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**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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**FURTHER DEVELOPMENT OF THE  
IOSEA TECHNICAL SUPPORT / CAPACITY-BUILDING PROGRAMME**



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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**FURTHER DEVELOPMENT OF THE IOSEA TECHNICAL SUPPORT /  
CAPACITY-BUILDING PROGRAMME**

The attached working paper<sup>1</sup>, prepared by Dr. Jeff. Miller, Advisory Committee member, responds to a need – identified most recently at the Sixth Meeting of Signatory States (Bangkok, 2012) – to review and improve delivery of the IOSEA Technical Support / Capacity-building Programme.

The paper will be discussed first in the Advisory Committee meeting (5-6 September) and it may be revised and re-circulated in the light of those discussions. However, the Secretariat considers it important to distribute the document in advance to give IOSEA SS7 participants ample time to reflect on the issues and ideas it contains.

Attention is drawn also to the Report of the Secretariat (MT-IOSEA/SS.7/Doc. 5) which touches briefly on this subject (in paras. 14-17); and to Information paper MT-IOSEA/SS.7/Inf. 12, which reproduces the summary report on this topic that the Secretariat prepared for the Sixth Meeting.

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<sup>1</sup> The 30 pages of annexes to the paper (mainly tables of figures used to support the analysis) have not been reproduced, but are available for download in a separate file from the IOSEA website.

# **Indian Ocean – South-East Asian (IOSEA) Marine Turtle Memorandum of Understanding**

## **Synoptic Report on Technical Support and Capacity Building Program Review**

**Dr. J.D. Miller, IOSEA Advisory Committee Member**

### **INTRODUCTION**

The goal of the IOSEA Technical Support and Capacity Building Program (TS/CBP) is to strengthen technical and institutional capacity of the Signatory States of the IOSEA region in order to better implement the Conservation Management Plan (CMP). The objectives of the TS/CBP (IOSEA 2009) are:

- (1) “to build greater self-sufficiency nationally and sub-regionally;
- (2) to promote the integration of various key components of the IOSEA in national conservation strategies;
- (3) to encourage the active involvement of key stakeholders throughout the region;
- and
- (4) to foster more collaboration among Signatory States.”

### **Background**

In support of the TS/CBP, the eight-member Advisory Committee provides advice, training, and technical support in many aspects of marine turtle conservation for capacity building by the Signatory State. Financial support from the United States Marine Turtle Conservation Fund enables members of the Advisory Committee and/or Secretariat to travel to Signatory States. Advisory Committee members also “serve as resource persons

at national training sessions, and to support other initiatives in capacity building.” (IOSEA 2012).

The assistance offered by the Advisory Committee members listed in the IOSEA training roster includes (a) Technical skill development (e.g., tagging, attaching transmitters, egg/hatchling management, designing monitoring programs, surveys, and experiments); (b) Data analysis (e.g., statistical advice, trend analysis, interpretation of data); (c) Report preparation (e.g., writing-up of results and publication); and (d) Review of existing material (e.g., research and/or management efforts and plans).

The initial and subsequent documents concerning training and capacity building prepared by the Secretariat requested that interested Signatory States submit a brief proposal for review to identify training needs, and to facilitate positive outcomes so that arrangements for support could be made. Suggestions for the scope of projects and the type of assistance that could be offered were included in the documents (IOSEA 2012). The scope of potential projects included a) workshops, advisory or review in scope; b) augmentation of in-country training efforts; c) focused for managers, rangers, and/or researchers; d) be on any scale (local beach, province/state, country, sub-region, region); e) concern any species and/or any topic (e.g., hatchery management, tagging, satellite tracking, data analysis).

The response was “less than enthusiastic” (IOSEA 2012). Only a few countries submitted proposals and those have received training workshops covering the areas of concern. Most training requested and provided has focused on the biology and population analysis (including satellite tracking) of marine turtles. The Secretariat has sought feedback from the Signatory States and involvement of the Advisory Committee about “other complementary or alternative approaches for delivering training and /or technical support to Signatory States” (IOSEA 2012).

The comment that “... there has been only modest use of the Advisory Committee for Technical Support and Capacity-building by IOSEA countries” (MT-IOSEA/SS.6/Doc. 8) initiated considerable discussion at the meeting of the Advisory Committee that preceded the 6<sup>th</sup> Meeting of IOSEA Signatory States. With a view to improving the TC/CBP training capabilities and delivery, and engaging the Signatory States to use training available through IOSEA, the Advisory Committee identified a short list of objectives and actions:

**Objectives:**

- A. Improve interaction and collaboration among members of the IOSEA training roster
- B. Identify training needs of Signatory States
- C. Improve training process and materials

**Actions:**

1. Revise and recirculate MT-IOSEA/SS.6/Doc.8 among IOSEA roster of training experts and country representatives,
2. Review training needs identified by Signatory States
3. Review training needs identified by Advisory Committee members
4. Provide advice on improving training delivery and materials

**Goal of the Report**

This report addresses the Objectives and Actions identified (above) concerning review of the training needs of the Signatory States to better define the contribution that the Advisory Committee members can make to the conservation efforts of the countries in the IOSEA region. The goal of this report is to propose a proactive process through which the Objectives and Actions can be fulfilled.

**METHODS**

The people on the IOSEA training roster were sent an email which asked them to update their interest and skills. The document MT-IOSEA/SS.6/Doc.8 was revised and circulated to the Secretariat and the IOSEA Advisory Committee asking for their input. In addition, the questions that comprise the Country Reports were evaluated from the perspective of extracting information to identify training needs and additional information that would assist providing appropriate training and capacity building.

Country Reports from the Signatory States (as of 2012) were examined for answers to specific questions in the CMP that pertain to training needs and other issues with which the country identified. The Country Reports from four Signatory States were excluded from analysis (France, United States, United Kingdom, and Australia) on the basis of (1) not being contiguous with the remainder (France, United States, United Kingdom) or (2) being closely allied with the previous three by virtue of its socioeconomic patterns and cultural heritage (Australia).

The answers to every question in the Country Reports were not examined. Questions that required 'Yes/No' responses and/or qualitative assessment were included in favor of those that requested narrative answers. Most questions required a Yes/No response but also allowed a third possible response such as 'Under Investigation', 'Not Applicable', 'Unsure', or 'Unknown'. Occasionally, no answer was given in the report. In addition, several questions did not elicit clear answers from the respondents. These questions contained two types of possible answers: a qualitative assessment response (i.e. Question 1.5.2: 'High, Moderate, Low, Unknown'; Question 1.6.1: 'Excellent, Good, Low, Unknown') and a 'Yes/No' answer component. These questions elicited a mixture of

assessment and 'Yes/No' responses. In these cases, a 'Yes' answer was assumed to be equal to either a 'High or Moderate' response for question 1.5.2 or an 'Excellent' or 'Good' response for question 1.6.1.

Answers from the individual Country Reports were grouped by the IOSEA Sub-regions to identify sub-regional issues. Because not every country in every sub-region provided answers to every question and because answers could be left blank, the number of responses within each sub-region was often too low to allow identification of a meaningful level of importance.

In addition, Country Report program sections 5.2 and 5.4 of each Country Report were reviewed to extract the training issues and needs identified by the Signatory states. These were assigned to one or more of the IOSEA Conservation Management Plan programs within the six objectives and compiled by country within the four IOSEA sub-regions. In most cases the assignment was to a single program. In a few cases the statements made in the Country Reports were phrased in such a manner that they fit within two (or more) programs.

Some of the Country Report did not identify training issues or needs in program activities 5.2 and 5.4. The remaining countries identified at least one training issue or need. In addition to identifying training issues and needs, Viet Nam identified ways in which it intended to address them.

## **RESULTS & DISCUSSION**

**Objective:** Improve interaction and collaboration among members of the IOSEA training roster

**Action:** Revise and recirculate MT-IOSEA/SS.6/Doc.8 among IOSEA roster of training experts and country representatives.

The people on the IOSEA training roster were sent an email asking them to up-date their interest in providing training and skill areas in which they felt competent to provide training. The few respondents indicated that a change in the document was not required.

The document TC/CB Program (MT-IOSEA/SS.6/Doc.8) was revised and sent to the Secretariat and the IOSEA Advisory Committee Chairman. The comments made in the response spoke to both the current revision and the potential for developing a dynamic program. The further development of the TC/CB Program has languished for lack of input from IOSEA Advisory Committee Members and the Secretariat. The project needs to be

revisited during the AC meeting prior to the SS7 Meeting to gain face to face commitment of members for sharing ideas and defining further actions.

In addition, the questions contained in the Country Reports were evaluated from the perspective of identifying training needs. Specific comments on individual questions are presented in Appendix I. Although the questions of the Country Report form provide useful information, virtually all questions can be improved to elicit more, quantifiable information.

**Objective:** Identify training needs of Signatory States.

**Action:** Review training needs identified by Signatory States.

**(a). Training Needs Identified by Signatory States.**

Training needs Identified by Signatory States varied among the countries (Table 1). Considering all reporting countries within the IOSEA Region, four of the six highest ranked 'needs' identified by the Signatory States deal with improving knowledge, improving resources, and gaining and sharing information about marine turtles in the IOSEA region.

