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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OVERVIEW OF IOSEA MOU IMPLEMENTATION

SYNTHESIS OF NATIONAL REPORTS AS AT 31 JULY 2008

Introduction

Signatory States to the *Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia* are encouraged to submit an annual report describing their implementation of the Memorandum. A standard reporting template and an Online Reporting Facility were developed to enable Signatory States to submit their reports through the internet and to revise them at their convenience, whenever new information comes to light.

The present document builds on the comprehensive analysis prepared in 2006 of the measures put in place by Governments to conserve marine turtles and their habitats of the Indian Ocean and South-East Asia region. Almost all of the 27 IOSEA Signatory States have supplied information to contribute to the analysis. Though these reports are not all complete, and the quality of the information provided varies from one country to another, one can nevertheless gain a fairly broad understanding of strengths and weaknesses in reporting and implementation across this vast region.

The inherent value of such a detailed analysis is that it allows one to go well beyond the typical exercise of reporting, simply for the sake of reporting. It sets a benchmark against which to measure future progress. It points to areas in which little progress in implementation has been made and where more attention may need to be focussed, in a prioritised manner. Equally important, it describes exemplary practices that might be extended and replicated in other countries, given the necessary resources and appropriate circumstances. The report also fulfils a basic need to exchange information on what has been and is being done in a number of areas, hopefully with a view to avoiding unnecessary duplication of effort.

Above all, this document aims to move beyond merely reporting activities (*outputs*), and instead to focus more attention on the results (*outcomes*) of any interventions made. This requires a detailed line of questioning, for it is only with exhaustive probing that one can assess the real efficacy of the efforts that are being undertaken. In the end, managers will be judged not only on the actions they have taken, but on whether or not these actions have made a real difference to the long-term survival of marine turtles and the habitats on which they depend.

The conservation and management of marine turtles is clearly not only within the realm of governmental responsibility. Indeed, much of the work on the ground is being conducted by countless nongovernmental organisations scattered across the region. While these efforts are captured, to some extent, in some of the national reports there is likely a considerable volume of important activity that is not adequately reflected in this reporting process. It was suggested at the Fourth Meeting that a separate reporting template be developed for NGO partner organisations. While it was not possible to realise this idea in time for the present meeting, it may warrant reconsideration in the future.

To partially compensate for this deficiency, the IOSEA Projects Database, which can be viewed through the IOSEA website (www.ioseaturtles.org) contains a wealth of information on some 75 projects carried out in over 20 countries of the IOSEA region. While no attempt has been made to integrate the project information, from both non-governmental and governmental sources, in this report, even a cursory review

of the database gives a clear impression of the scope of these other activities. Over time, it is hoped that the IOSEA Marine Turtle MoU will serve as a vehicle for better integration of all of these valuable efforts.

The current reporting template is fundamentally the same as that used in 2006, apart from some minor adjustments (eg. restructuring tick boxes, changing question order, adding 'Not applicable' options etc.). Retaining the same basic template format facilitates comparison of results from one reporting period to the next. Substantial enhancements were introduced to the separate reporting module on Species, Habitats, Threats and Mitigation Measures, and these are described in Document MT-IOSEA/SS.4/Doc. 6.2.

The major subdivisions of the Conservation and Management Plan (i.e. the six main objectives and 24 programmes) have been used to structure the discussion in the following analysis. As in previous meetings, colour-coded matrices have been prepared to illustrate implementation progress in an easily recognizable visual format.

The present paper is divided into three sections: Part I summarizes the overall findings in the form of an Executive Summary, Part II provides more substantial background information from which these conclusions were drawn, and Part III describes the methodology used, including the detailing scoring criteria. An index of common keywords is provided to make it easier to navigate the document and locate issues of particular interest.

Action requested: Signatory States are invited to make use of this document to identify those conservation and management issues that require more in-depth discussion at the meeting and, thereafter collective follow-up action.

Keyword Index for Quick Reference

List of acronyms appearing in the text

ASEAN	Association of Southeast Asian Nations
BIOT	British Indian Ocean Territory
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
CMP	Conservation and Management Plan
EIA	Environmental Impact Assessment
FAD	Fish Aggregating Device
FAO	Food and Agricultural Organization of the United Nations
GCC	Gulf Cooperation Council
GEF	Global Environment Facility
IUCN	The World Conservation Union
IUU	Illegal, Unregulated and Unreported (fishing)
KESCOM	Kenya Sea Turtle Conservation Committee
IOSEA	Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding
PERSGA	Regional Organisation for the Conservation of the Red Sea and Gulf of Aden
RFB	Regional Fishery Body
ROPME	Regional Organisation for the Protection of the Marine Environment
SACEP	South Asia Cooperative Environment Programme
SEAFDEC	Southeast Asian Fisheries Development Center
SWIOFP	South West Indian Ocean Fisheries Project
TCP	Turtle Conservation Project (NGO)
TED	Turtle Excluder Device
TIHPA	Turtle Islands Heritage Protected Area
UNDP	United Nations Development Programme
VMS	Vessel Monitoring System
WCS	Wildlife Conservation Society
WIO-LaB	Project Addressing Land Based Activities in the Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association
WWF	World Wide Fund for Nature

Part I: Executive Summary

General Conclusions

1. The quality of reporting varies considerably across the Signatory States, with a handful of members reporting extensively and in considerable detail, whereas a few countries have so far provided only limited information. The majority of countries fall between these two extremes. At least some information is available for all Signatory States except Saudi Arabia and United Arab Emirates, which have yet to submit a national report.

2. In terms of implementation, the predominant picture that emerges is that of some progress, albeit limited in scope, across the whole spectrum of the IOSEA Conservation and Management Plan. There has been a significant improvement in implementation and or/ reporting since 2006. The colour-coded matrix at Annex 1 gives a visual representation of the extent of this progress for the collective membership[1].

3. Signatory States have done well to articulate examples of best practice approaches to reduce threats to marine turtles and their habitats; to document studies aimed at correcting adverse economic incentives; and to identify and prioritise national management actions. Substantial advances have been made in the reporting of fisheries potentially interacting with turtles as well as measures aimed at reducing incidental capture and mortality; identification of the uses and values of turtles; documentation of domestic legislation and management regimes; conduct of targeted species and habitat studies; and collaborative research and monitoring.

4. The analytical tools developed by the Secretariat have been further refined to allow for the generation of similar matrices for each of the four IOSEA sub-regions (in fact, for any grouping of countries that one might wish to examine). Annexes 1a-d reveal, for the first time, significant differences between the four regional groups. The South-East Asia+ and Western Indian Ocean sub-regions perform equally well, each with overall ratings approaching "good progress". This achievement is indicative of the fact that the Signatories States of both regions have collectively performed well in about a dozen of the CMP's programme areas. The Northern Indian Ocean group, the smallest of the four sub-regions, has not performed as well, having made only limited progress in many areas. The Northwest Indian Ocean appears to have made the fewest advances; however it must be recognised that the results for this sub-region are confounded by the two member States that have not submitted reports and which are expected to demonstrate good progress in many areas.

5. Overall, substantial gaps remain for several crucial programmes. Though considerably improved, better implementation and documentation of measures to reduce incidental capture and mortality is needed. Signatories have yet to adequately articulate resource needs and mobilise resources both for domestic implementation and for overall coordination. All sub-regions would benefit from more cooperative management actions and a more systematic exchange of technical information among Signatory States. Though there is certain to be under-reporting of actual progress in each of these programmes, real weaknesses in implementation likely exist. A common thread running through a number of these programmes is the need to strengthen cooperation among Signatory States which, of course, is the raison d'être of the IOSEA Memorandum of Understanding.

[1] It should be noted that the following analysis does not refer the substantial body of information contained in the IOSEA Online Reporting Facility pertaining to species, habitats, threats and mitigation measures. These site-based data are reviewed separately in document MT-IOSEA/SS.5/Doc. 6.1.

Objective I: Reducing direct and indirect causes of marine turtle mortality

Exemplary approaches / protocols

6. Some noteworthy exemplary approaches for minimising threats to marine turtles and their habitats include: Australia's comprehensive national Recovery Plan and its broad partnership involving Indigenous communities; Bahrain's investigations into sources of turtle mortality; Cambodia's programme to foster cooperation with coastal fishing communities; Eritrea's public awareness initiatives; Kenya's inclusive national sea turtle conservation programme; Philippines' community-based conservation agreements and data-gathering system; Seychelles' stakeholder involvement in nation-wide conservation and monitoring programmes; South Africa's comprehensive monitoring programme and management regime; United Kingdom's successful combination of approaches to help recover turtle populations; United Republic of Tanzania's monitoring, conservation education and community involvement approach; and the United States' standardised nesting and foraging area monitoring protocols.

Socio-economic studies

7. Close to half of the Signatory States[2] report on socio-economic studies or activities that have been conducted among communities that interact with marine turtles and their habitats. Among them: development of community-driven approaches to turtle management in Australia; studies of turtle consumption/use in Bangladesh; assessment of traditional use of marine turtles in Comoros; questionnaire surveys in Eritrea; economic evaluation of turtle tourism in Indonesia; investigations of trade and consumption patterns in Kenya; studies in Pakistan on the dependence of coastal communities on marine ecosystems; an in-depth social and institutional assessment for the Philippines' Turtle Islands; and an evaluation of public attitudes towards turtle conservation and the socio-economic importance of marine resources in Seychelles.

Adverse economic incentives

8. About three-quarters of the Signatory States identified various adverse incentives contributing to turtle mortality – ease of access to the resource, low penalties against illegal harvesting, and lack of affordable alternatives to turtle products being among the most common. A number of other adverse incentives are cited, such as: development activities, uncontrolled tourism, incentives to continue harmful forms of fishing, and black markets. Many Signatories describe steps that are being taken to try to correct adverse economic incentives, among them: Australia's partnership with indigenous communities to address the sustainable harvest of marine turtles; Bahrain's attempts to reduce its shrimp trawl fleet; Iran's efforts to use religious edicts to dissuade consumption of turtle eggs and meat; alternative livelihood programmes in Pakistan and Philippines; development of turtle tourism in Seychelles; South Africa's sustainable livelihoods programme and restrictions on coastal development; and various schemes to involve communities in eco-tourism activities and nest protection.

Fisheries interactions

9. Reporting in relation to fisheries potentially interacting with turtles has improved significantly, compared to 2006. The fisheries described include: shrimp trawls, set gill nets, anchored fish aggregating devices (FADs), purse seines, longlining, driftnets, and other miscellaneous fisheries. The level of information provided for all fisheries, particularly shrimp trawl and set gill net fisheries, has increased markedly. These two fisheries are reported to operate in 77 and 91 percent, respectively, of the Signatories responding; and the level of fishing effort was reported to be "moderate to relatively high" in more than half of those countries. Shrimp trawls are reported by seven Signatory States to have a "relatively high" impact; while set gill nets are reported by 11 Signatory States to have a "moderate to relatively high" impact. The number of Signatories reporting "moderate to relatively high" impacts of longlines was just over 40 percent. Other fisheries, such as purse seines and FADs, were generally

[2] Note: In the Executive Summary only, all references to "the Signatory States" implies: the Signatory States that responded to a particular question, unless noted otherwise.

reported to have relatively less impact on marine turtles. Already, the amount of collective information that can be gleaned from these sections of the national reports is impressive. There is still much room for improvement – in terms of precision and completeness of the responses – but the reports already make a valuable contribution to our understanding of the fisheries that may be interacting with marine turtles. They could eventually serve as a regional contribution towards monitoring of the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations.

10. About two-thirds of the Signatories cite specific examples of illegal fishing in the IOSEA region that may impact marine turtles. Examples include illegal, unregulated and unreported take of turtles, illegal fishing by foreign vessels, illegal trawling and use of gillnets out of season, continued use of explosive and other destructive fishing methods, and across-border poaching in protected areas by foreign longliners and trawlers.

Reduction of incidental capture and mortality

11. Reporting on various measures to minimize incidental capture and mortality has also improved significantly since 2006, however implementation remains insufficient. Ten Signatories have initiated training programmes in appropriate handling of incidentally caught turtles. One-third have initiated programmes requiring the use of devices that allow the escape of marine turtles, but their practical application is variable. Almost 40 percent of the Signatories responding do not presently have by-catch reduction systems for marine turtles in place, but a few of these have undertaken trials or workshops on the relevant technology. Only six report having investigated appropriate combinations of hook design, bait type, gear specifications and fishing practices as means of mitigating by-catch. About two-thirds of the Signatories exercise spatial and temporal control of fishing activities, and a comparable percentage manage fishing effort. However, several point out that these controls are primarily directed at fisheries management and are not specifically intended to address turtle by-catch. About half of the Signatory States have legislative prohibitions against the use of driftnets in national waters. Less clear from most of the responses is the practical enforcement of the legislative measures that are already in place.

12. There is substantial reporting and actual implementation of other fisheries-related programmes that may contribute to minimizing incidental capture and mortality of marine. Over half of the Signatories have some form of onboard observer programme. A comparable percentage report the use of vessel monitoring systems. Nearly all Signatories have systems in place for inspections at ports and landing sites. While these inspections probably have another primary focus, the potential exists for more attention to be given to turtle by-catch through greater cooperation and training. Nearly all Signatories have conducted training for fishers and/or have produced a variety of educational information materials. On the downside, only half of them indicate that they periodically review and evaluate these various mitigation measures and programmes for their efficacy.

Research and development

13. Many of the Signatory States report on interesting research and development activities in support of by-catch reduction. About half of the Signatories have exchanged information and technical assistance internationally in this area. Australia is continuing its research on more effective TEDs and has undertaken major ecological risk assessments of the impacts of fisheries. Bahrain requires shrimp fishermen to report instances of turtle by-catch; while Eritrea has 10 years of detailed data on incidentally caught turtles. Indonesia has conducted interviews with fishermen on tuna longliners and shrimp trawls, and is experimenting with circle hooks and TEDs. Philippines is conducting research on circle and J-hooks, and is collecting data on incidental catch in various coastal gears. French and Spanish fleets operating around Seychelles are working on new drifting FAD designs to reduce by-catch. South Africa is experimenting with drumlines to replace bather protection nets, and with circle hooks on some longline vessels; and is reviewing prawn trawl by-catch impacts. Studies in the United Republic of Tanzania confirm that gillnets, particularly bottom set nets, pose a significant threat to turtles.

Economic uses and cultural values

14. Almost all of the Signatory States list a number of economic uses and cultural values of marine turtles, the most prevalent being meat consumption, followed by eco-tourism benefits, egg consumption and cultural/traditional significance. This meat consumption is generally rated to be of "low to moderate" prevalence. Moderate egg consumption is reported to occur in five Signatories; its importance is either "low" or unrated in about a dozen other countries. Only four Signatory States describe eco-tourism programmes centered on marine turtles, even though this activity is reported to occur at some level in more than half of the Signatories responding. A few interesting examples of cultural/traditional significance are given.

Direct harvest and domestic trade

15. Virtually all of the 24 Signatory States responding have enacted legislation to prohibit direct harvest and domestic trade in marine turtles, their meat, eggs, parts and products – either explicitly or implicitly. Notwithstanding these legislative provisions, traditional consumption of turtle meat and/or eggs occurs in about 75 percent of the Signatory States. Only Bahrain, Jordan, Mauritius, Pakistan, Thailand, United Kingdom and United States report no traditional harvest.

16. Nearly 90 percent of the Signatory States indicate that they have established domestic management programmes that include limits on levels of intentional harvest. Australia is developing a nationally coordinated effort to sustainably manage the harvest of turtles. Indonesia reports on efforts to phase out harvesting, reduce retail sales, and shift egg harvest concessionaires to alternative income sources. In the Philippines' Turtle Islands, an administrative order provides for the conservation of a certain percentage of the eggs collected. In Sri Lanka, former egg collectors are employed as turtle nest protectors at several beaches. Seychelles documents the successive management regimes put in place over the past 100 years, noting that protected areas where all hunting is prohibited have proven to be more effective than 'selective' regulations. In United Republic of Tanzania, involvement of local communities in nest protection, monitoring, data collection and awareness-raising has helped to reduce threats to turtles. Only a few Signatory States have management agreements already in place with their neighbours in relation to sustainable levels of traditional harvest of marine turtles.

