman, Australia, the Maldives, Madagascar and India answered having no view. Yemen, South Africa, Kenya, the United States and Mozambique answered yes and the United Kingdom, Seychelles, and the United Republic of Tanzania answered no. Three countries did not answer.
64. Only nine respondents indicated activities of their country to encourage additional states to join the MOU, among them were introducing IOSEA Marine Turtle MOU at related meetings and directly helping the Secretariat with contacting potential Signatories.

### **6.3 Resources to support implementation of the MoU**

65. Twelve countries reported soliciting funds from, or seeking partnerships with, other governments, major donor organizations, industry, private sector, foundations or NGOs to raise funds for marine turtle conservation activities.

#### **6.4 Coordination among government agencies**

66. All but two respondents reported having designated a lead agency responsible for coordinating national marine turtle conservation and management policy. Fourteen countries reported that the roles and responsibilities of all government agencies related to the conservation and management of marine turtles and their habitats were clearly defined, nine of them reported having recently conducted a review of agency roles and responsibilities.

#### **Concluding remarks**

67. In conclusion, substantial progress has been made by individual countries, particularly in the creation and extension of protected areas, in enhancing habitat protection and restoration, involving local communities and conducting research. Noteworthy are also the efforts of several Signatories to reduce pollution through restrictions and bans on plastic use, as well as clean-up activities. Such measures should become much more common across the region to reduce the pressure on marine turtle habitats. Ecotourism was the most important use of marine turtles, followed by traditional and cultural significance and consumptive use. These can be utilized to generate momentum for conservation of the species, but also need to be managed carefully to avoid negative impacts on marine turtles. Signatories identified their priorities for action, issues needed to be addressed through international cooperation and capacity-building needs. For example, enhancing quality and extent of research was one of the main issues prioritized, which required both enhanced international cooperation and capacity building. Reduction of bycatch was also highlighted as a major priority for action, requiring both international cooperation (e.g. through gear technology transfer and enforcement) and capacity building (training for observers, gear use, evaluation methods, etc.). Evident from the reports was that exchange of information, as well as strengthening inter-agency and international cooperation and coordination remains a major challenge. In particular, illegal fishing and illegal trade and unregulated development in turtle habitat remain challenges requiring enhanced inter-agency or international cooperation to be properly addressed.