The greatest overall 'need' identified was to improve knowledge of nesting and foraging habitats (Obj III, 3.1: 77%). Seventeen of the countries indicated their need for training within Program 3.1 (*Conduct studies on marine turtles and their habitats targeted to their conservation and management*). From a training perspective this translates to providing training in research methodologies so that countries can develop a scientific basis for their management activities, including both the turtles and their habitats (Table 1).

The second highest ranking 'need' was development of human and equipment resources (Obj V, 5.4: 72%). It is clear that countries want to develop their human and equipment resources in terms of supporting conservation, research, and enforcement.

The third highest ranking 'need' was public education and awareness programs (Obj IV, 4.1: 68%). This was followed by protection of foraging habitat (Obj II, 2.1: 63%); exchange of information (Obj III, 3.4: 59%); and information exchange and regional cooperation (Obj V, 5.3: 59%).

It is clear from this ranking that the IOSEA countries recognize that a three pronged approach is needed in the IOSEA region. First, biological information needs to be gathered, second, resources are needed to gather the information and to disseminate it, and third, the information needs to be shared.

**(b). Sub-regional Training Needs based on the four IOSEA Sub-regions Identified by Signatory States.**

On a sub-regional basis, the importance of identified needs and issues are not the same as when the IOSEA region is considered as a whole. In the western sub-region, program activities involving nesting and foraging habitats (3.1), public education (4.1), and development of human and equipment resources (5.4) were the most important. Program activities dealing with the impact of fishing (1.4), local community involvement (4.3), regional information exchange (5.3) and funding (6.3) were also considered important issues.

In contrast in the Northwestern sub-region, program activities protection of foraging habitat (2.1), nesting and foraging habitats (3.1), and exchange of information (3.4) were the most important. The identification of threats (1.1) public education (4.1), regional information exchange (5.3), and development of human and equipment resources and funding (6.3) were also important.

In the Northern Indian Ocean sub-region the greatest need was information exchange and regional cooperation (5.3). This was followed by public education (4.1), and development of human/equipment resources (5.4). Funding (6.3) was considered by two countries to be important

In the South East Asia sub-region, nesting and foraging habitats (3.1), protection of foraging habitat (2.1), and development of human and equipment resources (5.4) were the most important. Public education (4.1) and legislation and enforcement (5.5) were identified as 'needs' in five of seven Country Reports).

Within the sub-regions, some countries indicated greater number of needs than others. In the Western sub-region, for example, Mozambique indicated a desire for training and assistance with 18 of 24 program activities. The Seychelles identified 10 program activities with which assistance would be welcome. In the Northwestern sub-region Eritrea indicated that 12 program activities could be improved with training help. The other countries in the sub-region identified fewer than 8 program activities with which they would like assistance. In the Northern sub-region two countries Bangladesh and Sri Lanka, signified that they could use help with seven and nine program activities, respectively. In the South East Asian sub-region Cambodia (10), Myanmar (12), and the Philippines (14) identified 10 or more program activities that would be improved with training in specific topics.

The variation in identified needs highlights two important aspects of the situation: first, that training is desired and, second, that a 'one-size-fits-all' approach would not be appropriate given the area and number of countries in the IOSEA region in delivering training. In addition, for training in smaller countries (e.g., Myanmar, Bangladesh, Maldives), it is feasible to conduct training at a single location; whereas, in larger countries the issues may vary from area to area, multiple training sessions tailored to local issues/situations would be more beneficial.

### **(c) Sub-regional and Regional Training Needs Identified from Country Reports**

Many of the questions contained in the CMP have subparts (e.g., 1.3.2 contains a list of possible adverse economic incentives from which respondents may select) or are linked questions (1.4.1 and 1.4.2 deal with the occurrence of fisheries in the territorial waters of the country and the effort and perceived impact of that fishery).

The proximity of turtle resources and low penalties for illegal take were cited by the Western Indian Ocean Sub-region as being the most important issues to be addressed (Objective I, Question 1.3.2), whereas the other sub-regions did not consider these issues to be as important (Table 2). These issues were also important at the Regional level (Table 3).

The identification and relative importance of fishing type and effort varied among the Sub-regions. Set Gill nets and longline fisheries were the most important in the Western Indian Ocean (WIO), North-Western Indian Ocean (NWIO), and South-East Asian (SEA) but not the Northern Indian Ocean (NIO). Shrimp trawling, Purse Seining, and Drift nets were important in SEA but not the other Sub-regions (Objective I, Question 1.4.1, 1.4.2). These fishing methods were also important at the Regional level (Table 3).

Negative answers to Question 1.4.4 (Objective I) provided insight into the lack of minimization of incidental capture of marine turtles in fisheries, although this question is linked to the types of fishing methods used. WIO reported two methods and NWIO acknowledged five methods were not being used that possibly could reduce the incidental capture of marine turtles (Table 2). At the Regional level, net retention and recycling schemes, and avoiding encirclement of turtles in purse seines ranked highest followed by the use of TEDS and monitoring of FADs among the methods that could reduce the incidental capture of marine turtles (Table 3).

Considering the answers given in Question 1.4.5, improved vessel monitoring systems would assist in reducing incidental capture of turtles at the Regional level (Table 3) but only in the NWIO at the Sub-regional level (Table 2).

Traditional medicines along with meat and egg consumption were the most important issues in the WIO but not the other Sub-regions (Question 1.5.2, Table 2). At the Regional level the same three ranked as the most important issues (Table 3).

The level of traditional harvest and its impact were identified as very important in the WIO but not the other Sub-regions (Question 1.5.3, Table 2). This was carried through to the Regional level (Table 3).

Light pollution, buildings and re-vegetation of the dunes were important issues that need to be addressed at both the Sub-regional and Regional levels (Question 1.6.1, Table 2, 3).

Most countries in the Region have conducted some level of evaluation of their nest and beach management programs (Question 1.6.2, Table 2, 3).

Objective II deals with measures to protect, conserve, and rehabilitate marine turtle habitats. Higher 'No' values in the tables indicate a need to address the issue. At the Sub-regional level most countries answered that they are dealing with turtle habitats in a positive manner; however, the Regional analysis indicates that more could be done, especially in 2.1.2, 2.1.3, and 2.2.3 (Tables 2, 3).

Objective III focuses on improving understanding of marine turtle ecology and populations. Sub-regional assessment indicates that most countries have long-term monitoring programs (3.1.2) and some information on the genetic identification of their populations (3.1.3). The majority have done some tagging and satellite tracking of turtles (Table 2). However, at the Regional level there is still a need for better genetic definition of the populations (Table 3). In addition to periodic review of the research, more studies on the population dynamics and disease pathology are needed, along with other biological and ecological aspects of the species.

Objective IV concerns education and awareness programs. The majority of countries indicated that they are actively involved in such programs. However, indigenous groups, members of the military and scientists receive less emphasis (Tables 2, 3). This result is in contrast to the 'needs' identified by the countries (Table 1). Seemingly, the counties are trying but struggling with developing and delivering the programs.

Objective V deals with enhancing national, regional and international cooperation. The majority of countries have reviewed CITES obligations and have participated in some CITES training. The most interesting part of Objective V concerns the relative importance of various management actions and issues. When the 'Essential' and 'Important' ratings are combined the higher numbers indicate a need for international assistance. In the WIO, assistance with development of alternative livelihoods for people who currently utilize marine turtles was rated as essential and important (Table 2). In addition, help with oil spills incidental capture, harvest and poaching ranked high in the WIO. In the NWIO assistance with tagging and satellite tracking was identified as a need. In SEA habitat studies and development of alternative livelihoods were identified as needs. The NIO did not identify any specific needs. At the Regional level, the top three needs identified included developing alternative livelihoods, reducing foreign take, poaching, identifying populations, plus training and capacity building (Table 3).

All reporting countries indicated that the common species in their area are green turtles and hawksbill turtles, although other species do occur in many territories (Table 4). No countries identified specific species that are at risk and/or in need of special management. This is likely to be important at the local level given the diversity of interactions between people and marine turtles across the IOSEA region.

**Action: Review training needs identified by Advisory Committee members.**

The assistance offered by the Advisory Committee members has focused mainly on:

- 1) Research skill development (e.g., tagging, attaching transmitters, egg management, designing monitoring programs, surveys, and experiments);
- 2) Data analysis (e.g., statistical advice, trend analysis, interpretation of data);
- 3) Report preparation (e.g., writing-up of results and publication); and
- 4) Review of existing material (e.g., research and/or management efforts and plans).

Although valid and useful, this approach can be improved, both in content and application by improving the effectiveness and range of topics of the training process (audience focus, information presentation, active involvement, and follow-up).