Nesting beach management

17. Almost all of the Signatory States report having a suite of measures in place to minimise or reduce the mortality of eggs, hatchlings and nesting females. Nearly 90 percent have monitoring programmes. Debris removal and beach clean-up is practiced in nearly as many Signatory States, but in many cases the frequency and extent of the activities appear to be limited. About 80 percent of the Signatories have education/awareness programmes. About two-thirds have regulations on the location and design of buildings and are working to reduce light pollution. Just over half of the Signatories report using egg relocation and hatcheries as a management tool; while restricting vehicle access and predator control are also practiced by a similar proportion.

18. Signatory States offer subjective self-assessments of the effectiveness these measures. While the exercise may have limited practical value, it gives Signatories an opportunity to identify and describe particularly effective programmes; and also to draw attention to certain elements in need of improvement or perhaps external assistance. About two-thirds of the Signatory States indicate that they have undertaken a recent evaluation of the effectiveness of their nesting beach management programmes. However, a significant number appear not to have incorporated this important review process in their national marine turtle conservation efforts.

Objective II: Protecting, conserving and rehabilitating marine turtle habitats

Critical habitat outside of established protected areas

19. Only a few Signatory States appear to have measures in place to protect critical habitat outside of established protected areas and, indeed, little information is given to suggest that these habitats have so far been clearly identified. In Australia, measures are centred on community-based approaches to sustainable management; while Philippines encourages stakeholder agreements and foresees a "fast track" process for declaring critical habitats which would be quicker than the creation of protected areas. Other initiatives include the declaration of no fishing zones, community participation and awareness, alternative livelihoods, cash incentive and award schemes, eco-tourism and other monitoring activities. The limited level of detail in most of the responses may be a reflection of the difficulty of achieving adequate protection outside of established areas.

Coastal development impacts and mitigation

20. About three-quarters of the Signatory States carry out assessments of the environmental impact of marine and coastal development and other activities; but few report having carried out impact assessments specifically addressing marine turtles. A similar percentage monitor water quality, either generally or in localised areas, though these efforts also tend not to be specific to marine turtle habitat. It is less clear what Signatories have done to actually protect or improve water quality near turtle habitats, including removal of marine debris. Most Signatory States have measures in place to prohibit the use of poisonous chemicals and explosives, however effective enforcement is reported to be problematic in many countries.

21. About two-thirds of the Signatory States are monitoring their coral reefs and/or are making an effort at some level to recover degraded coral habitats. Activities mentioned include monitoring and rehabilitation actions, baseline research and mapping, upgrading of legal protection status, development of recovery plans, relocation of sewage outfalls, reduction of specific threats, and conduct of education and awareness activities. Almost 90 percent of the Signatory States are making some effort to recover degraded mangrove habitats, but the importance of these habitats to marine turtles is generally not mentioned. In contrast, less than half of the Signatories are engaged in sea grass habitat monitoring and recovery, with Australia being the most active.

Objective III: Improving understanding of marine turtle ecology and populations

Research and monitoring

22. Almost all of the Signatory States cite literature relevant to marine turtle research and conservation in their country, ranging from peer-reviewed journals to reports and proceedings of workshops. Many of the lists are quite extensive and provide a good starting point for a more comprehensive bibliography. Most are reported to have long-monitoring programmes in place or planned for priority marine turtle populations. On closer examination, it appears that only about half of the mentioned programmes are of 10 years or longer duration, but there is reason to believe that programmes in several other countries, started in the last 5 years or so, will be extended indefinitely.

23. Australia, Indonesia, Seychelles, Thailand, United Kingdom, United States and Viet Nam all report having carried out or having participated in analyses to characterise the genetic identity of their marine turtle populations. A dozen more Signatories have collected or have contributed samples for use in ongoing research. The extent to which this work is being coordinated is unclear. Consideration should be given to consolidating the results in comprehensive overview document. As a starting point, all Signatories are encouraged to contribute basic details of their genetics work to the Genetics Directory on the IOSEA website.

24. Almost all Signatory States have employed tagging to try to identify migration routes. The IOSEA reporting system offers an ideal platform for consolidating all information on regional tag recoveries. Just over half of the Signatory States have carried out satellite tracking studies, but the

numbers of turtles tracked are relatively small. Some provide information on certain aspects of this work, and a few mention the results obtained, publications, and future planned activities. In general, the information provided is insufficient to assess the efficacy of tagging and satellite tracking studies overall or to help guide the direction of future work. A basic template being developed for the Western Indian Ocean – Marine Turtle Task Force might help to standardise information requirements in this regard.

25. Less than half of the Signatory States report having carried out studies of marine turtle population dynamics and/or survival rates. It is difficult to judge the scientific value of the work undertaken based on the limited information supplied. Australia, South Africa, and United Kingdom appear to have done the most extensive work in this area. Ten Signatory States have carried out some research on the frequency and pathology of diseases of marine turtles, such as fibropapilloma. Australia, Indonesia, and United States appear to have conducted the most rigorous investigations in this regard. About two-thirds of the Signatory States indicate that they are promoting the use of traditional ecological knowledge in research studies; and most provide some additional information on the nature of this collaboration.

Collaborative work

26. About half of the Signatory States are participating in other regional or sub-regional action plans that identify priority research and monitoring needs, and many cite specific examples. Almost three-quarters of the Signatory States report having conducted studies on genetic identity that involved collaboration and partnerships with other countries. Approximately the same number have reportedly undertaken collaborative studies on migration, often involving tagging and satellite tracking. In general, the quality and amount of detail in the responses in these sections vary greatly, making it difficult to interpret the information provided.

Priority species/populations

27. Most of the Signatories give a list of priority species/populations in need of conservation action and about two-thirds include census or trend data in support of their selection. **Green turtles** figure high on the list of 11 Signatories: Bahrain, Bangladesh, Comoros, Eritrea, Indonesia, Islamic Republic of Iran, Jordan, Mauritius, Philippines, Seychelles, and United Kingdom. **Hawksbill turtles** figure high in the list of 7 Signatories: Bahrain, Bangladesh, Islamic Republic of Iran, Jordan, Seychelles, Sri Lanka, and United Kingdom; **Leatherback turtles** figure high in the list of 6 Signatories: India, Indonesia, South Africa, Sri Lanka, Thailand and Viet Nam. **Olive ridley turtles** figure high on the list of 4 Signatories: Eritrea, India, Philippines, and Thailand. **Loggerhead turtles** figure high on the list of three Signatories: Madagascar, South Africa and Viet Nam.

Practical application and communication of research results

28. Over half of the Signatory States reportedly review research and monitoring results periodically and evaluate them for their efficacy; but only 5 or 6 provide additional information that suggests that these reviews have resulted in programmatic changes. A number of Signatory States describe how research results are being applied to improve management practices and mitigation of threats.

29. Nearly three-quarters of the Signatory States have taken some initiative to standardise methods and levels of data collection – though mostly at national, rather than sub-regional levels. It may be useful for Signatories that have adopted standardised methods, including data collection sheets, to provide details to the IOSEA Secretariat. More than half of the Signatory States responding occasionally exchange scientific and technical information and expertise with other Range States, but only three reportedly do so systematically. The remainder rarely or never exchange information and expertise. Well over half of the Signatory States report compiling and exchanging data on marine turtle populations of a regional interest, for example through regional mapping systems, national databases, and exchange of information on tagging, tag returns, migration and shared feeding grounds. All Signatories could improve their reporting in these areas.

Objective IV: Increasing public awareness and enhancing public participation

Education and awareness materials

30. Virtually all of the Signatory States responding have collected, developed, and/or disseminated diverse educational materials specifically focussing on marine turtle conservation. Australia, Kenya, Myanmar, Philippines, Seychelles, Sri Lanka, and Viet Nam appear to have been especially active. Students, teachers, local/fishing communities and the media appear to have received the most attention, followed by tourists, and policy makers. The military, fishing industry and scientists appear to have received lesser attention, having been targeted by only about one-third of Signatories. The limited focus of awareness and education campaigns on the fishing industry is noteworthy.

31. Nearly two-thirds of the Signatory States have undertaken initiatives to identify and facilitate alternative livelihoods, including income-generating activities, for local communities. The range of initiatives include: conversion to aquaculture, agricultural or forest/horticultural activities; mangrove rehabilitation; beach monitoring/nest protection; turtle-based ecotourism and management; artisan re-training and compensation; handicraft production; and provision of soft loans.

Stakeholder involvement

32. Almost all Signatory States have undertaken some initiative to involve stakeholders and local communities in the planning and/or implementation of conservation and management measures; and almost all report some collaboration in marine turtle conservation efforts from Government institutions, NGOs, and the private sector. A number of initiatives are noteworthy: funding of various nongovernmental initiatives in Australia through a National Heritage Trust, as well as the establishment of a National Turtle Recovery Group; Kenya's broad-based national sea turtle conservation group, known as KESCOM; Seychelles' encouragement of the private sector and coastal residents to become involved in conservation projects; South African parastatal, NGO and private sector involvement under the aegis of a new national turtle conservation policy; and close collaboration among relevant Government agencies and NGOs in Viet Nam. Bangladesh, Sri Lanka, United Republic of Tanzania and Viet Nam are reported to have established national turtle conservation steering committees.

Objective V: Enhancing national, regional and international cooperation

Combating illegal trade

33. Nearly 80 percent of the Signatory States responding have mechanisms in place and cooperate with other States to try to deter illegal international trade. Collaborators include CITES Management Authorities/CITES Secretariat; Interpol; domestic or foreign customs services; airport, port and coast guard authorities; specialised enforcement networks; wildlife agencies; and various concerned NGOs About three-quarters of the Signatories reportedly have undertaken a national review of their compliance with CITES obligations in relation to marine turtles. A similar number of countries have their own CITES training programmes or participate/cooperate in those of other bodies; but only a handful provide details. No Signatory mentioned any particular impediments to identifying illegal trade routes or deterring illegal trade, although such illegal trade is known to occur.

34. Almost all of the Signatory States have measures in place to prevent, deter and eliminate illegal domestic trade in marine turtle products. Seychelles provides the most detail, referring to legislation, public partnerships, interagency collaboration, training, and education and awareness programmes. Among the measures mentioned by other Signatory States are: beach patrols and regular monitoring; education and awareness programmes aimed at coastal communities; training of law enforcement personnel; investigation of poaching reports; monitoring of ports, airports and other areas where illegal trade may occur; cooperation with other agencies, such as the customs service; and prosecution of cases and imposition of fines for violations. A number of Signatories draw attention to gaps or difficulties in enforcement, particularly in remote areas and where there is a dependency on egg harvest for subsistence. Very few Signatory States appear to have exchanged information or raised compliance and/or trade issues in bilateral discussions or international forums.

Management issues identified; national actions prioritised

35. Eight Signatory States (Australia, Comoros, Kenya, Mauritius, Myanmar, Seychelles, United Kingdom, and Viet Nam) already have national action plans in place. At least ten other Signatories are working towards national plans, many of which appear to be at an advanced stage of development or review. Overall, very good progress is being made in this area although limited information is available on the extent to which the provisions of the IOSEA Conservation and Management Plan have been transformed into key management measures at the national level. Only a few Signatories appear to have a requirement for periodic review of their national plans.

36. Almost all Signatory States identify the conservation and management activities that they consider to be among the highest priorities for action. The five highest priorities are: conducting targeted studies on marine turtles and their habitats; establishing habitat protection and conservation measures; establishing or strengthening education and information programmes; capacity-building, training and partnerships; and reducing incidental capture and mortality. Almost all of the Signatory States list one or more local management issues for which they consider international cooperation necessary. Cooperative research in several areas (habitat and genetics studies, tagging/satellite tracking, identification of migration routes) figured prominently, with most Signatories rating international cooperation as being "important or essential". This was followed closely by illegal fishing in territorial waters and training/capacity building.

Mechanisms for cooperative management

37. Most of the Signatory States note some mechanism that is, or might potentially be, used to enhance cooperation in relation to marine turtle conservation and management at the *sub-regional* level, Very few, if any, indicate the particular strengths that the named organisations might bring to marine turtle conservation in the IOSEA region or their capacity to take on a broader coordination role. A number of Signatory States report having developed, or are participating in, networks for cooperative management of shared populations. Little information is available on steps taken to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within EEZs and on the high seas.

Capacity building / strengthening of training programmes, partnerships

38. The most common capacity-building need identified is for trained personnel, equipment and infrastructure, and programme support. It would be useful for Signatory States for which this question is relevant to indicate what their existing capacity is, both in terms of human resources and equipment available for marine turtle conservation activities, and to give a clearer picture of the extent to which progress is impeded in specific areas for lack of such resources.

39. Most of the Signatory States have carried out some training in marine turtle conservation and management techniques, but it is not clear whether or how this training is coordinated regionally. Australia, Eritrea, Myanmar, Seychelles, and Viet Nam describe rather extensive activities. In general, it would be helpful if Signatory States were to describe their training activities in more detail, with a view to demonstrating where synergies could be created through joint activities. Over two-thirds of the Signatory States have established one or several partnerships with universities, relevant organisations, and research institutions nationally and/or internationally.

Effectiveness of national policies and laws

40. About half of the Signatory States comment on the effectiveness of national policies and laws concerning the conservation of marine turtles and their habitats. Australia reports that a large majority of actions from its national recovery plan have been completed or are under way, accompanied by major shifts in public perception. High fines and information-gathering systems contribute to the effectiveness of Iranian laws, however lack of equipment and staff, and logistical challenges remain. Mauritius reports that turtle populations are found on remote islets away from the mainland, making it difficult to conserve and protect their habitats. Philippines reports that effectiveness of national laws is good in some areas, where there is support from NGOs and grassroots 'people's organisations'. Seychelles notes that penalties for offences were increased significantly under amended legislation introduced in 2001, which appears to

have had a deterrent effect. In South Africa, the system in place is reported to be very effective, with high enforcement associated with relatively few transgressions. The legislation in Sri Lanka is also reported to be effective. United Republic of Tanzania notes a number of important deficiencies with regard to its legislation, as well as insufficient capacity to effectively enforce the laws relating to turtle conservation. Comoros, Indonesia, Kenya all report on resource limitations affecting implementation or enforcement.

41. About two-thirds of the Signatory States have conducted or are conducting a review of policies and laws to address gaps or impediments in relation to marine turtle conservation. Nine report having encountered problems in relation to compatible application of laws and regulations across and between jurisdictions. The difficulties experienced include: the need for a practical arrangement to enable officers from one jurisdiction to assist in the implementation of legislation within another; the detention of non-citizens suspected of committing an offence under domestic law involving the use of a foreign vessel; differences in legal specifications of fishing mesh sizes; enforcement of environmental laws at community levels; definitions of the limits of municipal waters for enforcement purposes; identifying effective communication channels with neighbouring countries; and lack of standardized guidelines for the management of hatcheries. Greater sharing of information among Signatory States about difficulties encountered and solutions arrived at might yield some practical ideas for application elsewhere.

Objective VI: Promoting and supporting implementation

Institution strengthening

42. Only eight Signatories are reported to have encouraged, or to have plans to encourage, other States to sign the Memorandum of Understanding. Eight (35 percent) indicated they are currently favourable to amending the MoU to make it a legally-binding instrument; while nine (39 percent) were not in favour, and six had no view. Only 15 Signatories responded to the same question posed over a longer time horizon; and the results were largely inconclusive.

43. Australia, South Africa, United Kingdom and United States have all provided substantial funding towards the operational costs of the Secretarat, for organising meetings and for project implementation. About a dozen Signatory States make some reference to domestic sources of funding for implementation of marine turtle conservation activities at the national level. However, with a few exceptions, the information is somewhat vague and non-specific when it comes to quantifying actual expenditures. All Signatory States are encouraged to try to document the resources that have been mobilised for implementation of marine turtle conservation activities, to serve as a benchmark for future comparisons.

44. Over 80 percent of the Signatory States responding have solicited funds from, or have sought partnerships with, other Governments, major donors, industry, private sector etc for marine turtle conservation activities. The sponsors/partners include, among others: UNDP, World Bank, GEF, SEAFDEC, SWIOFP, WWF, WCS, Conservation International, and various other corporate donors and private foundations. The approaches that have been attempted are quite diverse and seem not to be detrimentally competitive. Only eight Signatory States have explored the use of economic instruments for the conservation of marine turtles and their habitats. Few details are provided, but promotion of eco-tourism is cited as common theme.

45. Most of the Signatory States responding have designated a lead agency responsible for coordinating national marine turtle conservation and management policy. Responses to a related question – seeking to ascertain the roles and responsibilities of *other* government agencies that may have a peripheral interest – were more ambiguous. Only about a third of the Signatories report having conducted a review of the roles and responsibilities of government agencies, and few details are provided. Of the sixty percent that had not conducted or completed such a review, several reported that it was contemplated, while a few indicated that there was no need for further review since the mandates were already clear.

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Part II: Detailed analysis of national reports, excluding site-based information

46. To provide a visual overview of implementation progress to date, the Secretariat has prepared a colour-coded matrix listing each of the 24 programmes of the Conservation and Management Plan (CMP) on one axis and the 27 Signatory States on the other (Annex 1). Criteria were developed and a scoring system was devised to objectively measure the performance of each Signatory State in relation to the measures contained in the CMP. The rating system and methodology used to evaluate the information provided in reports submitted by Signatory States through the Online Reporting Facility are described in Part III.

47. Six categories were drawn up to summarize the findings at the level of each programme within the CMP, as follows:

- Full or near-full implementation
- Active intervention, very substantial progress
- Partial implementation, good progress
- Some progress, but limited in scope
- Very limited progress
- No information available or no progress reported

48. The primary purpose of the evaluation matrix is to identify gaps in implementation and reporting *across programmes* (that is to say, horizontally). The overall results (averages) for each programme are indicated in the far right column of the matrix. Although one may wish to examine also the results for any given Signatory State (displayed vertically), this exercise is interesting only to the extent that it may help to identify areas where a Signatory State has excelled – and may therefore be able to assist or serve as a model for others – or areas where a given Signatory may need assistance to implement a programme more effectively.

49. The evaluation matrix is not intended for ranking one Signatory State against another; and for this reason, the average results for a given country are displayed only as colour-codes. These give a general indication of implementation progress, following the generic categories listed above.

50. It is worth pointing out that the matrix displays consolidated results at the level of each *programme*, whereas the underlying analysis is done at the finer, *question* level. Thus, the colour assigned to a particular cell (programme) and Signatory State represents a numeric value equal to the average score for all questions pertaining to that programme[3].

51. Every response in every national report has been carefully and systematically reviewed. While this process is exhaustive (and somewhat exhausting), one of the strengths of the software programming behind the IOSEA Online Reporting Facility is that the national reports can be rated quite efficiently and the results fed into the evaluation matrix automatically. In other words, once the national reports have been evaluated, the colour-coded matrix can be generated almost instantaneously. Therefore, it is relatively easy to update whenever new information is provided.

52. The evaluation criteria have been adjusted only slightly since a similar exercise was carried out for the Fourth Meeting of Signatory States in March 2006, meaning that the results are comparable from one reporting period to the next. In other words, it is possible to make direct comparisons and to measure progress between the national reports submitted in March 2006 and those made available in July 2008.

53. It is important to make a distinction between the detailed review of implementation that follows, and the graphical matrix discussed above. The substantive commentary in Part II has been prepared after

[3] Note that the calculated value of each cell is intentionally not displayed in the version presented in Annex 1. IOSEA Focal Points with password access can view all of the values in the complete matrix, by clicking on the Evaluation" button in the Online Reporting Facility's Editor.

generating and analysing reports from the Online Reporting Facility for all Signatory States for each of the approximately 80 questions in the national report template. The colour-coded matrix has been generated separately, based on previously defined criteria, in order to present complementary information in a visual format that is more readily absorbed. The two analyses are thus independent, but mutually supportive.

54. In the following analysis, a number of points should be borne in mind:

- Where information is absent in relation to a particular programme for any given Signatory State, this does not necessarily mean that activities have not taken place in that country; rather this is just as likely to be indicative of under-reporting. This is most certainly the case for Signatory States that have not completed or updated their reports in recent months;

- For some countries, it is known that the information submitted is not comprehensive, particularly where NGO activities have not been reported; therefore, a rating of "limited progress" may understate the extent of actual implementation.

- The definitions "General tendencies" in progress – ranging from "limited" to "full or near full implementation" – are subjective and open to interpretation, whereas the underlying scoring is quantifiable and backed by objective criteria.

- For the first time, an indication is given of how the Signatory States' collective performance, measured in July 2008, compares to the previous reporting exercise.

- Where appropriate, attention is drawn to "notable responses", in case readers wish to examine in the Online Reporting Facility, in more detail, the particularly informative explanations provided by a given Signatory State.

OBJECTIVE I: REDUCING DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY

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

General tendency: Partial implementation, good progress
Notable responses: Bahrain, Eritrea, Myanmar, South Africa, United Kingdom

55. This question is purely informational and intended to provide the reader with a succinct summary of the contents of the national report. It was reformulated in the current template to encourage Signatories to provide a general overview of their marine turtle populations, associated habitats and trends; as well as highlighting the country's main challenges and achievements in marine turtle conservation, drawing attention to particular issues of concern. (Detailed information on specific sites is considered separately and does not figure in this analysis.) About two-thirds of the Signatories provided informative responses, including five, mentioned above, that were particularly to the point.

1.2 Identification and application of best practices to minimise threats

General tendency: Partial implementation, good progress (improved since 2006)
Notable responses: Australia, Bahrain, Bangladesh, Cambodia, Eritrea, Kenya, Philippines, Seychelles, South Africa, United Republic of Tanzania, United States

56. Signatory States were requested to describe any protocol or approaches for conserving and managing marine turtle populations considered to be exemplary and suitable for adaptation and adoption elsewhere. In general, the responses to this question were especially informative. Though lacking detail in places, with further elaboration they could serve as useful indicators of approaches that might be adopted or adapted across countries. Noteworthy initiatives described in some detail include: Australia's comprehensive national Recovery Plan, its broad partnership involving Indigenous communities, as well as fundamental research and conservation projects; Bahrain's investigations into sources of mortality; Cambodia's programme to foster cooperation with coastal fishing communities; Eritrea's public awareness initiatives; Kenya's inclusive national sea turtle conservation programme; Philippines' community-based conservation agreements and data-gathering system; Seychelles' stakeholder involvement in nation-wide conservation and monitoring programmes; South Africa's comprehensive monitoring programme and strategically-focused management regime; United Kingdom's successful combination of approaches to help recover turtle populations; United Republic of Tanzania's monitoring, conservation education and community involvement approach; and the United States' standardised nesting and foraging area monitoring protocols.

1.3 Correction of adverse incentives that contribute to turtle mortality

General tendency: Borderline – partial implementation, good progress (major improvement since 2006)
Notable responses: Australia, Philippines, Seychelles, South Africa

Socio-economic studies

57. Close to half of the Signatory States report, to varying degrees, on socio-economic studies or activities that have been conducted among communities that interact with marine turtles and their habitats. Among them: funding to assist in the development of community-driven approaches to turtle (and dugong) management in Australia; studies of turtle consumption/use in Bangladesh; traditional use of marine turtles in Comoros, questionnaire surveys in Eritrea; economic evaluation of turtle tourism in Indonesia; investigations of trade and consumption patterns in Kenya; studies in Pakistan on the dependence of coastal communities on marine ecosystems; an in-depth social and institutional assessment for the Philippines' Turtle Islands in 1998; studies in Seychelles to evaluate public attitudes towards turtle conservation and the socio-economic importance of marine resources; and various case studies prepared by the United States (including one study of nest protection incentive payments in Tanzania).

Identification/correction of adverse incentives

58. About three-quarters of the Signatory States identified various adverse incentives contributing to turtle mortality – ease of access to the resource, low penalties against illegal harvesting, and lack of affordable alternatives to turtle products being among the most common ones. Signatories also list a number of other adverse incentives, such as: development activities (legal and illegal), uncontrolled tourism, incentives to continue harmful forms of fishing, black markets, and poverty/basic nutritional needs etc. Many Signatories describe steps that are being taken to try to investigate and correct various adverse economic incentives, among them: Australia's partnership with indigenous communities to address the sustainable harvest of marine turtles; Bahrain's attempts to reduce its shrimp trawl fleet; Iran's efforts to use religious edicts to dissuade consumption of turtle eggs and meat; alternative livelihood programmes in Pakistan and Philippines; development of turtle tourism in Seychelles; South Africa's sustainable livelihoods programme and restrictions on coastal development; and various schemes to involve communities (including former poachers) in eco-tourism activities and nest protection. While reporting under this section has improved markedly, more in-depth descriptions of practical approaches that have shown some measure of success would be beneficial.

1.4 Reduction of incidental capture and mortality

General tendency: Some progress, but limited in scope (major improvement in reporting since 2006)
Notable responses: Australia, Indonesia, Myanmar, Philippines, South Africa

Fishing effort

59. The reporting template was significantly modified in 2005 to accommodate questions that would help Signatory States to simultaneously meet reporting commitments in relation to the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations. The data collection requirements for some of the new questions are substantial. Signatory States are requested to give a subjective indication of the relative level of fishing effort and impact on marine turtles of selected fisheries. There is a significant improvement in reporting compared to 2006, both in terms of the percentage of Signatory States responding and also the depth of their responses – so much so that it is now easier to indicate the countries that have *not* provided much, if any, information on fishing effort and impact than those that have. Data are still largely lacking from Kenya, Madagascar, Mauritius, Pakistan, Saudi Arabia, Sri Lanka, United Arab Emirates, and United Republic of Tanzania.

60. The fisheries described in some detail include: shrimp trawls, set gill nets, anchored fish aggregating devices (FADs), purse seine, longlining, driftnet, and other miscellaneous fisheries. Tables 1 and 1a give a graphical overview of the reported level of *effort* of each fishery. For many countries this information is accompanied by a more detailed description of the fishery (ie scale and operational coverage). The level of additional detail provided for all fisheries, particularly shrimp trawl and set gill net fisheries, has improved markedly. These two fisheries are reported to be in operation in 77 and 91 percent, respectively, of the Signatories responding, and the level of effort was reported to be "moderate to relatively high" in more than 50 percent of those countries.

Perceived fishing impacts

61. Tables 2 and 2a provide a similar graphical overview of the level of perceived *impact* of the various fisheries as reported by the Signatories States. By way of example, shrimp trawls are reported by 7 Signatory States (Bahrain, Bangladesh, Cambodia, Eritrea, India, Indonesia and United States) to have a "relatively high" impact. These amount to about a third of those Signatories responding. Set gill nets are reported by 11 Signatory States (half of those responding) to have a "moderate to relatively high" impact; with Islamic Republic of Iran and United Republic of Tanzania reporting a particularly serious problem. The number of Signatories reporting "moderate to relatively high" impacts of longlines was somewhat lower (just over 40 percent), with four notable cases: Cambodia, Indonesia, South Africa, and United States. Over a third of the Signatories responding indicated "unknown" impacts. Other fisheries, such as purse seines and FADs, were generally reported to have relatively less impact on marine turtles.

Activity Report

1.4.1 Fisheries, Fishing Effort & Interactions

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 could possibly interact with marine turtles. [INF]

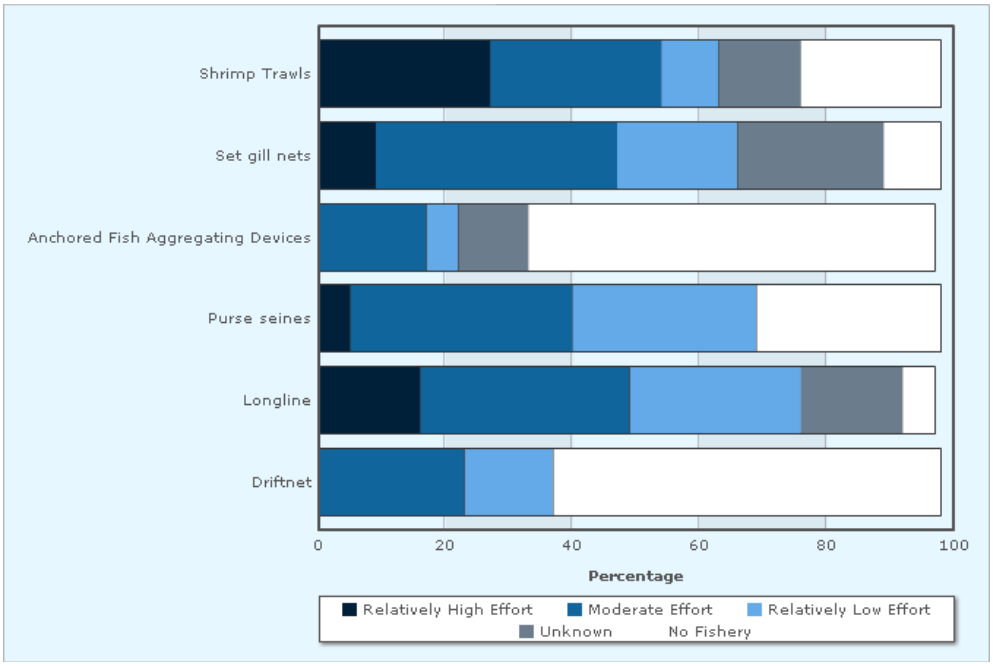
Level of fishing effort

	Shrimp trawls	Set gill nets	FADs	Purse seine	Longline	Driftnet	Other 1	Other 2
Australia								
Bahrain								
Bangladesh								
Cambodia								
Comoros								
Eritrea								
India								
Indonesia								
Islamic Republic of Iran								
Jordan								
Kenya								
Madagascar								
Mauritius								
Myanmar								
Oman								
Pakistan								
Philippines								
Saudi Arabia								
Seychelles								
South Africa								
Sri Lanka								
Thailand								
United Arab Emirates								
United Kingdom								
United Republic of Tanzania								
United States								
Viet Nam								

In the matrix above, the colour blue depicts the presence of a particulary fishery, while the shade of blue represents the reported relative level of fishing effort taken from Question 1.4.2 (see key for details).

Key	Relatively High Effort	Moderate Effort	Relatively Low Effort	Unknown	No Fishery	No Response

Aggregate Summary of Responses



Activity Report

1.4.2 Perceived Fishing Impact

1.4.2 Please indicate the relative level of fishing effort and perceived impact of each of the above fisheries on marine turtles (e.g. in terms of by-catch). [TSH]

Level of perceived impact

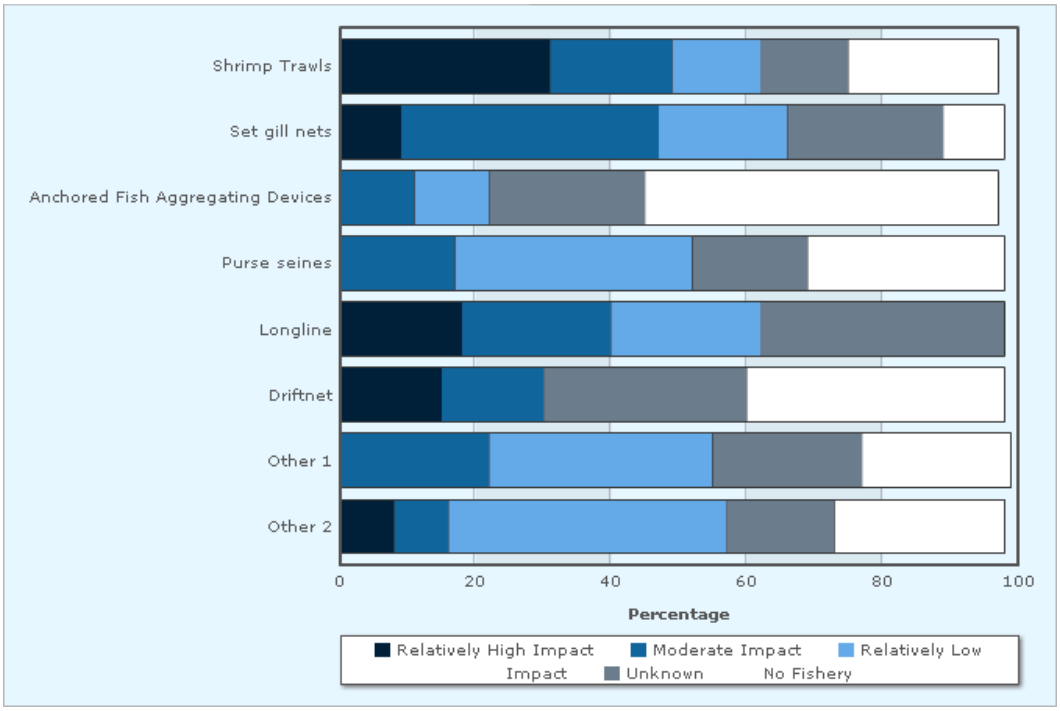
	Shrimp trawls	Set gill nets	FADs	Purse seine	Longline	Driftnet	Other 1	Other 2
Australia								
Bahrain								
Bangladesh								
Cambodia								
Comoros								
Eritrea								
India								
Indonesia								
Islamic Republic of Iran								
Jordan								
Kenya								
Madagascar								
Mauritius								
Myanmar								
Oman								
Pakistan								
Philippines								
Saudi Arabia								
Seychelles								
South Africa								
Sri Lanka								
Thailand								
United Arab Emirates								
United Kingdom								
United Republic of Tanzania								
United States								
Viet Nam								

In the matrix above, the colour blue depicts the presence of a particular fishery, while the shade of blue represents the perceived level of fishing impact (see key for details).