**(1) Preparation and revision of country reports**

All Signatory States need at least some help in preparing, editing, and revising their individual Country Reports. Specifically, Country Reports typically lack reference to the source of the information/data and methods used to collect and evaluate the information/data. Correcting this omission requires gathering and presenting information from a variety of sources, including both internal reports and formal publications. Much of the needed information exists in the citations provided in section 3.1.1 in each Country Report but has not been incorporated into the body of the Country Reports. Doing so aids the reader immensely by providing the source of the information. Many of the documents cited in the country reports are available through the IOSEA Bibliography.

The Advisory Committee members can contribute to the process by providing guidance in the preparation and review of the Country Reports. Using the CMP form as the outline, Advisory Committee members can assist the country representative in gathering and assessing information, as well as in the assessment of the information. This can be accomplished either in-person or via email. Perhaps one or two Advisory Committee members could work with individual country representatives to edit and revise the reports.

**Objective:** Improve training process and materials

**Action:** Provide advice on improving training delivery and materials

To enhance the integration of training throughout the region, all IOSEA training programs should be coordinated with the objectives and sections of the Conservation Management Plan (CMP). The use of a standardized set of objectives (based on the CMP) facilitates appropriate acknowledgement of role of IOSEA, while allowing for editing, focus, and revision of core topics and presentations. This approach does not lead to generic 'one-

size-fits-all' content. On the contrary, it provides a context that allows the presenter to customize to the needs of the audience (researchers, managers, government officials) and to scale the training to the appropriate level (e.g. local, country, sub-region, region) while linking to the goals of IOSEA CMP. By linking training to the CMP objectives, the participants are able to relate their specific needs to the sub-regional and regional needs as well as gaining specific skills. As a secondary benefit, the information presented and the methods recommended will become standardized over the IOSEA region through multiple training sessions regardless of who does the presentation.

**Table 3. Objectives of the CMP that should be used to guide training and capacity building.** (Objective VI has been omitted because it deals with support of IOSEA)

<b>Objectives</b>	<b>Potential Module or focal area for a training course</b>
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

Advisory Committee members should develop a core set of topics and presentations based on the CMP that are available for use, editing, revision, and delivery in IOSEA training programs. By way of example, in 2012, Dr. Limpus presented a marine turtle conservation training program in response to the requests of the Myanmar organizing committee and the IOSEA Secretariat. His training program included both a series of lectures and a hands-on field component to help consolidate the learning experience. The training program dealt with the following topics:

1. Marine turtle diversity and identification,
2. Marine turtle life history,
3. Survey and census of turtle nesting populations,
4. Embryology and movement induced mortality of turtle eggs,
5. Temperature dependent sex determination,
6. Climate change impacts on marine turtles,
7. Tagging and tracking studies,
8. Marine wildlife stranding program and marine turtle necropsy,
9. The biology of olive ridley turtles, and
10. Monitoring marine turtle foraging populations.

Based solely on the titles (not content), the majority of these presentations fall into Objective III with the individual lectures filling-in much of the detail. Considering the content, many of the presentations also contained material that is relevant to Objectives I, II. By developing a structure that relates specifically to the IOSEA Objectives the training

reinforces the IOSEA CMP approach to conservation. In addition to improving biological knowledge and field skills of the participants, using the objectives of the CMP as the structure of the IOSEA training program will improve the on-going revision of the Country Reports. It also provides a strong link to the context of the objectives. It must be remembered that whoever is delivering the training represents the IOSEA group as well as themselves.

One essential part of a successful training program is evaluation of the transfer of information/skills gained to the on-ground situation. Follow-up visitation and/or reporting are necessary to developing better training programs.

The use of internationally/regionally/locally developed resources in training sessions forms a basis for standardizing field methods within and among conservation areas and agencies, as well as among countries within the IOSEA region. For participants, the use of manuals facilitates standardization of methods because they have reference material that they take home and follow. Standardization of methods, in turn, allows the comparison of results at sub-regional, regional, and international levels.

Each of the Country Reports contains a list of papers concerning marine turtles within the national jurisdiction (Section 3.1.1). Most of these are available through the IOSEA Bibliography. These resources provide good back-ground material for lectures and good material that can be developed into hands-on experience for the participants. Providing resource material that the participants have worked with during training improves the likelihood that the methods will be applied in the field and that local methods will be standardized and coordinated with those used regionally.

## **Summary**

Overall, the three greatest identified issues and needs deal with (1) providing training in research methodologies so that countries can develop a scientific basis for their management activities, including both the turtles and their habitats (2) developing the human and equipment resources in terms of supporting research and enforcement and (3) improving public education programs and their information exchange within the IOSEA region.

On a sub-regional basis, the importance of identified needs and issues are not the same as when the IOSEA region is considered as a whole (Tables 3, 4). In the WIO Sub-region, program activities dealing with nesting and foraging habitats (3.1), public education (4.1), and development of human and equipment resources (5.4) were the most important. In contrast in the NWIO Sub-region, program activities focused on protection of foraging habitat (2.1), nesting and foraging habitats (3.1), and exchange of information (3.4) were the

most important. In the NIO Sub-region, exchange of information and regional cooperation (5.3) was the most important need. In the South East Asia Sub-region nesting and foraging habitats (3.1), development of human and equipment resources (5.4), and protection of foraging habitat (2.1) were the most important identified needs.

Within the sub-regions, some individual countries indicated greater number of needs than others. In the Western sub-region, Mozambique indicated a desire for training and assistance with 18 program activities. Kenya identified 11 program activities with which assistance would be welcome. In the Northwestern sub-region Eritrea indicated that 12 program activities could be improved with training help. The other countries in the sub-region identified fewer than eight program activities with which they would like assistance. In the Northern sub-region two countries Bangladesh and Sri Lanka, signified that they would gain from help with seven and nine program activities, respectively. In the South East Asian sub-region Cambodia (10), Indonesia (12), Myanmar (12), the Philippines (14) and Viet Nam (10) identified 10 or more program activities that would be improved with training in specific topics.

**Objective:** Improve training process and materials

**Action:** Provide advice on improving training delivery and materials

It is clear that ‘needs’ exist for training in the countries of the IOSEA region. However, it must be recognized that training needs vary throughout the IOSEA region. In addition, IOSEA has a role in providing training to facilitate the conservation of marine turtles in the region through multiple initiatives. There are three scenarios available.

**1. Retain current format and style** (maintain the status quo)

In the current program, Signatory States were given a set of explanatory documents and asked to submit training proposals for review and potential acceptance. This format encouraged countries to identify and design relevant training. The iterative process was supposed to identify training needs and match the needs to Advisory Committee trainers who can develop and deliver a program to satisfy the needs. IOSEA Secretariat was prepared to assist with funding so that the country did not have to bear the entire cost of training.

Unfortunately, the current format of the training program has not worked as well as hoped. “[T]here has been only modest use of the Advisory Committee for Technical Support and Capacity-building by IOSEA countries” (MT-IOSEA/SS.6/Doc. 8). Only a few training sessions have resulted from the interactions between the IOSEA and the Signatory States.

**2. Countries develop their own training programs without using the IOSEA Secretariat or the Advisory Committee** (reduces or eliminates the role of IOSEA in training).

In this scenario, countries identify their own needs and contact whomever they choose to present the training session(s). This by-passes the IOSEA Secretariat and may or may not involve Advisory Committee members. Within the IOSEA Region and among the Advisory Committee members resides a wealth of experience and expertise focused on the conservation of marine turtles. This approach has two major negative issues. First, by not using the resources offered through the IOSEA Secretariat, available resources are likely to be under-utilized with the risk of not addressing the conservation needs of the turtles in adjacent countries increases. Many countries in the area face similar, interconnected issues. Locally developed training is likely to be focused on local issues and less likely to address issues at a larger scale and link to larger scales of information and conservation management. Second, the country would bear the complete cost of training. Accepting this scenario would not improve training in the IOSEA region.

**3. IOSEA Secretariat approaches the Signatory States with a series of training topics from which they can choose programs that best fit their needs** (increases the role of IOSEA in training).

This approach makes the IOSEA proactive in providing training opportunities to Signatory States and facilitates delivery of relevant training in a timely manner. It overcomes the negative issues associated with training options 1 and 2 to the organization and delivery of training by bringing the training under the IOSEA banner. Cost sharing and funding arrangements can be negotiated.

## RECOMMENDATIONS

IOSEA Secretariat, in conjunction with the Advisory Committee members, should adopt a proactive process for training within the IOSEA region, including:

- A. Becoming proactive in delivering training within the regions by offering Signatory Countries training topic options.
- B. Developing an over-arching structure for training that addresses the identified needs of the Signatory States.
- C. Structuring training to be based on the Objectives of the CMP to address identified 'needs' of the Signatory States through tailoring content.
- D. Developing skills of Sub-regional and Country representatives in the preparation and revision of country reports
- E. Developing skills of Sub-regional and Country representatives and researchers in (1) collecting, analyzing, and presenting biological data, (2) defining foraging populations, and (3) conservation management techniques (interactions with fisheries, coastal development). In addition, training should emphasize communication and coordination techniques that can be used among various levels (local, province, country, sub-region, region) to coordinate conservation activities.
- F. Evaluating all training programs by follow-up visits to assess of the transfer of information and skills.
- G. Identifying individuals who can and will deliver the training. These people should be from among the Advisory Committee members and other individuals from within the region and beyond who will contribute through information exchange and hands-on experience for trainees.
- H. Offering training to Signatory Countries, and accepting requests from them for training, in specific areas of marine turtle biology, conservation, and management at little or no cost for training in specific areas. IOSEA has relied on countries making application for training and the response has not been large. Turning the situation around should facilitate greater use of the training available.
- I. Soliciting funds to offset the majority of costs associated with delivery of the training (including travel, accommodation, materials). Probably the largest impediment to the functioning of the IOSEA training initiative is funding rather than interest. Such initiatives are expensive and IOSEA needs to secure funding to support much of the training. Additional underwriting of local costs could improve the use of the training offered.

Table 1. Needs analysis of IOSEA Signatory states based on information supplied in sections 5.2.2, 5.4.2 of the Country Reports.

	Comoros	Kenya	Madagascar	Mozambique	Mauritius	Seychelles	South Africa	Western Indian Ocean	Bahrain	Eritrea	IR Iran	Jordan	Oman	Saudi Arabia	North-western Indian Ocean	Bangladesh	India	Maldives	Pakistan	Sri Lanka	Northern Indian Ocean	Cambodia	Indonesia	Malaysia	Myanmar	Philippines	Thailand	Viet Nam	Southeast Asian	Total Reporting	Rank within Objective	OVER ALL RANK
<b>OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY</b>																																
1.1	ID Threats:			X	X			2	X	X		X			3						0	X			X		X	3	8	1	10	
1.2	Ameliorate Threats		X	X				2	X	X					2						0	X			X			2	6	4	15	
1.3	Correct adverse Socioeconomic incentives		X					1				X			1						0			X	X			2	4	6	19	
1.4	Reduce capture and mortality of turtles in fishing industry			X		X	X	3							0	X					1		X			X	X	3	7	2	12	
1.5	Prohibit Direct Harvest		X	X				2	X						1						0	X	X	X				3	6	4	15	
1.6	Nesting beaches Protection			X				1		X		X			2					X	1	X	X	X				3	7	2	12	
<b>OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS</b>																																
2.1	Foraging Habitat Protection:	X	X	X	X			4	X	X		X	X	4	X	X					2	X	X		X	X	X	X	6	16	1	4
2.2	Rehabilitate habitats	X		X		X		3	X		X				2						0	X	X					2	7	2	12	

OBJECTIVE III: IMPROVE UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS THROUGH RESEARCH, MONITORING AND INFORMATION EXCHANGE																														
3.1	Nesting and Feeding Habitats:		X	X	X	X	X	X	6		X	X	X		X	4	X		X	2	X	X	X	X	X	X	7	19	1	1
3.2	Collaborative research	X	X					2				X	X	2		X			1			X	X		X	3	8	3	10	
3.3	Analyse Data		X		X			2		X				1					0			X	X		X	3	6	4	15	
3.4	Exchange Information	X	X	X	X	X	X	6		X	X	X	X	4			X	X	2			X	X	X	X	4	16	2	4	
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 & awareness Prg	X	X	X	X	X	X	7		X		X	3	X	X	X	3	X	X	X	X	X	X	X	X	5	18	1	2	
4.2	Develop alternative livelihoods				X			1					0	X		X	2	X	X			X			3	6	3	15		
4.3	Public (Local Community) Involvement	X	X	X	X	X	X	6		X	X		2		X	X	2	X		X		X		X	3	13	2	7		
OBJECTIVE V: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION																														
5.1	Share Information related to illegal trade and enforcement				X	X		2					0				0					X			1	3	4	20		
5.2	Develop and implement National plans	X					X	2			X		1				0								0	3	4	20		



Table 2. IOSEA Sub-region data based on information in the Country Reports

IOSEA SUB-REGION DATA										
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OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY														
1.3.2	Which of these adverse economic incentives are underlying threats to marine turtles in your country? [TSH]			Formula	WIO		NWIO		NIO		SEA			
	High prices commended by from turtle products relative to other commodities			YES	NO	# = Y   N	3	1	0	0	1	0	1	0
	Lack of affordable alternatives to turtle products			YES	NO	# = Y   N	2	1	1	0	0	0	2	0
	Ease of access to the turtle resource (eg. by virtue of proximity or ease of land/water access)			YES	NO	# = Y   N	6	0	2	0	3	0	3	0
	Low cost of land near nesting beaches			YES	NO	# = Y   N	1	1	1	0	2	0	0	0
	Low penalties against illegal harvesting			YES	NO	# = Y   N	6	0	2	0	2	0	1	0



1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN	# = RH+M	2		1		1		5	
1.4.1	f) Driftnet YES NO	# = Y   N	1	6	4	4	2	2	6	1
1.4.2	Fishing effort:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN	# = RH+M	1		2		1		3	
1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN	# = RH+M	1		1		0		3	
1.4.4	Which of the following methods are used by your country to minimise incidental capture/mortality of marine turtles in fishing activities? [IND]		WIO		NWIO		NIO		SEA	
	a) Appropriate handling of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets) YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	3	1	4	2	3	1	5	2
	b) Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness) YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	2	2	1	4	3	1	3	3
	c) Measures to avoid encirclement of marine turtles in purse seine fisheries YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	2	2	0	4	0	3	2	3
	d) Appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	2	1	1	4	1	1	3	2
	e) Monitoring and recovery of fish aggregating devices (FADs) YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	3	2	1	4	1	2	2	2
	f) Net retention and recycling schemes YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	1	4	0	5	0	2	2	2
	g) Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities) YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	# = Y   N	3	4	6	0	4	0	5	1

	<b>h) Effort management control</b>	<b>YES, NO, UNDER INVESTIGATION, NOT APPLICABLE</b>	# = Y   N	3	3	4	0	3	0	4	1
1.4.5	<b>Which of the following programs has your country developed - in consultation with the fishing industry and fisheries management organisations - to promote implementation of measures to minimise incidental capture and mortality of turtles in national waters and in the high seas?</b>			WIO		NWIO		NIO		SEA	
	<b>a) Onboard observer programs</b>	<b>YES, NO, NOT APPLICABLE</b>	# = Y   N	6	1	2	3	1	3	4	2
	<b>b) Vessel monitoring systems</b>	<b>YES, NO, NOT APPLICABLE</b>	# = Y   N	5	1	2	4	1	3	2	3
	<b>c) Inspections (i.e. at sea, in port, at landing sites)</b>	<b>YES, NO, NOT APPLICABLE</b>	# = Y   N	6	0	6	1	5	0	5	1
	<b>d) Training programs / workshops to educate fishers</b>	<b>YES, NO, NOT APPLICABLE</b>	# = Y   N	7	1	7	1	5	0	7	0
	<b>e) Informative videos, brochures, printed guidelines etc.</b>	<b>YES, NO, NOT APPLICABLE</b>	# = Y   N	4	2	6	1	5	0	6	0
1.5	<b>Addressing harvest of, and trade in, marine turtles; and protection of habitat</b>										
1.5.2	<b>Which, among the following list, are economic uses and cultural values of marine turtles in your country? [INF] RELATIVE PREVALENCE / IMPORTANCE</b>			WIO		NWIO		NIO		SEA	
	<b>Meat consumption</b>	<b>YES, NO HIGH, MODERATE, LOW, UNKNOWN</b>	# = Y + H + M	7		2		1		3	
	<b>Egg consumption</b>	<b>YES, NO HIGH, MODERATE, LOW, UNKNOWN</b>	# = Y + H + M	6		2		3		4	
	<b>Shell products</b>	<b>YES, NO HIGH, MODERATE, LOW, UNKNOWN</b>	# = Y + H + M	5		1		0		1	
	<b>Fat consumption</b>	<b>YES, NO HIGH, MODERATE, LOW, UNKNOWN</b>	# = Y + H + M	3		1		0		1	

	Traditional medicine	YES, NO	HIGH, MODERATE, LOW, UNKNOWN	# = Y + H + M	3		4		0		3	
	Eco-tourism programs	YES, NO	HIGH, MODERATE, LOW, UNKNOWN	# = Y + H + M	5		1		4		5	
	Cultural / traditional significance	YES, NO	HIGH, MODERATE, LOW, UNKNOWN	# = Y + H + M	4		2		2		2	
1.5.3	Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. [IND, TSH]				WIO		NWIO		NIO		SEA	
	Level of harvest: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN			# = RH + M	6		2		1		2	
	Impact of harvest: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN			# = RH + M	5		2		1		2	
1.6.1	First, tick one of the boxes at left to indicate whether or not your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and nesting females. If yes, then estimate the relative effectiveness of these measures. [IND, SAP] RELATIVE EFFECTIVENESS				WIO		NWIO		NIO		SEA	
	Monitoring/protection programs	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	8		2		5		3	
	Education/awareness programs	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	8		4		4		5	
	Egg relocation/hatcheries	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	3		1		5		6	