Key	Relatively High Impact	Moderate Impact	Relatively Low Impact	Unknown	None	No Response

The following stacked bar chart indicate the perceived impact for each fishery described by the countries responding to Question 1.4.2, as a percentage for each category.

Aggregate Summary of Responses



62. Already, the amount of collective information that can be gleaned from these sections of the reports is extensive. It warrants a more in-depth analysis than can be attempted here due to space and time constraints. There is, of course, still much room for improvement – in terms of precision and completeness of the responses – but already the reports make a valuable contribution to our understanding of the fisheries that may be interacting with marine turtles. Admittedly, the assessments of effort and impact are still to a large extent subjective, but as countries begin to provide more detailed information on the operation of a given fishery (e.g. as South Africa has done), the evaluations can be made more objectively on the basis of quantified data. Therefore, Signatory States are encouraged to give priority to completing and strengthening sections 1.4.1 and 1.4.2 of their reports.

Illegal fishing

63. Illegal fishing was identified as a serious problem by the Third Meeting of the Signatory States. About two-thirds of the Signatories now cite specific examples of illegal fishing in the IOSEA region that may impact marine turtles. Examples include illegal, unregulated and unreported (IUU) take of turtles in northern Australian waters; illegal use of gillnets and fishing out of season in Bahrain waters; foreign vessels fishing illegally in Indonesian waters; illegal trawling and drift gill nets in Oman; continued use of explosive and other destructive fishing methods (eg in Bangladesh, Indonesia, Kenya, Philippines, Tanzania); harpooning of turtles at sea in Seychelles; across-border poaching in protected areas by foreign longliners and trawlers in South African waters; and illegal fishing mainly for beche de mer in the BIOT archipelago. The United States reports that if countries are certified to be engaged in IUU fishing, the provisions of the High Sea Driftnet Fisheries Moratorium Protection Act can come into force, which include the denial of port privileges.

Minimizing incidental capture and mortality

64. Signatory States are requested to report on the implementation of several methods of minimizing incidental capture and mortality of marine turtles in fishing. These include appropriate handling of incidentally caught turtles; devices that allow the escape of marine turtles (eg. TEDs); measures to avoid encirclement of turtles in purse seines; appropriate combinations of hook design, bait type, depth, gear specifications and fishing practices; monitoring and recovery of FADs; net retention and recycling schemes; spatial and temporal control of fishing; and effort management control.

65. Reporting on all of these measures has improved significantly since 2006 (Table 3), however implementation remains weak. Ten Signatories (half of those reporting) have initiated training programmes in appropriate handling of incidentally caught turtles, with Australia, Indonesia, Myanmar and Tanzania providing noteworthy explanations. Seven Signatories do not have such programmes in place; and seven have not reported on this area.

66. About one-third of all Signatories reporting have initiated programmes requiring the use of devices that allow the escape of marine turtles (Australia, India, Indonesia, Kenya, Madagascar, Pakistan, United States, and Viet Nam), however the success of implementation varies. Australia and Madagascar offer informative descriptions of their efforts. Almost 40 percent of the Signatories responding do not presently have by-catch reduction systems for marine turtles in place, but a few of these (eg. Bahrain, Islamic Republic of Iran, Myanmar, United Republic of Tanzania) have undertaken trials or workshops on the relevant technology.

67. Only six Signatories (Australia, Indonesia, Philippines, Seychelles, United States, and Viet Nam) report having investigated appropriate combinations of hook design, bait type, gear specifications and fishing practices as means of mitigating sea turtle by-catch. Nearly half of the Signatories responding to this question (and probably many more, if one counts non-respondents) have yet to initiate such studies.

68. About two-thirds of the Signatories responding exercise spatial and temporal control of fishing activities, and a comparable percentage manage fishing effort. However, several point out that these controls are primarily directed at fisheries management and are not specifically intended to address turtle

Activity Report

1.4.4 Methods to Minimize Incidental Capture

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]

Programmes

	Approp. handling	Escape devices	Encircle measures	Hook design	Monitoring	Net retention	Spatial control	Effort mgt.
Australia	Has Programme	Has Programme		Has Programme		Has Programme	Has Programme	Has Programme
Bahrain	Has Programme		Not Applicable		Not Applicable		Has Programme	Has Programme
Bangladesh		Has Programme					Not Applicable	Not Applicable
Cambodia			Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Has Programme
Comoros		Not Applicable			Has Programme		Has Programme	Has Programme
Eritrea	Has Programme					Not Applicable	Has Programme	Not Applicable
India	Has Programme	Has Programme		Not Applicable			Has Programme	Has Programme
Indonesia	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme	Not Applicable
Islamic Republic of Iran		Not Applicable					Has Programme	Has Programme
Jordan	No Response	No Response	No Response	No Response	No Response	No Response	No Response	No Response
Kenya	Has Programme	Has Programme		No Response	No Response			No Response
Madagascar	No Response	Has Programme	No Response	No Response	No Response	No Response	No Response	Has Programme
Mauritius	Not Applicable	Not Applicable	No Response	No Response	No Response	No Response	No Response	No Response
Myanmar	Has Programme		Has Programme		Not Applicable	Has Programme	Has Programme	Has Programme
Oman	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Has Programme	Has Programme
Pakistan	No Response	Has Programme	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Has Programme	Has Programme
Philippines	Has Programme			Has Programme			Has Programme	
Saudi Arabia	No Response	No Response	No Response	No Response	No Response	No Response	No Response	No Response
Seychelles			Has Programme	Has Programme				
South Africa	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable			Has Programme
Sri Lanka	No Response	No Response	No Response	No Response	No Response	No Response	No Response	No Response
Thailand	Has Programme	Not Applicable			Has Programme		Has Programme	Has Programme
United Arab Emirates	No Response	No Response	No Response	No Response	No Response	No Response	No Response	No Response
United Kingdom					Not Applicable	Not Applicable	Not Applicable	Not Applicable
United Republic of Tanzania	Has Programme							
United States	No Response	Has Programme		Has Programme	No Response	No Response	Has Programme	Has Programme
Viet Nam	Has Programme	Has Programme	No Response	Has Programme	No Response	No Response	Has Programme	No Response

In the above matrix, the colour blue depicts the presence of a particular programme.

Key	Has Programme	Does not have Programme	Not Applicable	No Response

by-catch. Nonetheless some of these measures do offer protection for marine turtles and, with some modification, their ancillary benefits for turtles might be enhanced.

69. Signatory States are requested to report on the development of other fisheries-related programmes that may contribute to minimizing incidental capture and mortality of marine turtles in national waters and in the high seas. As Table 4 illustrates, both reporting and actual implementation of these programmes is substantial. Over half of the Signatories responding have some form of onboard observer programme: Australia, Eritrea, Indonesia, Kenya, Madagascar, and Philippines provide informative descriptions. A comparable percentage report the use of vessel monitoring systems (VMS). Nearly all Signatories have systems in place for inspections at ports and landing sites (but fewer at sea). Although these inspections probably have another primary focus, the potential exists for more attention to be given to turtle by-catch through greater cooperation and training. *(NB: some of the responses to this question appear to be confounded with a previous reporting template – and some Signatories need to revisit their responses.)*

70. Close to 90 percent of the Signatories responding have conducted training for fishers and/or have produced a variety of educational information materials; and most offer some explanations. In most cases, it would be helpful if these descriptions were elaborated further, to provide a better sense of what has been done and what is planned in the future, with a view to avoiding duplication of effort and perhaps identifying areas where joint initiatives could be developed.

Programme reviews

71. Only half of the Signatories responding indicate that they periodically review and evaluate these various mitigation measures and programmes for their efficacy. Australia carries out 6-monthly assessments of implementation and reviews each fisheries by-catch action plan every two years. Other countries providing additional details of programme assessments include: Bangladesh, Philippines, Seychelles, and South Africa.

Research and development

72. Many of the Signatory States report on interesting research and development activities in support of by-catch reduction. For instance, Australia is continuing its research on more effective TEDs, and has undertaken major ecological risk assessments of the impacts of fisheries on the marine ecosystem. Bahrain requires shrimp fishermen to report instances of turtle by-catch; Eritrea's Ministry of Fisheries has 10 years of detailed data on incidentally caught turtles; Indonesia has conducted interviews with fishermen on tuna longliners and shrimp trawls, and is experimenting with circle hooks and TEDs; and Philippines is conducting research on circle and J-hooks, and is collecting data on incidental catch in various coastal gears. French and Spanish fleets operating around Seychelles are working on new drifting FAD designs to reduce by-catch. South Africa is experimenting with drumlines to replace bather protection nets and with circle hooks on some longline vessels, and is reviewing prawn trawl by-catch impacts. Studies in the United Republic of Tanzania confirm that gillnets, particularly bottom set nets, pose a significant threat to turtles.

Information and technical exchanges

73. About half of the Signatories responding have exchanged information and technical assistance internationally in the area of by-catch mitigation. Australia, through the Australian Maritime College, conducted research and training on TEDs in Kuwait in 2003; and various Australian agencies are reported to have exchanges with Indonesia. Comoros has benefited from European Union technical assistance aimed at improving technologies and data collection. In 2004, Kenya organised a marine turtle workshop for countries of the Western Indian Ocean region. Madagascar convened an FAO workshop in 2007 to share experiences in TED implementation with other Southwest Indian Ocean countries. South African NGO experience in by-catch mitigation has been shared with neighbouring countries. Sri Lanka, through the NGO 'TCP', has distributed its by-catch survey findings internationally. The United States has an active programme to exchange TED technical information with all interested countries, and has started programmes to collaborate and share information on longline sea turtle by-catch. Viet Nam is collaborating and exchanging information with SEAFDEC and various international NGOs.

Activity Report

1.4.5 Programmes to Minimize Incidental Capture

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? [IND]

Programmes

	Onboard observer	Vessel Monitoring	Inspections	Training	Information
Australia	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Bahrain	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
Bangladesh	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
Cambodia	Does not have Programme	Not Applicable	Has Programme	Has Programme	Has Programme
Comoros	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Does not have Programme
Eritrea	Has Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
India	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
Indonesia	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Islamic Republic of Iran	Has Programme	Has Programme	Has Programme	Has Programme	No Response
Jordan	Not Applicable	Not Applicable	Not Applicable	Has Programme	Has Programme
Kenya	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Madagascar	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Mauritius	No Response	Has Programme	Has Programme	No Response	No Response
Myanmar	Has Programme	Does not have Programme	No Response	Has Programme	Has Programme
Oman	Not Applicable	Has Programme	Has Programme	Has Programme	Has Programme
Pakistan	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
Philippines	Has Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
Saudi Arabia	No Response	No Response	No Response	No Response	No Response
Seychelles	Has Programme	Has Programme	Has Programme		
South Africa	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Sri Lanka	No Response	No Response	Has Programme	Has Programme	Has Programme
Thailand	Does not have Programme	Does not have Programme	Has Programme	Has Programme	Has Programme
United Arab Emirates	No Response	No Response	No Response	No Response	No Response
United Kingdom	Not Applicable	Not Applicable	Has Programme	Not Applicable	Not Applicable
United Republic of Tanzania	Has Programme	No Response	No Response	No Response	No Response
United States	Has Programme	Has Programme	Has Programme	Has Programme	Has Programme
Viet Nam	Does not have Programme	No Response	Has Programme	Has Programme	Has Programme

In the above matrix, the colour blue depicts the presence of a particular programme to, inter alia, minimize incidental capture of marine turtles (see key for details).

Key	Has Programme	Does not have Programme	Not Applicable	No Response

Driftnet enforcement

74. About half of the Signatory States reporting have legislative prohibitions against the use of driftnets in national waters. Several (eg. India, Oman, Viet Nam) are considering their prohibition; while two (Iran, Thailand) have not taken any legislative steps in this regard. Less clear from most of the responses is the practical application of legislative measures that are already in place.

1.5 Identification of turtle uses/values; legislation and management regimes

General tendency: Partial implementation, good progress (major improvement since 2006)
Notable responses: Bahrain, Cambodia, Islamic Republic of Iran, Kenya, Philippines, Seychelles, South Africa, United Kingdom

Economic uses and cultural values

75. As shown in Tables 5 and 5a, almost all of the Signatory States list a number of economic uses and cultural values of marine turtles, the most prevalent being meat consumption (in 70 percent of those reporting), followed by eco-tourism benefits (54 percent), egg consumption (46 percent) and cultural/traditional significance (46 percent). Meat consumption is generally rated to be of "low to moderate" prevalence; and only ten Signatories (notably United Republic of Tanzania) offer a brief description. Moderate egg consumption is reported to occur in Bangladesh, Comoros, Eritrea, Indonesia and Philippines, and its importance is either "low" or unrated in about a dozen other countries. Curiously, only Australia, Seychelles, South Africa and Tanzania describe eco-tourism programmes centred on marine turtles, even though this activity is reported to occur at some level in more than half of the Signatories responding. A few interesting examples of cultural/traditional significance are given. Consumptive use of turtles for shell, traditional medicine and fat also occurs, but is less common.

Direct harvest and domestic trade

76. Virtually all of the 24 Signatory States responding have enacted legislation to prohibit direct harvest and domestic trade in marine turtles, their meat, eggs, parts and products – either explicitly or implicitly; and many (including Australia, Islamic Republic of Iran, South Africa, United Kingdom, United Republic of Tanzania) provide detailed descriptions of the provisions and penalties for infringement. Notwithstanding the legislative provisions mentioned above, traditional consumption of turtle meat and/or eggs occurs in 17 (about 75 percent) of the Signatory States responding; and is reported to be "moderate to high" in over 40 percent of these (Tables 6 and 6a). Australia is unable to characterise the level and impact of the traditional harvest, but offers a detailed explanation of its importance and attempts to monitor it. Historically, in Seychelles, both the level and impact of this harvest was high; and illegal poaching continues today. Only Bahrain, Jordan, Mauritius, Pakistan, Thailand, United Kingdom and United States report no traditional harvest.

Management regimes

77. Nearly 90 percent of the 20 Signatory States that responded indicate that they have established domestic management programmes that include limits on levels of intentional harvest, and several of these give specific details. Australia is developing a nationally coordinated effort to sustainably manage the harvest of turtles. Indonesia reports on efforts to phase out harvesting, reduce retail sales, and shift egg harvest concessionaires to alternative income sources. In the Philippines' Turtle Islands, an administrative order provides for the conservation of a certain percentage of the eggs collected. In Sri Lanka, former egg collectors are employed as turtle nest protectors at several beaches. Seychelles documents in considerable detail the successive management regimes put in place over the past 100 years, noting that protected areas where all hunting is prohibited have proven to be more effective than 'selective' regulations. In United Republic of Tanzania, involvement of local communities in nest protection, monitoring, data collection and awareness-raising has played a key role in reducing threats to turtles.

78. Only a few Signatory States have management agreements already in place, or being negotiated, with other concerned States in relation to sustainable levels of traditional harvest of marine turtles.