	Predator control	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	3			0			0			6		
	Vehicle / access restrictions	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	5			1			2			2		
	Removal of debris / clean-up	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	5			4			2			6		
	Re-vegetation of frontal dunes	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	4			0			1			1		
	Building location/design regulations	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	5			3			2			3		
	Light pollution reduction	YES, NO, N/A	EXCELLENT, GOOD, LOW, UNKNOWN	# = Y + E + G	5			2			2			2		
1.6.2	Has your country undertaken any evaluation of its nest and beach management programs? [SAP] YES NO NOT APPLICABLE			# = Y + E + G	4			3			3			5		
<b>OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS</b>																
2.1	Measures to protect and conserve marine turtle habitats							WIO			NWIO			NIO		SEA
2.1.2	Are assessments routinely made of the environmental impact of marine and coastal development on marine turtles and their habitats? [IND, SAP] YES NO NOT APPLICABLE			# = Y   N	6	2		5	1		3	2		3	4	
2.1.3	Is marine water quality (including marine debris) monitored near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken. [SAP] YES NO NOT APPLICABLE			# = Y   N	2	3		5	1		3	2		4	3	

2.1.4	Are measures in place to prohibit the use of poisonous chemicals and explosives? [SAP] YES NO NOT APPLICABLE	# = Y   N	7	0	7	0	4	1	5	0
<b>2.2 Rehabilitation of degraded marine turtle habitats</b>			WIO		NWIO		NIO		SEA	
2.2.1	Are efforts being made to recover degraded coral reefs? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc). [IND, SAP] YES NO NOT APPLICABLE (no degraded coral reefs)	# = Y   N	3	2	3	3	4	1	5	2
2.2.2	Are efforts being made to recover degraded mangrove habitats that are important for turtles?	# = Y   N	4	1	4	0	4	1	6	1
2.2.3	Are efforts being made to recover degraded sea grass habitats? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.). [IND, SAP] YES NO NOT APPLICABLE (no degraded sea grass habitats)	# = Y   N	3	2	1	5	2	3	4	3
<b>Objective III: IMPROVING UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS</b>										
3.1	Studies on marine turtles and their habitats		WIO		NWIO		NIO		SEA	
3.1.2	Have long-term monitoring programs (i.e. of at least 10 years duration) been initiated or planned for priority marine turtle populations frequenting the territory of your country? [IND, BPR] YES NO UNSURE Please give details of the nature, duration and continuity of these programs.	# = Y   N	7	1	6	1	5	0	7	0
3.1.3	Has the genetic identity of marine turtle populations in your country been characterised? [INF, PRI] YES NO UNSURE Please give details (e.g. which species, which populations?).	# = Y   N	5	3	1	5	2	3	6	1

3.1.4	Which of the following methods have been or are being used to try to identify migration routes of turtles? Use the text boxes to provide additional details. [INF, PRI]				WIO		NWIO		NIO		SEA	
	a) Tagging YES NO	# = Y   N	7	1	6	1	5	0	7	0		
	b) Satellite tracking YES NO	# = Y   N	4	4	2	5	4	1	7	0		
3.1.5	Have studies been carried out on marine turtle population dynamics and survival rates (e.g. including studies into the survival rates of incidentally caught and released turtles)? [INF, PRI] YES NO UNSURE	# = Y   N	3	4	5	2	3	2	3	3		
3.1.6	Has research been conducted on the frequency and pathology of diseases in marine turtles? [INF, PRI] YES NO UNSURE	# = Y   N	3	4	1	6	0	4	4	3		
3.1.7	Is the use of traditional ecological knowledge in research studies being promoted? [BPR, PRI] YES NO NOT APPLICABLE	# = Y   N	7	0	4	2	4	1	2	3		
3.2.2	On which of the following themes have <i>collaborative</i> studies and monitoring been conducted? Use the text boxes to describe the nature of this international collaboration or to clarify your response. Answer 'NO' if the studies/monitoring undertaken do not involve <i>international</i> collaboration. [INF, PRI]				WIO		NWIO		NIO		SEA	
	a) Genetic identity YES, NO, NOT APPLICABLE	# = Y   N	6	1	1	3	0	3	5	2		
	b) Conservation status YES, NO, NOT APPLICABLE	# = Y   N	4	2	1	4	1	3	4	2		
	c) Migrations YES, NO, NOT APPLICABLE	# = Y   N	6	1	3	2	2	2	6	0		
	d) Other biological and ecological aspects YES, NO, NOT APPLICABLE	# = Y   N	5	2	1	4	1	3	3	1		
3.3	Data analysis and applied research											



5.1.1	Has your country undertaken a national review of its compliance with Convention on International Trade in Endangered Species (CITES) obligations in relation to marine turtles? [SAP] YES NO NOT APPLICABLE	# = Y   N	4	2	2	2	3	1	5	1
5.1.2	Does your country have, or participate/cooperate in, CITES training programs for relevant authorities? [SAP] YES NO NOT APPLICABLE	# = Y   N	5	0	3	4	4	1	6	1

5.2.3		Please indicate, from your country's standpoint, the extent to which the following <i>local</i> management issues require <i>international</i> cooperation in order to achieve progress. [PRI] In other words, how important is international cooperation for addressing these issues?									
			WIO		NWIO		NIO		SEA		
1	Habitat studies ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	4	3	2	1	1	3	5	0	
2	Identification of migration routes ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	4	1	2	0	1	2	3	
3	Training / capacity-building ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	4	0	4	2	2	3	1	
3	Genetics studies ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	3	1	2	0	3	2	2	
4	Illegal fishing in territorial waters ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	2	0	2	1	1	3	2	
4	Enforcement/patrolling of territorial waters ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	4	2	2	3	1	1	0	4	
4	Tagging / satellite tracking ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	3	5	1	0	2	0	3	
5	Identification of turtle populations ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	4	3	1	3	3	1	2	3	
6	Development of gear technology ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	3	2	1	1	2	2	2	2	
6	Oil spills, pollution, marine debris ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	5	1	2	1	2	2	1	4	
7	Incidental capture by foreign fleets ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E   I	5	2	4	1	2	2	1	4	

7	Hunting/harvest by neighboring countries	ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E I I	5	1	2	2	1	3	1	4
8	Alternative livelihood development	ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E I I	6	1	2	3	3	1	5	1
9	Poaching, illegal trade in turtle products	ESSENTIAL, IMPORTANT, LIMITED, NOT AT ALL	# = E I I	5	1	0	6	2	1	2	3

**Table 3. IOSEA Regional Summary**

OBJECTIVE 1: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY																			
1.3.2	Which of these adverse economic incentives are underlying threats to marine turtles in your country? [TSH]																		
		Y	N	NA	B	n	Raw Rank	(Y)/(n-B) = Rank											
	High prices commended by from turtle products relative to other commodities	YES	NO	5	1	0	22	28	3	0.83	2	High 'Y' ==> Identification of ' Need' /' Problem'							
	Lack of affordable alternatives to turtle products	YES	NO	5	1	0	22	28	3	0.83	2								
	Ease of access to the turtle resource (eg. by virtue of proximity or ease of land/water access)	YES	NO	14	0	0	14	28	1	1.00	1								
	Low cost of land near nesting beaches	YES	NO	4	1	0	23	28	4	0.80	3								
	Low penalties against illegal harvesting	YES	NO	11	0	0	17	28	2	1.00	1								
High 'Y' ==> Identification of ' Need' /' Problem'										High 'Effort' ==> Identification of ' Need' /' Problem'		High 'Impact' ==> Identification of ' Need' /' Problem'							
1.4.1	Indicate, and describe in more detail, the main fisheries occurring in the waters of your country, as well as any high seas fisheries in which flag vessels of your country participate and interact with marine turtles.																		
		Y	N	NA	B	n	Raw Rank	(Y)/(n-B) = Rank											
1.4.1	a) Shrimp trawls	YES	NO	20	7	0	1	28	3	0.74	2								
1.4.2	Fishing effort: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	8	6	4	4	1	5	28	0.64	1	Effort
1.4.2	Perceived impact: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	9	5	4	2	2	6	28	0.70	1	Impact
1.4.1	b) Set gill nets	YES	NO	24	3	0	1	28	2	0.89	1								
1.4.2	Fishing effort: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	3	8	6	1	5	5	28	0.61	2	Effort
1.4.2	Perceived impact: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	3	8	6	1	5	5	28	0.61	2	Impact
1.4.1	c) Anchored Fish Aggregating Devices (FADs)	YES	NO	9	12	1	6	28	5	0.41	5								
1.4.2	Fishing effort:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	0	4	1	9	6	8	28	0.29	6	Effort
1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	0	1	2	10	7	8	28	0.08	6	Impact
1.4.1	d) Purse seine (with or without FADs)	YES	NO	17	7	0	4	28	4	0.71	3								
1.4.2	Fishing effort:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	1	6	4	3	5	9	28	0.50	4	Effort
1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	0	2	6	3	7	10	28	0.18	5	Impact
1.4.1	e) Longline (shallow or deepset)	YES	NO	25	3	0	0	28	1	0.89	1								
1.4.2	Fishing effort:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	3	10	9	2	1	3	28	0.54	3	Effort
1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	3	6	6	2	8	3	28	0.53	3	Impact
1.4.1	f) Driftnet	YES	NO	13	13	0	2	28	5	0.50	4								
1.4.2	Fishing effort:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Effort	0	7	3	6	2	10	28	0.44	5	Effort
1.4.2	Perceived impact:RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN								Impact	2	3	3	5	5	10	28	0.38	4	Impact
1.4.4	Which of the following methods are used by your country to minimise incidental capture/mortality of marine turtles in fishing activities? [IND]																		
		Y	N	NA	B	n	Raw Rank	(N)/(n-B) = Rank											
	a) Appropriate handling of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	15	7	3	3	28	5	0.28	6	High ' N ' ==> Identifies ' Need '								
	b) Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness)	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	9	10	9	0	28	3	0.36	5									
	c) Measures to avoid encirclement of marine turtles in purse seine fisheries	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	4	13	9	2	28	2	0.50	2									
	d) Appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	7	9	7	5	28	4	0.39	4									
	e) Monitoring and recovery of fish aggregating devices (FADs)	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	7	10	7	4	28	3	0.42	3									
	f) Net retention and recycling schemes	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	3	14	6	5	28	1	0.61	1									
	g) Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities)	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	18	5	4	1	28	6	0.19	7									
	h) Effort management control	YES, NO, UNDER INVESTIGATION, NOT APPLICABLE	14	4	6	4	28	7	0.17	8									

1.4.5	Which of the following programmes has your country developed - in consultation with the fishing industry and fisheries management organisations - to promote implementation of measures to minimise incidental capture and mortality of turtles in national waters and in the high seas?							Raw Rank	(N)/(n-B) = Rank		High ' N ' ==> Identifies ' Need '								
		Y	N	NA	B	n	Rank												
	a) Onboard observer programmes YES, NO, NOT APPLICABLE	13	9	3	3	28	2	0.36	2	High ' N ' ==> Identifies ' Need '									
	b) Vessel monitoring systems YES, NO, NOT APPLICABLE	10	11	2	5	28	1	0.48	1										
	c) Inspections (i.e. at sea, in port, at landing sites) YES, NO, NOT APPLICABLE	22	2	1	3	28	4	0.08	5										
	d) Training programmes / workshops to educate fishers YES, NO, NOT APPLICABLE	26	2	0	0	28	3	0.07	3										
	e) Informative videos, brochures, printed guidelines etc. YES, NO, NOT APPLICABLE	21	3	0	4	28	4	0.13	4										
<b>1.5 Addressing harvest of, and trade in, marine turtles; and protection of habitat</b>																			
High ' Y ' ==> Identifies ' Need '      High ' H ', ' H+M ' ==> " Need "																			
1.5.2	Which, among the following list, are economic uses and cultural values of marine turtles in your country? [INF] RELATIVE PREVALENCE / IMPORTANCE							Raw Rank	(Y)/(n-B) = Rank		H M L UK n		(H+M)/(n-u) Rank	=Y+H+M Rank					
		Y	N	NA	B	n	Rank			H	M	L	UK	n					
	Meat consumption YES, NO HIGH, MODERATE, LOW, UNKNOWN	7	8	0	0	15	2	0.47	1	2	4	7	0	13	28	0.46	4	13	2
	Egg consumption YES, NO HIGH, MODERATE, LOW, UNKNOWN	6	7	0	0	13	3	0.46	2	2	7	6	0	15	28	0.60	3	15	1
	Shell products YES, NO HIGH, MODERATE, LOW, UNKNOWN	5	13	0	0	18	4	0.28	5	1	1	8	0	10	28	0.20	6	7	5
	Fat consumption YES, NO HIGH, MODERATE, LOW, UNKNOWN	4	18	0	0	22	5	0.18	7	0	1	5	0	6	28	0.17	7	5	6
	Traditional medicine YES, NO HIGH, MODERATE, LOW, UNKNOWN	8	12	0	0	20	1	0.40	3	0	2	6	0	8	28	0.25	5	10	3
	Eco-tourism programmes YES, NO HIGH, MODERATE, LOW, UNKNOWN	5	10	0	0	15	4	0.33	4	3	7	3	0	13	28	0.77	1	15	1
	Cultural / traditional significance YES, NO HIGH, MODERATE, LOW, UNKNOWN	3	13	0	1	17	6	0.19	6	3	4	3	1	11	28	0.70	2	10	4
<b>1.5.3 Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. [IND, TSH]</b>																			
(RH + M)/(n-B) = Rank																			
	Level of harvest: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN	3	8	8	4	1	4	28	0.46	1	High ' H ', ' H+M ' ==> " Need "								
	Impact of harvest: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE, UNKNOWN	2	8	6	5	3	4	28	0.42	2									
High ' N ' ==> Identifies ' Need '      High ' L ' ==> " Need "																			
1.6.1	First, tick one of the boxes at left to indicate whether or not your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and nesting females. If yes, then estimate the relative effectiveness of these measures. [IND, SAP] RELATIVE EFFECTIVENESS							Raw Rank	(N)/(n-B) = Rank		E G L UK B n		(L)/(n-B) Rank	=N+L Rank					
		Y	N	NA	B	n	Rank			E	G	L	UK	B	n				
	Monitoring/protection programmes YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	5	1	1	2	9	7	0.14	7	2	11	5	1	2	19	0.29	6	6	6
	Education/awareness programmes YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	6	2	0	2	10	6	0.25	6	2	13	2	1	2	18	0.13	8	4	7
	Egg relocation/hatcheries YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	4	5	3	2	14	5	0.42	5	1	10	2	0	2	13	0.18	7	7	5
	Predator control YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	2	6	4	3	15	4	0.50	4	0	7	4	2	3	13	0.40	3	10	3
	Vehicle / access restrictions YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	3	5	4	2	14	5	0.42	5	1	6	6	1	2	14	0.50	2	11	2
	Removal of debris / clean-up YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	5	2	1	3	11	6	0.25	6	2	10	4	1	3	17	0.29	6	6	6
	Re-vegetation of frontal dunes YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	2	8	5	4	19	2	0.53	3	1	3	4	1	4	9	0.80	1	12	1
	Building location/design regulations YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	5	7	0	4	16	3	0.58	2	3	5	3	1	4	12	0.38	4	10	4
	Light pollution reduction YES, NO, N/A EXCELLENT, GOOD, LOW, UNKNOWN	4	9	1	4	18	1	0.64	1	1	6	2	1	4	10	0.33	5	11	2
High ' N ' ==> Identifies ' Need '      High ' N ' ==> Identifies ' Need '																			
1.6.2	Has your country undertaken any evaluation of its nest and beach management programmes? [SAP] YES NO NOT APPLICABLE	Y	N	NA	B	n		(N)/(n-B) =											
		15	6	3	3	27		0.25											

OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS										
2.1 Measures to protect and conserve marine turtle habitats		Y	N	NA	B	n	Raw Rank	(N)/(n-B) =	Rank	
2.1.2	Are assessments routinely made of the environmental impact of marine and coastal development on marine turtles and their habitats? [IND, SAP] YES NO NOT APPLICABLE	17	9	1	1	28	1	0.33	2	High ' N ' ==> Identifies ' Need '
2.1.3	Is marine water quality (including marine debris) monitored near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken. [SAP] YES NO NOT APPLICABLE	14	9	3	2	28	1	0.54	1	
2.1.4	Are measures in place to prohibit the use of poisonous chemicals and explosives? [SAP] YES NO NOT APPLICABLE	23	1	0	4	28	2	0.96	3	
2.2 Rehabilitation of degraded marine turtle habitats		Y	N	NA	B	n	Raw Rank	(N)/(n-B) =	Rank	
2.2.1	Are efforts being made to recover degraded coral reefs? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc). [IND, SAP] YES NO NOT APPLICABLE (no degraded coral reefs)	15	8	3	2	28	2	0.31	2	High ' N ' ==> Identifies ' Need '
2.2.2	Are efforts being made to recover degraded mangrove habitats that are important for turtles?	18	3	5	2	28	3	0.12	3	
2.2.3	Are efforts being made to recover degraded sea grass habitats? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc). [IND, SAP] YES NO NOT APPLICABLE (no degraded sea grass habitats)	10	13	2	3	28	1	0.52	1	
Objective III: IMPROVING UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS										
3.1 Studies on marine turtles and their habitats		Y	N	U	B	n	Raw Rank	(N)/(n-B) =	Rank	
3.1.2	Have long-term monitoring programmes (i.e. of at least 10 years duration) been initiated or planned for priority marine turtle populations frequenting the territory of your country? [IND, BPR] YES NO UNSURE Please give details of the nature, duration and continuity of these programmes.	25	2	0	1	28	1	0.07	2	High ' N ' ==> Identifies ' Need '
3.1.3	Has the genetic identity of marine turtle populations in your country been characterised? [INF, PRI] YES NO UNSURE Please give details (e.g. which species, which populations?).	14	12	0	2	28	2	0.46	1	
3.1.4	Which of the following methods have been or are being used to try to identify migration routes of turtles? Use the text boxes to provide additional details. [INF, PRI]	Y	N	U	B	n	Raw Rank	(Y)/(n-B) =	Rank	
	a) Tagging YES NO	25	2	0	1	28	1	0.93	1	High ' Y ' ==> Identifies ' Methods used '
	b) Satellite tracking YES NO	17	10	0	1	28	2	0.63	2	
3.1.5	Have studies been carried out on marine turtle population dynamics and survival rates (e.g. including studies into the survival rates of incidentally caught and released turtles)? [INF, PRI] YES NO UNSURE	14	11	1	2	28	2	0.42	2	High ' N ' ==> Identifies ' Need '
3.1.6	Has research been conducted on the frequency and pathology of diseases in marine turtles? [INF, PRI] YES NO UNSURE	8	17	1	2	28	1	0.65	1	
3.1.7	Is the use of traditional ecological knowledge in research studies being promoted? [BPR, PRI] YES NO NOT APPLICABLE	17	6	2	3	28	3	0.24	3	