Activity Report

1.5.2 Economic Uses & Cultural Values

1.5.2 Which, among the following list, are economic uses and cultural values of marine turtles in your country? Please rate the relative prevalence / importance of each consumptive or non-consumptive use. [INF]

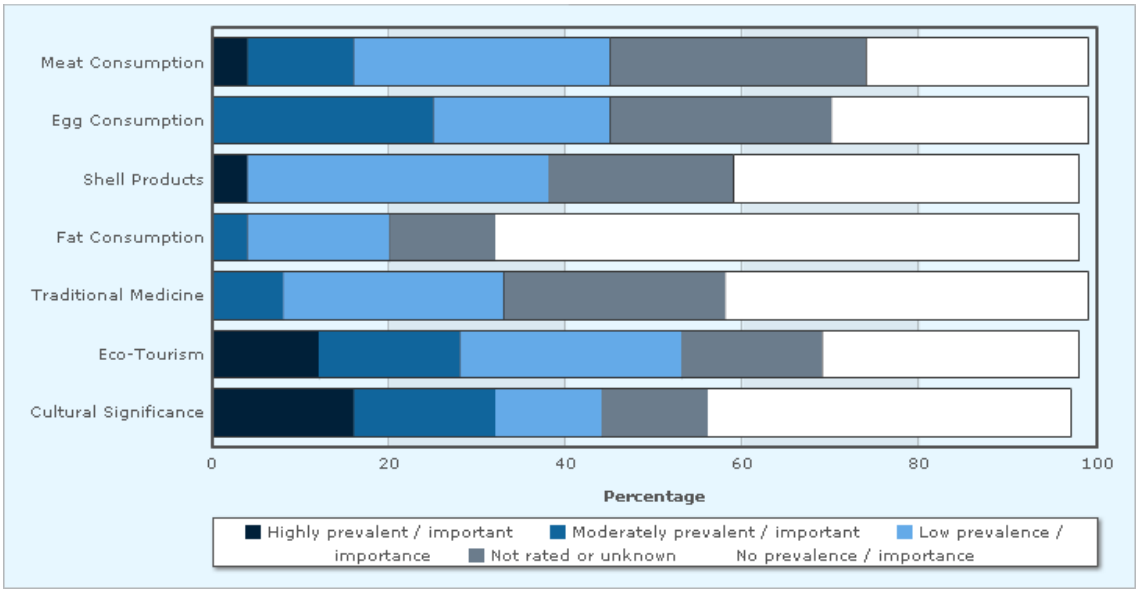
Relative Prevalence / Importance

	Meat Consumption	Egg Consumption	Shell Products	Fat Consumption	Traditional Medicine	Eco-Tourism	Cultural Significance
Australia							
Bahrain							
Bangladesh							
Cambodia							
Comoros							
Eritrea							
India							
Indonesia							
Islamic Republic of Iran							
Jordan							
Kenya							
Madagascar							
Mauritius							
Myanmar							
Oman							
Pakistan							
Philippines							
Saudi Arabia							
Seychelles							
South Africa							
Sri Lanka							
Thailand							
United Arab Emirates							
United Kingdom							
United Republic of Tanzania							
United States							
Viet Nam							

Key	Highly prevalent / important	Moderately prevalent / important	Low prevalence / importance	Not rated or * unknown	No prevalence / importance	No Response

* The economic use or cultural value occurs in this country, but its relative prevalence or importance has not been rated, or is unknown.

Economic uses and cultural values of marine turtles in Signatory States responding to this question



Activity Report

1.5.3 Traditional Harvest

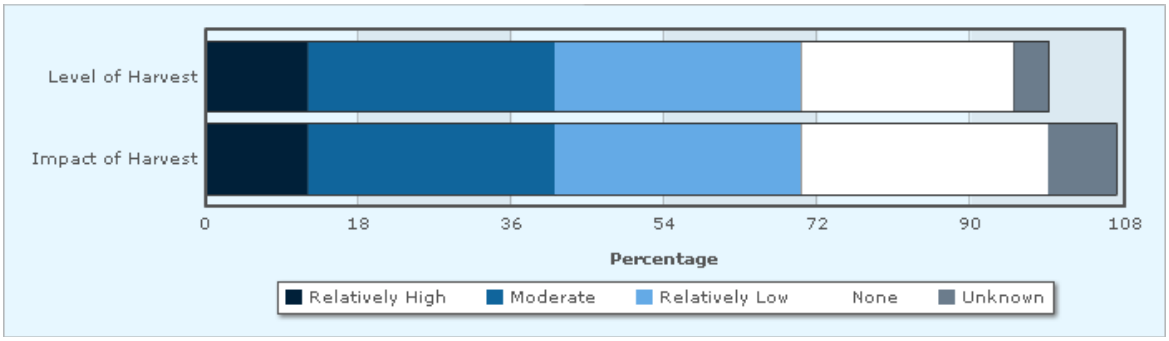
1.5.3 Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. [IND, TSH]

Level of harvest / impact of harvest

	Level of harvest	Impact of harvest
Australia	Unknown	Unknown
Bahrain		
Bangladesh	Relatively Low	Relatively Low
Cambodia	Relatively Low	Relatively Low
Comoros	Relatively High	Relatively High
Eritrea	Relatively High	Relatively High
India	Relatively Low	
Indonesia	Relatively High	Relatively High
Islamic Republic of Iran	Relatively High	Relatively High
Jordan		
Kenya	Relatively High	Relatively High
Madagascar	Moderate	Moderate
Mauritius	Moderate	Moderate
Myanmar	Relatively Low	Unknown
Oman	Relatively Low	Relatively Low
Pakistan		
Philippines	Relatively High	Relatively High
Saudi Arabia	Moderate	Moderate
Seychelles	Moderate	Moderate
South Africa	Relatively Low	Relatively Low
Sri Lanka	Moderate	Moderate
Thailand		
United Arab Emirates	Moderate	Moderate
United Kingdom		
United Republic of Tanzania	Relatively High	Relatively High
United States		
Viet Nam	Relatively Low	Relatively Low

Key	Relatively High	Moderate	Relatively Low	Unknown	None	No Response

Comparison of level of impact and level of harvest in Signatory States responding to question



Australia provides details of relevant agreements with Indonesia and Papua New Guinea. Philippines has a bilateral agreement with Malaysia, and is also dealing with the issue of sustainable harvest in the framework of a separate MoU with Indonesia and Malaysia for the Sulu-Sulawesi Marine Ecoregion.

1.6 Development of nesting beach management programmes

General tendency: Some progress, but limited in scope
Notable responses: Australia, Philippines, Seychelles, Sri Lanka, United Kingdom

Nesting beach management

79. Almost all of the Signatory States report having a suite of measures in place to minimise or reduce the mortality of eggs, hatchlings and nesting females (Table 7). Nearly 90 percent have monitoring programmes: Australia, Bangladesh, South Africa, Sri Lanka, and United Republic of Tanzania are among those that provide useful descriptions. Debris removal and beach clean-up is practiced in nearly as many Signatory States, but in many cases the frequency and extent of the activities appear to be limited. About 80 percent of the Signatories have education/awareness programmes, with Australia, Eritrea, Philippines, Seychelles, South Africa and United Republic of Tanzania offering notable examples. About two-thirds have regulations on the location and design of buildings and are working to reduce light pollution; however rather few concrete examples are provided. Just over half of the 25 Signatories responding report using egg relocation and hatcheries as a management tool, and several describe the particular circumstances where this may be necessary. Restricting vehicle access and predator control are also practiced by similar percentages (56-64 percent); and specific examples of predation problems and controls on vehicles are given. Generally speaking, the national reports would be much more informative if the descriptions of particular activities were more thorough.

80. As shown by the colour-coding scheme in Table 7a, the reporting template now provides scope for assessing the effectiveness these measures, if only subjectively, and many Signatories have begun to add these details. These “self-assessments” may be of little practical value, but it does give Signatories an opportunity to identify and describe particularly effective programmes in their country; and also to draw attention to certain aspects in need of improvement or perhaps external assistance. In a former report, Australia noted that there may be considerable variability in the effectiveness of measures across different jurisdictions within the same country, making it difficult for such a large country to make a general self-assessment. “Comment boxes” allow Signatories to elaborate further, where necessary, which may help to overcome this difficulty.

Programme reviews

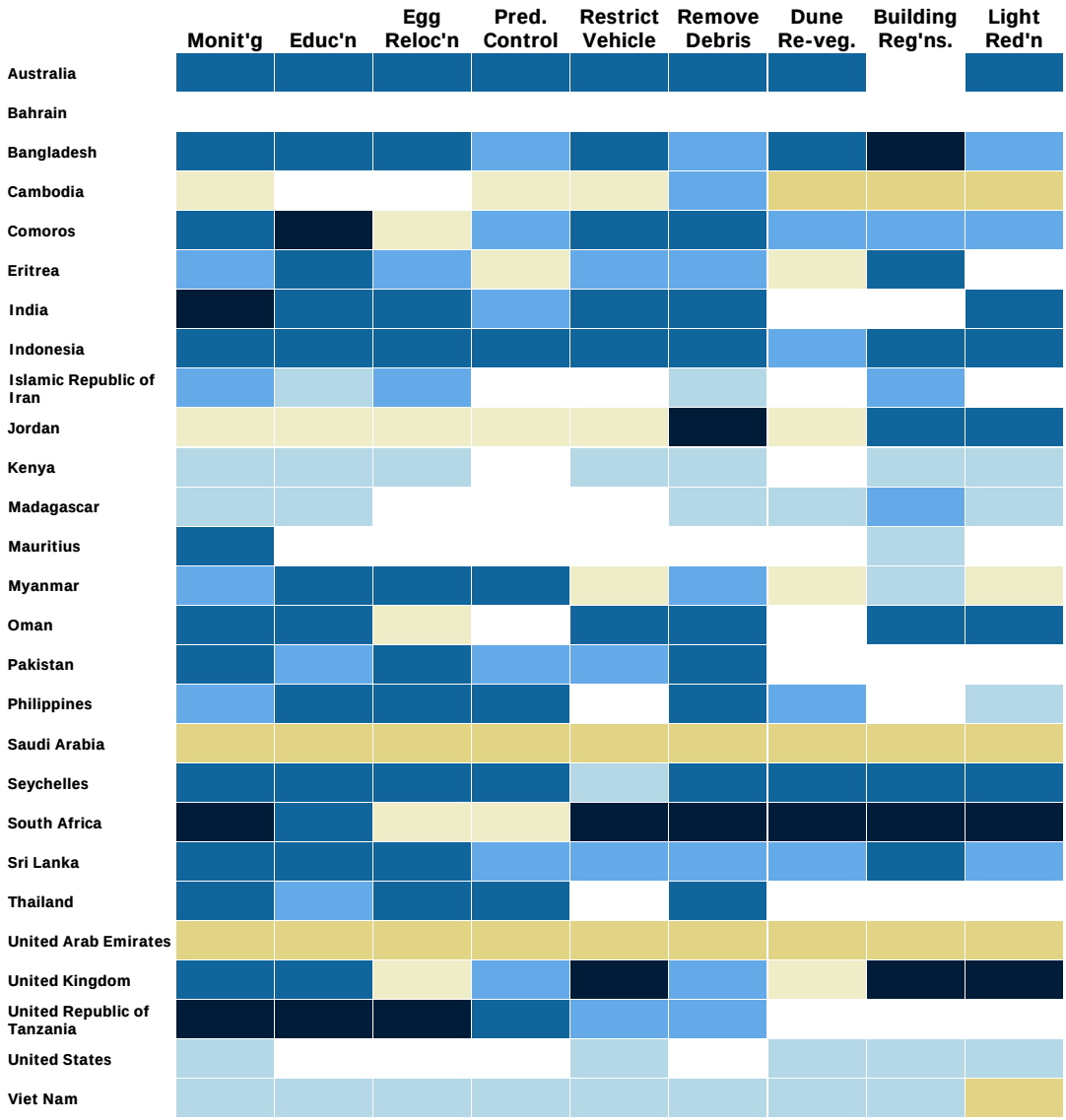
81. About two-thirds of the Signatory States indicate that they have undertaken a recent evaluation of the effectiveness of their nest and beach management programmes, and some provide specific details of the reviews undertaken (eg. Bangladesh, Indonesia, Philippines, Seychelles, South Africa, United Kingdom). This question aims to find out whether programmes are being critically examined to determine whether they are having a positive effect in conserving and recovering turtle populations, according to certain measurable success criteria. A significant number of Signatories still appear not to have incorporated this important review process in their national marine turtle conservation efforts.

Activity Report

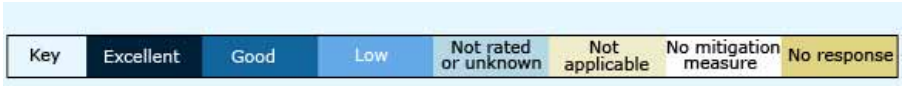
1.6.1 Measures to Reduce Mortality

1.6.1 Measures in place to minimise the mortality of eggs, hatchlings and nesting females and estimate of the relative effectiveness of these measures.[IND, SAP]

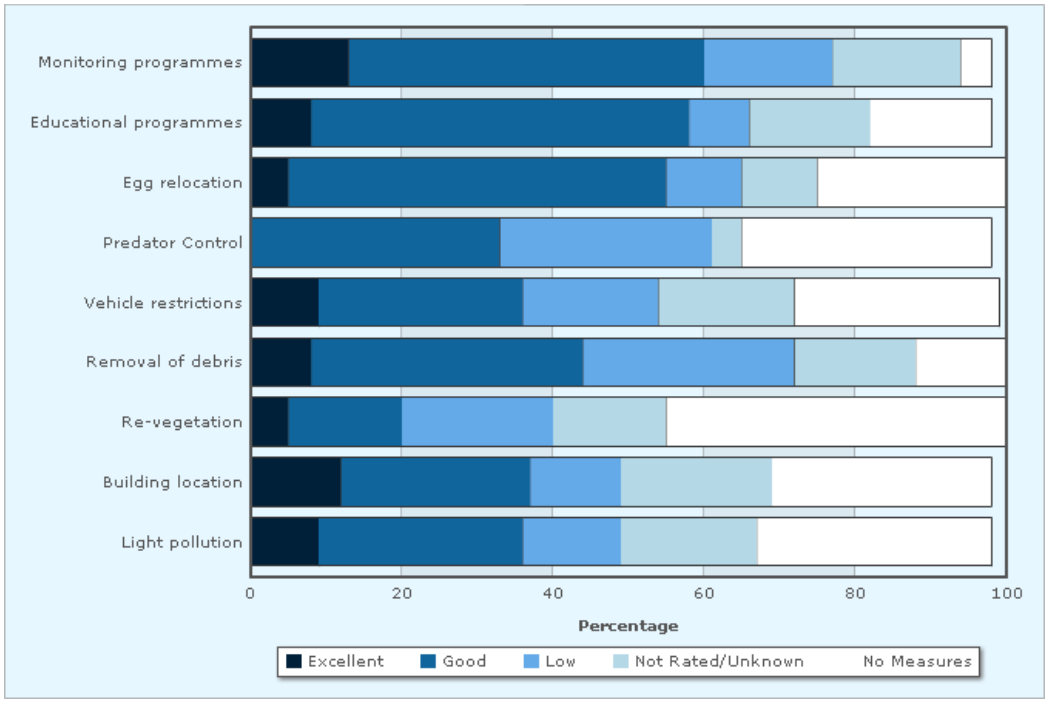
Relative Effectiveness of Mitigation Measures (Self-evaluation)



In the above matrix, the colour blue depicts the use of a particular mitigation measure, while the shade of blue indicates the relative effectiveness of that measure. The percentages in the chart and tables below are based on actual responses ('Not applicable' and 'No responses' are not counted.)



Relative Effectiveness of Mitigation Measures



OBJECTIVE II: PROTECTING, CONSERVING AND REHABILITATING MARINE TURTLE HABITATS

2.1 Establishment of habitat protection/conservation measures

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia

Critical habitats outside protected areas

82. Only a few Signatory States appear to have measures in place to protect critical habitat outside of established protected areas and, indeed, little information is given to suggest that these habitats have been clearly identified. In Australia, measures are centred on community-based approaches to sustainable management. Philippines encourages stakeholder agreements and foresees a "fast track" process for declaring critical habitats which would be quicker than the creation of protected areas. However the relevant regulation has yet to be approved. Other initiatives include the declaration of no fishing zones (India), community participation and awareness, alternative livelihoods, cash incentive and award schemes, eco-tourism and other monitoring activities (eg. Kenya, Viet Nam, Sri Lanka). The level of detail in most of the responses is insufficient to assess what is actually being done, and this may be a reflection of the difficulty of achieving adequate protection outside of established areas.

Coastal development impacts and mitigation

83. About three-quarters of the Signatory States responding carry out assessments, to varying degrees, of the environmental impact of marine and coastal development and other human activities. In many cases, general Environmental Impact Assessment (EIA) requirements are cited. Very few report having carried out impact assessments specifically addressing marine turtles in the context of coastal development; however this may understate the actual situation. A similar percentage of Signatory States monitor water quality, either generally or in localised areas, though these efforts tend not to be specific to marine turtle habitat. Australia provides detailed information on its programmes and plans. India reports on a temporary pilot project to monitor water quality near turtle habitat in West Bengal; while Myanmar carries out monitoring in one area known to be important for turtle nesting. More generally, it is less clear whether or what steps Signatories have taken to actually *protect or improve* water quality near turtle habitats, including removal of marine debris. In virtually all Signatory States (Bangladesh being the exception), some measure is in place to prohibit the use of poisonous chemicals and explosives, and most provide details of the legislation or regulations and inspection regimes. However, information reported elsewhere suggests that effective enforcement is problematic in many countries.

2.2 Rehabilitation of degraded habitats

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia, Bangladesh, Cambodia, Seychelles, Viet Nam

84. About two-thirds of the Signatory States that responded are monitoring their coral reefs and/or are making an effort at some level to recover degraded coral habitats. Most Signatory States describe their activities in this regard, at least superficially. Activities mentioned include monitoring and rehabilitation actions, baseline research and mapping, upgrading of legal protection status, development of recovery plans, relocation of sewage outfalls, reduction of specific threats, and conduct of education and awareness activities. Seychelles provides very detailed information on projects being implemented.

85. Almost 90 percent of the Signatory States that responded are making some effort to recover degraded mangrove habitats, and many of them describe these programmes in more detail, providing information on location and effectiveness. The importance of these habitats to marine turtles is generally not mentioned. In contrast, less than half of the Signatories responding are engaged in sea grass habitat monitoring and recovery, with Australia being the most active. Bangladesh, Cambodia and Comoros also mention efforts which in which they are involved, if only on a localised scale.

OBJECTIVE III: IMPROVING UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS

3.1 Targeted marine turtle and habitat studies

General tendency: Some progress, but limited in scope (major improvement since 2006)
Notable responses: Australia, Philippines, Seychelles, South Africa, United Kingdom

Published literature

86. Almost all of the Signatory States cite literature relevant to marine turtle research and conservation in their country, ranging from peer-reviewed journals to reports and proceedings of workshops. Many of the lists are quite extensive (eg. Australia, India, Indonesia, Oman, Seychelles, South Africa), and provide a good starting point for a more comprehensive bibliography. A few Signatories could improve their references to bring them up to a comparable standard, and some countries that are known to have conducted extensive research should try to supplement their existing entries.

Long-term monitoring

87. About 85 percent of the Signatory States are reported to have long-monitoring programmes in place or planned for priority marine turtle populations, for which varying levels of detail are provided. Bahrain, Eritrea, Madagascar, and Mauritius are reported to be among the exceptions. On closer examination, however, it appears that only about half of the mentioned programmes are of 10 years or longer duration, based on the information given. Australia, Bangladesh, Comoros, Indonesia, Oman, Seychelles, South Africa, Sri Lanka, and United Kingdom fall into this elite category. There is good reason to believe that dedicated programmes in several other countries, started in the last 5 years or so, will be extended indefinitely. For clarity, it would be useful if all Signatories States were to indicate when their monitoring programmes began and mention, as appropriate, the species concerned and whether there have been any breaks in data collection.

Genetic studies

88. Australia, Indonesia, Seychelles, Thailand, United Kingdom, United States and Viet Nam all report having carried out or having participated in analyses to characterise the genetic identity of their marine turtle populations. A dozen more Signatories (Comoros, India, Islamic Republic of Iran, Kenya, Madagascar, Myanmar, Oman, Philippines, South Africa, Sri Lanka, and United Republic of Tanzania) have collected or have contributed samples for use in ongoing research. The extent to which this extensive work is being coordinated is unclear. Consideration should be given to consolidating the results in comprehensive overview document. As a starting point, all Signatories are encouraged to contribute basic details of the genetics work undertaken in their countries to the new Genetics Directory added to the IOSEA website in May 2008.

Tagging studies

89. Almost all Signatory States responding have employed tagging to try to identify migration routes. Most provide some details of this work including, in a few cases, information on tag recoveries and plans for future activities. The United Kingdom is unique in actually presenting brief conclusions drawn from this work. The IOSEA reporting system offers an ideal platform for consolidating all information on regional tag recoveries in one place. In general, if it is not feasible for Signatories to include specific details of international tag recoveries in their national reports (for instance, because of space considerations), reference should be given to published reports where this information may be obtained.

Satellite tracking studies

90. Just over half of the Signatory States responding have carried out satellite tracking studies, for the most part opportunistically. The numbers of turtles tracked are relatively small. Some provide limited information on certain aspects of this work, such as species tracked, location, year, type of transmitter etc. A few mention briefly the results obtained, publications arising from the work, and future planned

activities. In general, though, the additional information provided by Signatories is insufficient to assess the efficacy of satellite tracking studies overall or to help guide the direction of future work in this area. A basic template being developed for the Western Indian Ocean – Marine Turtle Task Force might help to standardise information requirements in this regard. For this satellite tracking work to be better coordinated and to achieve its intended purpose of identifying migration patterns, all concerned Signatories should supply more information on the results they obtain as well as their plans for future studies.

Population dynamics and survival rate studies

91. Less than half of the Signatory States report having carried out studies of marine turtle population dynamics and/or survival rates. It is difficult to judge the scientific value of the work undertaken based on the rather limited and variable information supplied by most of the respondents. Australia, South Africa, and United Kingdom appear to have done the most extensive work in this area; they provide detailed information and include some references to original sources.

Disease studies

92. Ten of the Signatory States responding have carried out some research on the frequency and pathology of diseases of marine turtles; a few mention fibropapilloma in particular. The intensity of the research and the frequency of data collection vary. Australia, Indonesia, and United States appear to have conducted the most rigorous investigations in this regard. It would be helpful all of the Signatories cited published and unpublished reports systematically and if the nature of the work undertaken were described in more detail.

Traditional knowledge

93. About two-thirds of the Signatory States reporting indicate that they are promoting the use of traditional ecological knowledge in research studies. Most provide some additional information on the nature of this collaboration (eg. information gained from interviews, consultations and other forms of practical cooperation). Bangladesh, Eritrea, Madagascar, Oman, Philippines, Seychelles and Sri Lanka are among those providing brief examples. Only Australia has indicated supporting publications. In general, it would be helpful if countries that have incorporated traditional knowledge in research studies were to cite published and unpublished reports, and describe in more detail the nature of these interactions.

3.2 Collaborative research and monitoring

General tendency: Some progress, but limited in scope (very substantially improved since 2006)
Notable responses: Australia, Indonesia, Jordan, Myanmar, South Africa, Viet Nam

Regional or sub-regional action plans

94. About half of the Signatory States are participating in other regional or sub-regional action plans that identify priority research and monitoring needs. These include: a Marine Turtle Action Plan under the Pacific Regional Environment Programme (cited by Australia); SACEP's Marine Conservation and Protected Areas programme (mentioned by Bangladesh); the WIOLAB project under the Nairobi Convention (identified by Comoros) and the South Western Indian Ocean Fisheries Project (SWIOFP) mentioned by Mauritius; the Sulu-Sulawesi Marine Ecoregion and Bismarck-Solomon Seas Ecoregion initiatives (mentioned by Indonesia); a regional action plan being implemented under PERSGA in which Jordan is participating; the Philippines-Malaysia Turtle Islands Heritage Protected Area (TIHPA) initiative; a 1996 IUCN Marine Turtle Conservation Strategy and Action Plan for the Western Indian Ocean (cited by Seychelles and United Republic of Tanzania); the ASEAN Marine Turtle MoU (cited by Viet Nam); cooperative research under SEAFDEC and the SEASTAR2000 projects in South-East Asia (cited by Myanmar, Philippines, Thailand and Viet Nam); and the Nairobi Convention/IOSEA Western Indian Ocean – Marine Turtle Task Force (mentioned by South Africa, United Kingdom). The Islamic Republic of Iran and India also mention bilateral arrangements in place or planned with neighbouring countries. Other Signatories States that are involved in marine turtle conservation activities through sub-

regional frameworks, projects or other bilateral/multilateral arrangements are encouraged to mention them explicitly and briefly describe their involvement.

Collaborative studies and monitoring

95. Signatory States were requested to identify collaborative studies and monitoring that have elicited *international* (as opposed to *national*) cooperation. Almost three-quarters of the Signatory States report having conducted studies on genetic identity that involved collaboration and partnerships with other countries (for example, in the analysis of samples). In some cases, details are given under section 3.13 of the reports. Approximately the same number have reportedly undertaken collaborative studies on migration (often involving tagging and tag returns, and satellite tracking). Fewer Signatories (about half) are involved in international collaboration in relation to conservation status and other biological and ecological aspects. For instance, both Comoros and South Africa mention partnerships with Kélonia (Réunion) for exchange of information, research and capacity building. In general, the quality and amount of detail in the responses in these sections vary greatly, making it difficult at times to interpret the information provided. The extent to which these studies can be characterised as really involving *international* collaboration is sometimes unclear.

3.3 Analysis and use of data to improve conservation practices

General tendency: Some progress, but limited in scope (major improvement since 2006)
Notable responses: Australia, South Africa

Priority marine turtle populations

96. Signatory States were requested to list in order of priority their marine turtle populations in need of conservation actions and to indicate for each of them population trends. Most of the Signatories reporting at least give a list of the priority species/populations and about two-thirds include census or trend data in support of their selection. Australia, Kenya, and Pakistan accord equal priority to all marine turtle species found in their waters. **Green turtles** figure high on the list of 11 Signatories: Bahrain, Bangladesh, Comoros, Eritrea, Indonesia, Islamic Republic of Iran, Jordan, Mauritius, Philippines, Seychelles (some islands), and United Kingdom. **Hawksbill turtles** figure high in the list of 7 Signatories: Bahrain, Bangladesh, Islamic Republic of Iran, Jordan, Seychelles (some islands), Sri Lanka, and United Kingdom; **Leatherback turtles** figure high in the list of 6 Signatories: India, Indonesia, South Africa, Sri Lanka, Thailand and Viet Nam. Olive ridley turtles figure high on the list of 4 Signatories: Eritrea, India, Philippines, and Thailand. **Loggerhead turtles** figure high on the list of three Signatories: Madagascar, South Africa and Viet Nam. If answered comprehensively by all Signatory States, the responses to this query have the potential to help guide the direction of future collective actions, by identifying species/populations most in need of attention as well as countries that share common concerns.

Review and practical application of research and monitoring

97. Over half of the Signatory States are reportedly reviewing research and monitoring results periodically and evaluating them for their efficacy; but only 5 or 6 provide additional information that suggests that these reviews have resulted in programmatic changes. For example, Australia, Jordan, South Africa, and Thailand provide further details in this regard. Signatory States were also asked to describe how research results are being applied to improve management practices and mitigation of threats. A number of Signatory States provide informative responses, among them: Australia, Bahrain, Bangladesh, India, Indonesia, Seychelles, South Africa and United Republic of Tanzania. These two questions go to the heart of whether or not research programmes are well-thought out, are being applied strategically to help improve conservation outcomes, and are modified as necessary in the light of objective evaluations. While both are considered highly pertinent, it may be a challenge for some Signatories to answer them.

3.4 Standardisation of data collection and exchange of information

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia, South Africa

Standardisation of data collection

98. Nearly three-quarters of the Signatory States responding have taken some initiative to standardise methods and levels of data collection – though mostly at national, rather than sub-regional levels – and most provide at least a brief account of the efforts made in this regard. Eritrea, India, Indonesia, Kenya, Myanmar, Seychelles, and United Kingdom are among those offering some insights. It may be useful for Signatories that have adopted standardised methods, including data collection sheets, to provide details and copies to the IOSEA Secretariat, with a view to making them available for examination through the IOSEA website. This could reinforce efforts to assure a degree of harmonisation of data collection across the region, and indicate a minimum level of data requirement.

Scientific and technical exchanges

99. More than half (15) of the Signatory States responding occasionally exchange scientific and technical information and expertise with other Range States. Three – Australia, Comoros, and United States – reportedly do so often (systematically). The remainder rarely or never exchange information and expertise. The responses suggest that there is considerable room for improvement in this area.

100. Common means of disseminating data to other Range States are publications (scientific and technical reports, websites, brochures, newsletters etc), followed by international meetings, workshops and training courses. Television, radio, personal communications and collaborations, exhibitions, displays, and presentation of practical research are some of the other methods listed. With few exceptions, however, it is not evident that these methods are targeted specifically towards other Range States in order to convey information that might be valuable for conservation/management actions (e.g. related to ongoing research, new findings, innovative techniques, unusual levels of turtle mortality, potential threats, etc.). In general, the benefits/outcomes actually achieved from these interactions are not described, nor is an indication given as to what methods have worked and which have been less effective for exchanging useful information with other countries. All Signatories could improve their reporting in this regard.

101. Well over half of the Signatory States report compiling and exchanging data on marine turtle populations of a regional interest, for example through regional mapping systems, national databases and exchange of information on tagging, tag returns, migration and shared feeding grounds. The responses of several Signatories suggest recognition of the importance of, and interest in, compiling information pertinent to other Range States, however few details of actual exchanges are provided.

OBJECTIVE IV: INCREASING PUBLIC AWARENESS AND ENHANCING PUBLIC PARTICIPATION

4.1 Establishment of education and information programmes

General tendency: Some progress, but limited in scope (tending to good progress) – improved since 2006
Notable responses: Australia, Philippines, Seychelles

Education and awareness materials

102. Virtually all of the Signatory States responding have to some extent collected, developed, and/or disseminated diverse educational materials specifically focussing on marine turtle conservation, and many have developed and implemented mass media information programmes through television, radio, documentaries, and/or newspapers. Australia, Kenya, Myanmar, Philippines, Seychelles, Sri Lanka, and Viet Nam appear to have been especially active in these areas. In general, if Signatories were to provide a more complete and descriptive inventory (including titles, brief explanation of content, target audience, years of production, language versions), this might give a better sense of whether further initiatives are needed – in terms of additional materials, expanded geographic coverage etc. and whether any materials already produced might be used, or adapted for use, in other countries. This may be particularly relevant in the case of costly undertakings, such as videos, which might have wider application.

Target groups

103. Among the recognized target groups: students, teachers, local/fishing communities and the media appear to have received the most attention (by 70-80 percent of the Signatories reporting); followed by tourists, and policy makers (targeted by about one-half of Signatories). The military, fishing industry and scientists appear to have received lesser attention, having been targeted by only about one-third of Signatories responding. The limited focus of awareness and education campaigns on the fishing industry is noteworthy. Australia, Indonesia, Myanmar, Seychelles, South Africa and United Kingdom are among those providing interesting insights into their respective programmes.

Community learning establishments

104. Three-quarters of the Signatory States responding have some community learning establishment, variously described as information centres, displays, interpretative centres, “turtle houses”, “environmental corners” and “wildlife clubs”. It would be useful for Signatories to indicate the extent to which these centres are frequented by the public, whether they are staffed full- or part-time, or only seasonally; as well as the general impact they appear to be having – as measured, for example, by changes in peoples' behaviour in the vicinity of nesting beaches.

4.2 Development of alternative livelihood opportunities

General tendency: Some progress, but limited in scope (unchanged since 2006)
Notable responses: Australia, Philippines, South Africa, United Republic of Tanzania, Viet Nam

105. Nearly two-thirds of the Signatory States responding have undertaken initiatives to identify and facilitate alternative livelihoods, including income-generating activities, for local communities. The range of initiatives include: aquaculture (Australia); horticultural activities, beach protection and tourism services (Bangladesh); construction and nesting beach tourism (Comoros); turtle-based ecotourism and management (Indonesia); work as rangers, guides and marine park employees (Jordan); marine waste-based handicrafts (Kenya); general tourism activities (Kenya, Madagascar, Sri Lanka), mangrove rehabilitation (Pakistan); provision of soft loans (Philippines); artisan re-training and compensation (Seychelles); beach monitoring/nest protection (South Africa, United Republic of Tanzania), and handicraft skill development and credits for conversion to aquaculture, agricultural or forest activities (Viet Nam).