**Table 4. Species in need of priority conservation action identified by IOSEA Signatory States based on information supplied in section 3.3.1 of the Country Reports.**

<b>3.3 Data analysis and applied research List, in order of priority, the marine turtle populations in your country in need of conservation actions, and indicate their population trends.</b>							
<b>IOSEA Sub-Region</b>	<b>Country</b>	<b>CC</b>	<b>LO</b>	<b>CM</b>	<b>EI</b>	<b>DC</b>	<b>ND</b>
WIO	Comoros			1	2		
	Kenya		3	1	2		
	Madagascar	1		2	4	3	
	Mauritius			1	2		
	Mozambique		3	1	2		
	Seychelles			1	2		
	Somalia						
	South Africa	2		3		1	
	United Republic of Tanzania			2	1		
	NWIO	Bahrain			1	2	
Djibouti							
Egypt							
Eritrea		4	3	2	1	4	
Islamic Republic of Iran				1	2		
Jordan				2	1		
Kuwait							
Oman							
Qatar							
Saudi Arabia				1	2		
Sudan							
United Arab Emirates				2	1		
Yemen				1	2		
NIO	Bangladesh			2	1		
	India		1	4	3	2	
	Maldives			1	2		

	Myanmar						
	Pakistan						
	Sri Lanka	3	5	4	1	2	
	Thailand		1	3	2		
SEA	Brunei Darussalam						
	Cambodia						
	Indonesia			1		2	
	Malaysia		2	3	4	1	
	Papua New Guinea					1	
	Philippines		2	1			
	Timor Leste						
	Viet Nam	1	3	5	4	2	

**Appendix I. Comments on Questions posed as the basis of the Country Reports**

The comments are meant to indicate the need for additional information or the inclusion of a relative scale to better define the answers to the questions.

<b>OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY</b>		<b>Comments</b>
<b>1.3.2</b>	<b>Which of these adverse economic incentives are underlying threats to marine turtles in your country? [TSH]</b>	
	<b>High prices commended by from turtle products relative to other commodities</b> " YES " NO	
	<b>Lack of affordable alternatives to turtle products</b> " YES " NO	<b>Limited list</b>
	<b>Ease of access to the turtle resource (e.g.. by virtue of proximity or ease of land/water access)</b> " YES " NO	<b>no relativity among answers</b>
	<b>Low cost of land near nesting beaches</b> " YES " NO	<b>needs R H M L additional clarification</b>
	<b>Low penalties against illegal harvesting</b> " YES " NO	
	<b>Other 1</b>	
	<b>Other 2</b>	
<b>1.4 Reduction of incidental capture and mortality</b>		
<b>1.4.1</b>	<b>Indicate, and describe in more detail, the main fisheries occurring in the waters of your country, as well as any high seas fisheries in which flag vessels of your country participate and interact with marine turtles.</b>	<b>All countries need help with</b>
<b>1.4.1</b>	<b>a) Shrimp trawls</b> " YES " NO	
<b>1.4.2</b>	<b>Fishing effort:</b> " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	<b>defining and reporting fisheries documents should be cited</b>
<b>1.4.2</b>	<b>Perceived impact:</b> " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
<b>1.4.1</b>	<b>b) Set gill nets</b> " YES " NO	
<b>1.4.2</b>	<b>Fishing effort:</b> " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	<b>All questions should have the same format of relative terms</b>

1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	Y/N separate from RH M RL N
1.4.1	<i>c) Anchored Fish Aggregating Devices (FADs)</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	Perceived by whom?
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.1	<i>d) Purse seine (with or without FADs)</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.1	<i>e) Longline (shallow or deepset)</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.1	<i>f) Driftnet</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.1	<i>g) Other2 (from 1.4.1):</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.1	<i>h) Other2 (from 1.4.1):</i> " YES " NO	
1.4.2	Fishing effort: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	
1.4.2	Perceived impact: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN	

	<b>UNKNOWN</b>	
<b>1.4.4</b>	<b>Which of the following methods are used by your country to minimise incidental capture/mortality of marine turtles in fishing activities? [IND]</b>	<b>defining and documenting illegal fishing</b>
	<b>a) Appropriate handling of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets) YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>All need supporting documentation and citations</b>
	<b>b) Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness) YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>handling of incidentally caught turtles</b>
	<b>c) Measures to avoid encirclement of marine turtles in purse seine fisheries YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>TEDs</b>
	<b>d) Appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>to avoid encirclement of marine turtles in purse seine</b>
	<b>e) Monitoring and recovery of fish aggregating devices (FADs) YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>hook design and use</b>
	<b>f) Net retention and recycling schemes YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	
	<b>g) Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities) YES NO UNDER INVESTIGATION or NOT APPLICABLE</b>	<b>to reduce 'ghost net' fishing</b>
	<b>h) Effort management control YES NO NOT APPLICABLE</b>	
	<b>Other</b>	
<b>1.4.5</b>	<b>Which of the following programs has your country developed - in consultation with the fishing industry and fisheries management organisations - to promote implementation of measures to minimise incidental capture and mortality of turtles I national waters and in the high seas?</b>	<b>answers imply but without documentation or relativity scale, effectiveness is not captured</b>
	<b>a) Onboard observer programs YES NO NOT APPLICABLE</b>	<b>Details are lacking for all</b>
	<b>b) Vessel monitoring systems YES NO NOT APPLICABLE</b>	
	<b>c) Inspections (i.e. at sea, in port, at landing sites) YES NO NOT APPLICABLE</b>	
	<b>d) Training programs / workshops to educate fishers YES NO NOT</b>	

	APPLICABLE		
	e) Informative videos, brochures, printed guidelines etc. " YES " NO " NOT APPLICABLE		
	Other		
<b>1.5 Addressing harvest of, and trade in, marine turtles; and protection of habitat</b>			
<b>1.5.2</b>	<b>Which, among the following list, are economic uses and cultural values of marine turtles in your country? [INF] RELATIVE PREVALENCE / IMPORTANCE</b>		
	Meat consumption " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		Methods need clarification: How to survey to determine these
	Egg consumption " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
	Shell products " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		Requires question that separates answers between yes/n and level of use
	Fat consumption " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
	Traditional medicine " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
	Eco-tourism programs " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
	Cultural / traditional significance " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
	Other (list and rank): " YES " NO " HIGH " MODERATE " LOW " UNKNOWN		
<b>1.5.3</b>	<b>Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. [IND, TSH]</b>		
	Level of harvest: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN		Methods need clarification: How to survey to determine these
	Impact of harvest: " RELATIVELY HIGH " MODERATE " RELATIVELY LOW " NONE " UNKNOWN		4 level relative scale

1.6.1	First, tick one of the boxes at left to indicate whether or not your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and nesting females. If yes, then estimate the relative effectiveness of these measures. [IND, SAP] RELATIVE EFFECTIVENESS		
	Monitoring/protection programs GOOD " YES " NO " N/A " EXCELLENT " " LOW " UNKNOWN		Methods need clarification: how to gather this information
	Education/awareness programs GOOD " YES " NO " N/A " EXCELLENT " " LOW " UNKNOWN		
	Egg relocation/hatcheries " YES " NO " N/A " EXCELLENT " GOOD " LOW " UNKNOWN		Requires question that separates answers between yes/n and level of use
	Predator control " YES " NO " N/A " EXCELLENT " GOOD " LOW " UNKNOWN		3 level relative scale
	Vehicle / access restrictions " YES " NO " N/A " EXCELLENT " GOOD " LOW " UNKNOWN		
	Removal of debris / clean-up " YES " NO " N/A " EXCELLENT " GOOD " LOW " UNKNOWN		
	Re-vegetation of frontal dunes GOOD " YES " NO " N/A " EXCELLENT " " LOW " UNKNOWN		
	Building location/design regulations GOOD " YES " NO " N/A " EXCELLENT " " LOW " UNKNOWN		
	Light pollution reduction " YES " NO " N/A " EXCELLENT " GOOD " LOW " UNKNOWN		
1.6.2	Has your country undertaken any evaluation of its nest and beach management programs? [SAP] YES " NO " NOT APPLICABLE		Y sounds good but standard for evaluation needs to be identified
			N implies needs
<b>OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS</b>			
<b>2.1 Measures to protect and conserve marine turtle habitats</b>			
2.1.2	Are assessments routinely made of the environmental impact of marine and coastal development on marine turtles and their habitats? [IND, SAP] " YES " NO " NOT APPLICABLE		Habitat Assessment