4.3 Promotion of public participation

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia, Kenya, Madagascar, Seychelles, Sri Lanka, Viet Nam

Stakeholder involvement

106. Almost all Signatory States have undertaken some initiative to involve stakeholders and local communities in the planning and/or implementation of conservation and management measures. This is achieved through active collaboration, participation in research and conservation programmes, as well as in planning processes. Australia describes in some detail the extensive initiatives it has undertaken. Other particularly informative responses were provided by Bangladesh, India, Indonesia, Kenya, Pakistan, Philippines, Seychelles and Sri Lanka. It would be worthwhile for all Signatory States that have given brief, though very interesting, responses to the questions on alternative livelihoods and stakeholder involvement to elaborate further (describing the programmes in more detail and including time frames, cost etc.; mentioning challenges faced/overcome, as well as any insurmountable difficulties; overall effectiveness; potential for replication elsewhere etc.)

Government, NGO, private sector involvement

107. Almost all of the Signatory States responding report some collaboration in marine turtle conservation efforts from Government institutions, NGOs, and the private sector – through funding of activities, involvement in workshops, and/or research and conservation activities. A number of initiatives are noteworthy: funding of various nongovernmental initiatives in Australia through a National Heritage Trust, as well as the establishment of a National Turtle Recovery Group; the formation of a broad-based national sea turtle conservation group in Kenya, known as KESCOM; Seychelles' encouragement of the private sector and coastal residents to become involved in conservation projects, including monitoring; South African parastatal, NGO and private sector involvement under the aegis of a new national turtle conservation policy; establishment of national turtle conservation steering committees in Bangladesh, Sri Lanka and United Republic of Tanzania; and close collaboration among relevant Government agencies and NGOs in Viet Nam.

OBJECTIVE V: ENHANCING NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION

5.1 Cooperative enforcement of trade regulations

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia, Indonesia, Seychelles

Illegal international trade

108. Nearly 80 percent of the Signatory States responding have mechanisms in place and cooperate with other States to try to deter illegal *international* trade. Many provide further details of the nature of these measures. The responses of Australia, India, Indonesia, Kenya, Philippines, and Seychelles are among the most informative. In general, collaborators include CITES Management Authorities/CITES Secretariat; Interpol; domestic or foreign customs services; airport, port and coast guard authorities; specialised enforcement networks; wildlife agencies; and various concerned NGOs (such as TRAFFIC). About three-quarters of the Signatories reportedly have undertaken a national review of their compliance with CITES obligations in relation to marine turtles. However, the additional explanations that are given provide little clarification and, indeed, suggest that the question may not have been fully understood. A similar number of countries have their own CITES training programmes for relevant authorities or participate/cooperate in those of other bodies; but only a handful provide details.

Illegal domestic trade

109. Almost all of the Signatory States that responded have measures in place to prevent, deter and eliminate illegal *domestic* trade in marine turtle products. Seychelles provides the most detail in this regard, referring to legislation, public partnerships, interagency collaboration, training, and education and awareness programmes. Among the measures mentioned by other Signatory States are: beach patrols and regular monitoring (Islamic Republic of Iran, Kenya, Philippines, United States), education and awareness programmes aimed at coastal communities (Pakistan, View Nam); training of law enforcement personnel (Sri Lanka); investigation of poaching reports (United States); monitoring of ports, airports and other areas where illegal trade may occur (Philippines); cooperation with other agencies, such as the customs service (Australia); and prosecution of cases and imposition of fines for violations (Indonesia, Mauritius, United Republic of Tanzania). A number of Signatories draw attention to gaps or difficulties in enforcement (eg. Eritrea), particularly in remote areas (Myanmar), and where there is a dependency on egg harvest for subsistence (Indonesia).

Information exchange on compliance/illegal trade issues

110. Very few Signatory States (eg Australia, Comoros, Kenya, Seychelles, Viet Nam) appear to have exchanged information or raised certain compliance and/or trade issues in bilateral discussions or international forums, and few details are provided in this regard. No Signatory mentioned any particular impediments to identifying illegal trade routes or deterring illegal trade, although such illegal trade is known to occur. This suggests that these issues may be under-reported. Particular instances of successful interventions and prosecutions could be mentioned, as well as any difficulties experienced that impede more progress in this area. Signatory States may wish to cite (i.e. provide a reference to) existing published reports prepared for CITES purposes, in order to give a more ample explanation.

5.2 Management issues identified; national actions prioritised

General tendency: Some progress, but limited in scope (major improvement in reporting since 2006)
Notable responses: Australia, Jordan, Philippines, Seychelles, South Africa, Sri Lanka, United Kingdom, Viet Nam

Key management measures / national action plans

111. Over three-quarters of the Signatory States that responded have taken steps towards developing a set of key management measures to be used as a basis for more specific national action plans. Eight Signatory States (Australia, Comoros, Kenya, Mauritius, Myanmar, Seychelles, United Kingdom, and Viet Nam) already have national action plans in place. At least ten other Signatories (Bangladesh, Eritrea, Indonesia, Jordan, Kenya, Pakistan, South Africa, Sri Lanka, Thailand, and possibly United Republic of Tanzania) are working towards national plans, many of which appear to be at an advanced stage of development or review. Two Signatories (Oman, Philippines) do not have national action plans *per se*, but have incorporated measures through specific project activities or management plans at particular sites. Four of the Signatories responding – Bahrain, Cambodia, Islamic Republic of Iran, and Madagascar – reportedly have no national plans; although the latter mentions existing work that could constitute elements of an eventual plan.

112. Overall, very good progress is being made in this area, although limited information is available on the extent to which the provisions of the IOSEA Conservation and Management Plan have been transformed into broad objectives (key management measures) at the national level. Only a few Signatories appear to have a requirement for periodic review of their national plans for turtle conservation. The principle of incorporating a formal review process – as Australia, Kenya and Philippines have done – is considered essential to successful implementation.

113. Signatory States were requested to identify the conservation and management activities that they consider to be among the highest priorities for action. Almost all responded, listing between 5 and 10 priorities fitting into one of the Conservation and Management Plan's 24 programmatic areas. Ranked in order of frequency of mention (noted in parentheses), the seven highest priorities identified by the

Signatory States are: **conducting targeted studies on marine turtles and their habitats** (28); **establishing habitat protection and conservation measures** (21); **establishing or strengthening education and information programmes** (16); **capacity-building, training and partnerships** (15); **reducing incidental capture and mortality** (10); **identifying and documenting threats** (8); and **developing beach management programmes** (8). Many other programmes were mentioned, but with less frequency (Table 8).

114. While these results are not unexpected, the analysis can be interpreted in different ways, and one must be cautious in reading too much into them. For example, a programme might not be identified as a high priority not because it is considered unimportant, but because considerable progress may already have been made in that area. On the other hand, a challenging area of work requiring more resources and time might be accorded less priority than one that is easier to implement with visible results (characteristic of the "low hanging fruit" syndrome). By way of example, only one Signatory State attached high priority to the development of alternative livelihoods (ranked 20th out of 24 overall), despite the obvious relevance of this area to the sustainability of marine turtle populations.

115. As a final remark, in future it might be helpful if all Signatories were to provide some explanation or further elaboration of the priorities they have listed. This would include, where appropriate, more precise information on location of the activity, other actors that may need to be involved, and approximate time frames within which the programme of work should ideally be conducted.

Local management issues requiring international cooperation

116. Almost all of the Signatory States responding list one or more local management issues for which they consider international cooperation necessary to some extent (Table 9). **Cooperative research** in several areas (habitat and genetics studies, tagging/satellite tracking, identification of migration routes) figured prominently, with 18-19 Signatories rating international cooperation as "important or essential". This was followed closely by **illegal fishing in territorial waters and training/capacity building.** There was not much to distinguish between several other important issues, which were identified with more or less equal frequency (eg. identification of turtle populations, hunting/harvest by neighbouring countries, enforcement/patrolling of territorial waters, poaching/illegal trade in turtle products).

117. This "broad brush" survey may have some value in providing a quick snapshot of Signatory State opinions, but it is difficult to draw definitive conclusions from it, perhaps because of the difficulty of attributing 'shades of importance' to a wide range of issues that are all fundamentally important. Perhaps if more Signatories were to elaborate on their "tick box" responses with written explanations (as, for example, Australia, Seychelles, South Africa, and United Kingdom have done), the findings could be the basis for a more informed discussion about priorities for international collaboration.

5.3 Enhancement of information exchange and cooperative management

General tendency: Very limited progress (improved since 2006)
Notable responses: Australia

Other mechanisms for sub-regional cooperation

118. Most of the Signatory States note some mechanism that is, or might potentially be, used to enhance cooperation in relation to marine turtle conservation and management at the sub-regional level, including for example: ASEAN-SEAFDEC (cited by Myanmar, Philippines); the Bismarck-Solomon Seas Ecoregion initiative (cited by Indonesia); CBD and CITES (both cited by Bangladesh); FAO (cited by Viet Nam); GCC Permanent Committees for Fisheries and Environment (cited by Bahrain); the International Sea Turtle Society (cited by United States); the Nairobi Convention/IOSEA Western Indian Ocean – Marine Turtle Task Force (cited by Eritrea, South Africa); the Pacific Regional Environment

Table 8. Signatory States' highest conservation and management priorities (ref. para. 113)

Programme (from the CMP)	No. of mentions	Signatory States attaching high priority to the programme
3.1 Conduct targeted studies on marine turtles / habitats	28	Australia, Bangladesh x 2, Cambodia x 3, Eritrea, Indonesia, Islamic Republic of Iran x 2, Jordan, Kenya x 2, Madagascar, Mauritius x 4, Myanmar, Philippines x 2, South Africa, Sri Lanka x 2, Thailand, United Kingdom x 2, Viet Nam
2.1 Establish habitat protection/conservation measures	21	Australia x 4, Bangladesh, Cambodia x 2, Eritrea, Indonesia, Islamic Republic of Iran x 2, Kenya x 2, Madagascar x 2, Mauritius, Philippines x 3, Thailand, Viet Nam
4.1 Establish / strengthen education, information programmes	16	Bangladesh, Cambodia, Comoros, Eritrea, Indonesia, Jordan, Kenya, Madagascar, Mauritius, Myanmar, Philippines, Seychelles, South Africa, United Kingdom, United Republic of Tanzania , Viet Nam
5.4 Capacity building, training, partnerships	15	Bangladesh, Cambodia, Comoros, Eritrea, Kenya, Mauritius, Myanmar, Oman, Philippines, Seychelles x 2, South Africa, Sri Lanka x 2, Viet Nam
1.4 Reduce incidental capture and mortality	10	Australia, Eritrea, Kenya, Myanmar, Seychelles, South Africa, Thailand, United Kingdom, United Republic of Tanzania , Viet Nam
1.1 Identify and document threats	8	Indonesia, Islamic Republic of Iran x 2, Mauritius, Myanmar, Oman, Philippines, Viet Nam
1.6 Develop nesting beach management programmes	8	Australia, Cambodia, Indonesia, Islamic Republic of Iran, Oman, Sri Lanka, United Kingdom, United Republic of Tanzania
1.2 Identify/apply best practices	7	Bangladesh, Comoros, Eritrea, Indonesia, Islamic Republic of Iran, Madagascar, Philippines
2.2 Rehabilitate degraded habitats	7	Australia, Cambodia, Indonesia, Jordan, Kenya, Myanmar, Seychelles
4.3 Enhance public participation	7	Australia, Comoros, Eritrea, Mauritius, Myanmar, Seychelles, Thailand
5.3 Enhance cooperation, information exchange mechanisms	7	Bangladesh, Comoros, Kenya, Myanmar x 2, Seychelles, Sri Lanka
6.3 Seek additional resources to support implementation	6	Comoros, Eritrea, Indonesia, Jordan, Mauritius, Seychelles
1.3 Conduct studies to correct adverse incentives	5	Bangladesh, Madagascar, Myanmar, Oman, Philippines
1.5 Prohibit direct harvest/ domestic trade, except for traditional use	5	Australia, Eritrea, Indonesia, Madagascar, United Republic of Tanzania
3.4 Standardise data collection / exchange information	5	Madagascar, Mauritius, Philippines, Sri Lanka, Thailand
5.5 Review legislation / strengthen enforcement	5	Bangladesh, Cambodia, Indonesia, Kenya, Madagascar
3.2 Conduct collaborative research / monitoring	4	Australia, Oman, Philippines x 2
5.1 Cooperate to enforce trade regulations	4	Myanmar x 2, Philippines, Seychelles
3.3 Analyse/use data to improve conservation practices	3	Islamic Republic of Iran, Philippines x 2
4.2 Develop alternative livelihood opportunities	1	Philippines
5.2 Develop/implement action plans	1	South Africa
6.1 Broaden MoU membership	1	South Africa
6.4 Improve government coordination	1	Indonesia
6.2 Support Secretariat, Advisory Committee	0	None

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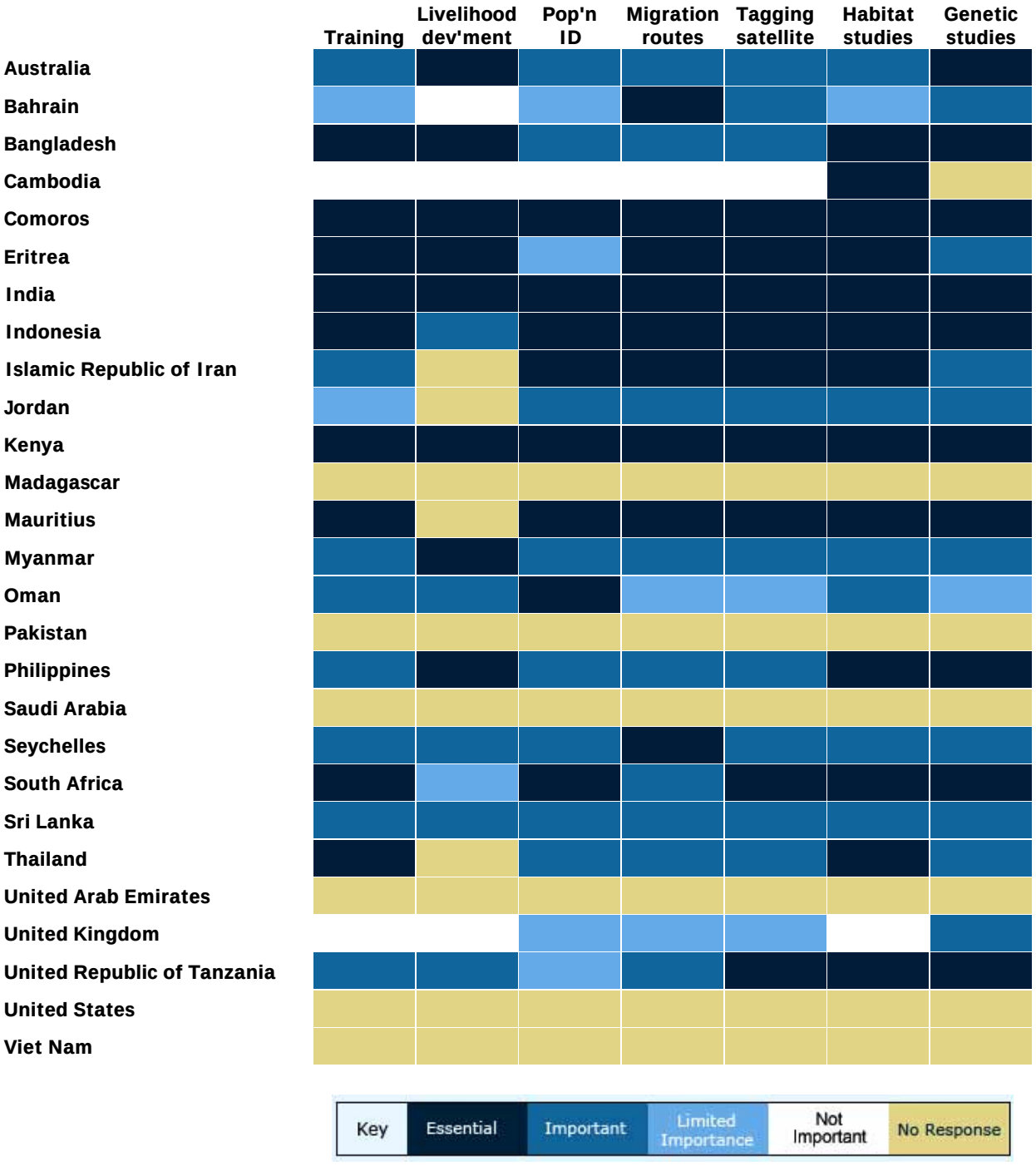
5.2.3 Local Management Issues