2.1.3	Is marine water quality (including marine debris) monitored near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken. [SAP] " YES " NO " NOT APPLICABLE	Methods need to be identified
2.1.4	Are measures in place to prohibit the use of poisonous chemicals and explosives? [SAP] " YES " NO " NOT APPLICABLE	What measures
<b>2.2 Rehabilitation of degraded marine turtle habitats</b>		
2.2.1	Are efforts being made to recover degraded coral reefs? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.). [IND, SAP] " YES " NO " NOT APPLICABLE (no degraded coral reefs)	habitat rehab
2.2.2	Are efforts being made to recover degraded mangrove habitats that are important for turtles?	
2.2.3	Are efforts being made to recover degraded sea grass habitats? If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.). [IND, SAP] " YES " NO " NOT APPLICABLE (no degraded sea grass habitats)	
<b>OBJECTIVE III: IMPROVING UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS</b>		
<b>3.1 Studies on marine turtles and their habitats</b>		
3.1.2	Have <i>long-term</i> monitoring programs (i.e. of at least 10 years duration) been initiated or planned for priority marine turtle populations frequenting the territory of your country? [IND, BPR] " YES " NO " UNSURE Please give details of the nature, duration and continuity of these programs.	documents & reports should be cited
3.1.3	Has the genetic identity of marine turtle populations in your country been characterized? [INF, PRI] " YES " NO " UNSURE Please give details (e.g. which species, which populations?).	
3.1.4	Which of the following methods have been or are being used to try to identify migration routes of turtles? Use the text boxes to provide additional details. [INF, PRI]	
	a) Tagging " YES " NO	sources of methods
	b) Satellite tracking " YES " NO	
	" Other (list and provide details):	
	" None of the above	

3.1.5	Have studies been carried out on marine turtle population dynamics and survival rates (e.g. including studies into the survival rates of incidentally caught and released turtles)? [INF, PRI] " YES " NO " UNSURE	documents & reports should be cited
3.1.6	Has research been conducted on the frequency and pathology of diseases in marine turtles? [INF, PRI] " YES " NO " UNSURE	documents & reports should be cited
3.1.7	Is the use of traditional ecological knowledge in research studies being promoted? [BPR, PRI] YES " NO " NOT APPLICABLE	documents & reports should be cited
<b>3.2 Collaborative research and monitoring</b>		
3.2.2	On which of the following themes have <i>collaborative</i> studies and monitoring been conducted? Use the text boxes to describe the nature of this international collaboration or to clarify your response. Answer 'NO' if the studies/monitoring undertaken do not involve <i>international</i> collaboration. [INF, PRI]	
	a) Genetic identity " YES " NO " NOT APPLICABLE	documents & reports should be cited
	b) Conservation status " YES " NO " NOT APPLICABLE	documents & reports should be cited
	c) Migrations " YES " NO " NOT APPLICABLE	documents & reports should be cited
	d) Other biological and ecological aspects " YES " NO " NOT APPLICABLE	documents & reports should be cited
<b>3.3 Data analysis and applied research</b>		
3.3.1	List, in order of priority, the marine turtle populations in your country in need of conservation actions, and indicate their population trends. [PRI]	Based on what criteria?
3.3.2	Are research and monitoring activities, such as those described above in Section 3.1, periodically reviewed and evaluated for their efficacy? [SAP] " YES " NO " UNSURE	Which methods?
<b>OBJECTIVE IV: INCREASE PUBLIC AWARENESS OF THE THREATS TO MARINE TURTLES AND THEIR HABITATS, AND ENHANCE PUBLIC PARTICIPATION IN CONSERVATION ACTIVITIES</b>		
<b>4.1 Public education, awareness and information programs</b>		
4.1.2	Which of the following groups have been the targets of these focused education and awareness programs described in above in Section 4.1.1? [PRI, INF]	
	Policy makers " YES " NO " UNSURE	who has received training? Number? Evaluation of training and follow up need to be defined

	Fishing industry " NO " UNSURE	" YES	
	Local/Fishing communities " YES " NO " UNSURE		who needs training
	Indigenous groups YES " NO " UNSURE	"	
	Tourists " UNSURE	" YES " NO	Y implies at least some training has occurred but
	Media " UNSURE	" YES " NO	no details are elicited
	Teachers " UNSURE	" YES " NO	
	Students " UNSURE	" YES " NO	
	Military, Navy, Police YES " NO " UNSURE	"	
	Scientists " UNSURE	" YES " NO	
	Other (describe):		
	None of the above		
<b>OBJECTIVE V: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION</b>			
<b>5.1 Collaboration with, and assistance to, signatory and non-signatory States</b>			
5.1.1	Has your country undertaken a national review of its compliance with Convention on International Trade in Endangered Species (CITES) obligations in relation to marine turtles? [SAP] " YES " NO " NOT APPLICABLE		Based on which standards
5.1.2	Does your country have, or participate/cooperate in, CITES training programs for relevant authorities? [SAP] " YES " NO " NOT APPLICABLE		
<b>5.2 Prioritization, development and implementation of national action plans</b>			
5.2.2	From your country's perspective, which conservation and management activities, and/or which particular sites or locations, ought to be among the highest priorities for action?		

	(List up to 10 activities from the IOSEA Conservation and Management Plan). [PRI]		
5.2.3	Please indicate, from your country's standpoint, the extent to which the following <i>local</i> management issues require <i>international</i> cooperation in order to achieve progress. [PRI] In other words, how important is international cooperation for addressing these issues?		
	Illegal fishing in territorial waters NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “	need to identify methods used to assess these
	Incidental capture by foreign fleets “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED	Need to identify data source(s) of each
	Enforcement/patrolling of territorial waters LIMITED “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “	outcome of studies
	Hunting/harvest by neighboring countries LIMITED “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “	Follow up action needs to be clarified
	Poaching, illegal trade in turtle products LIMITED “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “	
	Development of gear technology NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “	
	Oil spills, pollution, marine debris NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “	
	Training / capacity-building AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “ NOT	
	Alternative livelihood development “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED	
	Identification of turtle populations “ NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED	
	Identification of migration routes NOT AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “	
	Tagging / satellite tracking AT ALL	“ ESSENTIAL “ IMPORTANT “ LIMITED “ NOT	
	Habitat studies	“ ESSENTIAL “ IMPORTANT “ LIMITED “ NOT AT ALL	

	Genetics studies	“ ESSENTIAL “ IMPORTANT “ LIMITED “ NOT AT ALL	
<b>5.3 Cooperation and information exchange</b>			
5.3.1	Identify existing frameworks/organisations that are, or could be, useful mechanisms for cooperating in marine turtle conservation at the sub-regional level. Please comment on the strengths of these instruments, their capacity to take on a broader coordinating role, and any efforts your country has made to enhance their role in turtle conservation. [INF, BPR]		cite the report / plan / documents
5.3.2	Has your country developed, or is it participating in, any networks for cooperative management of shared turtle populations? [BPR, INF] “ YES “ NO “ NOT APPLICABLE		cite the report / plan / documents
5.3.3	What steps has your country taken to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within Exclusive Economic Zones (EEZs) and on the high seas? Please describe the interventions made in this regard, referring to specific RFBs. [SAP]		cite the report / plan / documents
<b>5.4 Capacity-building</b>			cite the report / plan / documents
5.4.1	Describe your country’s needs, in terms of human resources, knowledge and facilities, in order to build capacity to strengthen marine turtle conservation measures. [PRI]		cite the report / plan / documents
5.4.2	Describe any training provided in marine turtle conservation and management techniques (e.g. workshops held, training manuals produced etc.), and indicate your plans for the coming year. [PRI, INF]		cite the report / plan / documents
5.4.3	Specifically in relation to capacity-building, describe any partnerships developed or planned with universities, research institutions, training bodies and other relevant organisations. [BPR]		cite the report / plan / documents
<b>5.5 Enforcement of conservation legislation</b>			cite the report / plan / documents

5.5.1	National policies and laws concerning the conservation of marine turtles and their habitats will have been described in Section 1.5.1. Please indicate their effectiveness, in terms of their practical application and enforcement. [SAP, TSH]	cite the report / plan / documents
5.5.2	Has your country conducted a review of policies and laws to address any gaps, inconsistencies or impediments in relation to marine turtle conservation? If not, indicate any obstacles encountered in this regard and when this review is expected to be done. [SAP]    " YES    " NO    " UNSURE	cite the report / plan / documents
5.5.3	From the standpoint of law enforcement, has your country experienced any difficulties achieving cooperation to ensure compatible application of laws across and between jurisdictions? [TSH]    " YES    " NO    " UNSURE	Identify problems