5.2.3 Please indicate, from your country's standpoint, the extent to which the following local management issues require international cooperation in order to to achieve progress. [PRI]

Importance of international cooperation in these issues

	Illegal Fishing	Incidental Capture	Patrol Waters	Hunting	Trade	Gear Technol	Pollution
Australia							
Bahrain							
Bangladesh							
Cambodia							
Comoros							
Eritrea							
India							
Indonesia							
Islamic Republic of Iran							
Jordan							
Kenya							
Madagascar							
Mauritius							
Myanmar							
Oman							
Pakistan							
Philippines							
Saudi Arabia							
Seychelles							
South Africa							
Sri Lanka							
Thailand							
United Arab Emirates							
United Kingdom							
United Republic of Tanzania							
United States							
Viet Nam							


Training
Livelihood dev'ment
Pop'n ID
Migration routes
Tagging satellite
Habitat studies
Genetic studies
Australia
Bahrain
Bangladesh
Cambodia
Comoros
Eritrea
India
Indonesia
Islamic Republic of Iran
Jordan
Kenya
Madagascar
Mauritius
Myanmar
Oman
Pakistan
Philippines
Saudi Arabia
Seychelles
South Africa
Sri Lanka
Thailand
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States
Viet Nam
Key
Essential
Important
Limited Importance
Not Important
No Response

Programme (cited by Australia); PERSGA (cited by Bahrain, Eritrea); ROPME (cited by Bahrain, Islamic Republic of Iran, Jordan, Oman); SACEP (cited by Bangladesh); the Sulu-Sulawesi Marine Ecoregion initiative (cited by Indonesia); a WWF Asia-Pacific Regional Action Plan for Marine Turtles (cited by Australia); and WIOMSA (cited by South Africa); as well as specific working groups, exchange programmes, memoranda of understanding, and collaborative forums (mentioned by Australia, Comoros, Philippines). This question was intended to differ from an earlier one (3.2.1), by seeking an indication of the potential interest and particular strengths that the named organisations might bring to marine turtle conservation in the IOSEA region, as well as their capacity to take on a broader coordination role at the sub-regional level. For the most part, the brief explanations given are not specific in this regard, and could be strengthened by further elaboration.

Networks for cooperative management

119. A number of Signatory States report having developed, or are participating in, networks for cooperative management of shared populations. *(The intent of this question was to focus on formal management arrangements for shared turtle populations, rather than routine collaboration or information exchange; which probably excludes some of the positive responses.)* Australia is collaborating with Indonesia, Papua New Guinea, Timor-Leste and the Pacific Regional Environment Programme, through various instruments. Australia, Oman, Philippines and South Africa indicate involvement in the establishment of transboundary marine protected areas: Australia describes an arrangement with Papua New Guinea; Oman is working within the framework of ROPME; Philippines concluded a memorandum of agreement with Malaysia to create the Turtle Islands Heritage Protected Area (TIHPA) and is a partner in a tri-partite conservation plan for the Sulu-Sulawesi Marine Ecoregion; and South Africa is engaged with Mozambique in the creation of a transboundary park.

Regional Fishery Bodies

120. Signatory States were asked to indicate what steps they have taken to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within EEZs and on the high seas. With very few exceptions, the responses so far provided to this question are generally not informative.

5.4 Capacity building / strengthening of training programmes, partnerships

General tendency: Some progress, but limited in scope (virtually unchanged since 2006)
Notable responses: Australia, Jordan, Kenya, Philippines, Seychelles, South Africa, Sri Lanka, Viet Nam

Capacity-building and resource needs

121. The most common capacity-building need identified is for trained personnel, including individuals specially trained in sea turtle biology, ecology, veterinary medicine, necropsies, monitoring/surveys, gear technology, law enforcement, as well as "trainers" who can work with volunteers, students and researchers. Indonesia mentions the need for education in local communities to enhance their knowledge of turtle conservation and to enable them to develop alternative sources of income. South Africa mentions the importance of collaborating with scientists outside of the region to provide expertise that does not currently exist in-country.

122. A number of respondents identify a need for equipment and infrastructure, such as patrol boats, field and office equipment, DNA analysis facilities, and environmental education centres. Numerous requirements are mentioned under the ambit of research, educational programmes, conservation awareness, working with fishermen, and developing eco-volunteer programmes. It would be useful for Signatory States for which this question is relevant to indicate what their existing capacity is, both in terms of human resources and equipment available for marine turtle conservation activities, and to give a clearer picture of the extent to which progress is impeded in specific areas for lack of such resources.

Training

123. Most of the Signatory States responding have carried out some training in marine turtle conservation and management techniques. Australia, Eritrea, Myanmar, Seychelles, and Viet Nam describe rather extensive activities undertaken in this area, including regular specialised training workshops, provision of funds to regional conservation groups, development of a code of conduct for tourist operators, and production of training manuals etc. In general, it would be helpful if Signatory States were to describe their training activities in more detail (mentioning time frames, frequency, numbers trained, titles of any publications produced etc.) in order to give a clearer picture of their efficacy and a possible need for more intensive activity. This might also help to demonstrate where synergies could be created among Signatories through joint (e.g. bilateral or sub-regional) activities. Finally, it is not clear from the responses given whether or how training is coordinated *regionally*, although mechanisms for collaboration in this area are known to exist in some sub-regions.

Partnerships

124. Over two-thirds of the Signatory States responding have established one or several partnerships with universities, relevant organisations, and research institutions nationally and/or internationally. The range of partnerships varies among countries. Australia, in particular, names an extensive and diverse array involving government, community groups, researchers, indigenous communities, NGOs and universities. Comoros, Kenya, Myanmar, Oman, Philippines, Seychelles, and South Africa are also among those providing brief explanations. In almost all cases, it would be helpful if respondents were to describe these partnerships in more detail, particularly if they bring any innovative approaches to turtle conservation and management that might be of interest or relevance to other Signatory States, as models of best practice.

5.5 Review of legislation / strengthening of enforcement

General tendency: Some progress, but limited in scope (improved since 2006)
Notable responses: Australia, Islamic Republic of Iran, Philippines, Seychelles, South Africa

Effectiveness of national policies and laws

125. Iranian laws, however lack of equipment and staff, and large numbers of sites pose logistical challenges. Mauritius reports that turtle populations are found on remote islets away from the mainland, making it difficult to conserve and protect their habitats. Philippines reports that effectiveness of national laws is good in some areas, where there is support from NGOs and grassroots 'people's organisations'. Seychelles notes that penalties for offences were increased significantly under amended legislation introduced in 2001, which appears to have had a deterrent effect. In South Africa, the system in place is reported to be very effective, with high enforcement associated with relatively few transgressions. The relevant legislation in Sri Lanka is also reported to be effective. United Republic of Tanzania notes a number of important deficiencies with regard to its legislation, as well as insufficient capacity to effectively enforce the laws relating to turtle conservation. Comoros, Indonesia, Kenya all report on resource limitations affecting implementation or enforcement.

Policy and legislative reviews

126. About two-thirds of the Signatory States responding have conducted or are conducting a review of policies and laws to address gaps or impediments in relation to marine turtle conservation. Some provide a brief elaboration without going into much detail (eg Bangladesh, Indonesia, Iran, Jordan, Kenya, Madagascar, Pakistan, Seychelles, South Africa, Thailand). It would be helpful if the nature of the review being, or having been, undertaken were described more thoroughly (e.g. to identify the legislation or regulation being reviewed; giving time frames for the initiation of the review as well as its expected/actual completion date; and possibly indicating whether there is a specific reason that necessitated the review).

Enforcement cooperation issues

127. Nine Signatory States report having encountered specific problems in relation to cooperation in law enforcement to ensure compatible application of laws across and between jurisdictions (national and international). The difficulties experienced include: the need for a practical arrangement to enable officers from one jurisdiction to assist in the implementation of legislation within another (internal to Australia); the detention of non-citizens suspected of committing an offence under Australian law involving the use of a foreign vessel; differences in legal specifications of fishing mesh sizes (Kenya); general cooperation and collaboration issues (Myanmar); enforcement of environmental laws at community levels (Oman); definitions of the limits of municipal waters for enforcement purposes (Philippines); identifying effective communication channels with neighbouring countries (South Africa); and lack of standardized guidelines for the management of hatcheries (View Nam). While many of these issues may be country-specific, a greater sharing of information among Signatory States about difficulties encountered and solutions arrived at might yield some practical ideas for application elsewhere.

OBJECTIVE VI: PROMOTING AND SUPPORTING IMPLEMENTATION

6.1 Institution strengtening

General tendency: Partial implementation, good progress (improved since 2006)
Notable responses: Australia, Philippines, South Africa

Broadening MoU membership

128. Notwithstanding the interest that Signatory States have in soliciting their neighbours to join and participate actively in the implementation of the Memorandum of Understanding, only eight Signatories (Australia, Bahrain, Eritrea, Indonesia, Kenya, Philippines, South Africa, United States and Viet Nam) are reported to have encouraged, or to have plans to encourage, other States to sign the agreement.

Amending the Memorandum of Understanding

129. Eight Signatory States (35 percent) indicated they are currently favourable to amending the MoU to make it a legally-binding instrument; while nine (39percent) were not in favour, and six had no view. Only 15 Signatories responded to the same question posed in a different way, assuming the amendment process were to occur over a longer time horizon. The results were largely inconclusive: 7 (26 percent) in favour, 3 (11 percent) opposed and 5 with no view. A few Signatories offer brief explanations for their current positions.

6.2 Support for Secretariat / Advisory Committee and IOSEA implementation

General tendency: Very limited progress (unchanged since 2006)
Notable responses: Australia, South Africa, United Kingdom, United States

130. Four Signatory States (Australia, South Africa, United Kingdom and United States) have provided substantial funding towards the operational costs of the Secretarat, for organising meetings and for project implementation including Year of the Turtle activities. Australia documents its contributions in detail. The United States has indicated that its Marine Turtle Conservation Act would in future provide a mechanism to support implementation of specific projects. Myanmar and Viet Nam describe mitigating circumstances.

6.3 Resources for domestic implementation

General tendency: Very limited progress (unchanged since 2006)
Notable responses: Australia

131. About a dozen Signatory States make some reference to domestic sources of funding for implementation of marine turtle conservation activities at the national level. However, with a few exceptions, the information is somewhat vague and non-specific when it comes to quantifying actual expenditures. Australia, Bangladesh and South Africa do attempt to give an approximation of expenditures on certain aspects of their programmes. All Signatory States are encouraged to try to document the resources that have been mobilised for implementation of marine turtle conservation activities, to serve as a benchmark for future comparisons.

Solicitation of funds

132. Over 80 percent of the Signatory States responding have solicited funds from, or have sought partnerships with, other Governments, major donors, industry, private sector etc for marine turtle conservation activities. The sponsors/partners include, among others: UNDP, World Bank, GEF, SEAFDEC, SWIOFP, WWF, WCS, Conservation International, and various other corporate donors and private foundations, including petroleum and gas industries, hotels, private companies etc. The approaches that have been attempted are quite diverse and seem not to be detrimentally competitive. It would be helpful if Signatories that were successful in securing external funding were to provide further information in order to provide a clearer picture of the effectiveness of these approaches. It would also be helpful to mention unsuccessful cases so that lessons might be learned from these experiences.

Use of economic instruments

133. Only eight Signatory States have explored the use of economic instruments for the conservation of marine turtles and their habitats; and the responses are little changed from those given in 2006. Few details are provided, but promotion of eco-tourism is cited as common theme. Examples include: eco-certification of tourism operations in the Great Barrier Reef Marine Park (Australia); turtle and nest adoption programmes (Kenya); revenue-generating eco-tourism activities (Comoros, Madagascar, Oman, Pakistan, Philippines, Viet Nam); soft loans to affected families (Philippines), and promotion of alternative livelihoods, such as aquaculture (Viet Nam). It would be helpful if Signatories that have such projects were to provide further information (e.g. on costs, amount of revenue generated by these initiatives, numbers of people taking part, benefits to local communities etc.); and to comment more generally on their efficacy and cost-effectiveness, including any mitigating factors – such as increased disturbance to turtles, degradation of habitat etc.

6.4 Government coordination/cooperation

General tendency: Partial implementation, good progress (improved since 2006)

Lead and supporting agencies

134. Most of the Signatory States responding have designated a lead agency responsible for coordinating national marine turtle conservation and management policy. A few (Islamic Republic of Iran, Jordan, Madagascar, and Sri Lanka) are apparently working towards that end through internal consultations. Responses to a related question – seeking to ascertain the roles and responsibilities of *other* government agencies that may have a peripheral interest – were more ambiguous. Only a few Signatory States (eg. Indonesia, Jordan, and South Africa) acknowledged in their responses other agencies that may be involved; suggesting that the question may not have been well understood by the majority.

Review of roles and responsibilities

135. Only about a third of the Signatories report having conducted a review of the roles and responsibilities of government agencies, and few details are provided. Of the sixty percent that had not conducted or completed such a review, several reported that it was contemplated (eg. Madagascar, Seychelles, South Africa, Thailand); while a few indicated that there was no need for further review since the mandates were already clear (eg. Indonesia, Pakistan, United Kingdom, and United States).

EVALUATION MATRIX: ALL SIGNATORY STATES, as at 31 JULY 2008

Programme	Australia	Bahrain	Bangladesh	Cambodia	Comoros	Eritrea	India	Indonesia	Islamic Rep. of Iran	Jordan	Kenya	Madagascar	Mauritius	Myanmar	Oman	Pakistan	Philippines	Saudi Arabia	Seychelles	South Africa	Sri Lanka	Thailand	United Arab Emirates	United Kingdom	United Rep. Tanzania	United States	Viet Nam	Overall Programme Average	
1.1 Overview given of species, habitats, achievements, challenges																												55	REDUCE MORTALITY
1.2 Best practices identified / applied to minimize threats																												54	
1.3 Studies conducted to correct adverse incentives																												49	
1.4 Fisheries interactions identified; incidental capture/mortality reduced																												32	
1.5 Turtle uses & values identified; legislation / management in place																												56	
1.6 Nesting beach management programmes developed																												42	
2.1 Habitat protected / monitored																												39	CONSERVE HABITAT
2.2 Degraded habitats rehabilitated																								*				43	
3.1 Basic species and habitat-related studies conducted																												41	CONDUCT RESEARCH
3.2 Collaborative research and monitoring conducted																												45	
3.3 Research results applied; management priorities identified																												43	
3.4 Data collection standardised/ information exchanged																												38	
4.1 Education, information programmes implemented																												46	ENHANCE AWARENESS / PARTICIPATION
4.2 Alternative livelihood opportunities developed																								*				36	
4.3 Public / private sector involvement encouraged																												38	
5.1 Trade regulations cooperatively enforced																												34	ENHANCE INTERNATIONAL COOPERATION
5.2 Mgmt. issues identified; national actions prioritised																												46	
5.3 Cooperative mgmt. and information exchange enhanced																												20	
5.4 Capacity building / training strengthened																												39	
5.5 Legislation reviewed; enforcement strengthened																												33	
6.1 New members solicited; MoU status considered																												51	PROMOTE IMPLEMENT-ATION
6.2 Secretariat / Advisory Committee supported																												12	
6.3 Resources sought for domestic implementation																												26	
6.4 Government coordination / cooperation improved																												50	
OVERALL AVERAGE: Signatory State																												40	

No information or no progress reported

Very limited progress

Some progress, but limited in scope

Partial implement-ation, good progress

Active intervention, very substantial progress

Full / near full implementation
*or N/A in few cases

EVALUATION MATRIX: WESTERN INDIAN OCEAN, as at 31 JULY 2008

Programme	Comoros	Kenya	Madagascar	Mauritius	Seychelles	South Africa	United Kingdom	United Rep. Tanzania	Overall Programme Average
1.1 Overview given of species, habitats, achievements, challenges									63
1.2 Best practices identified / applied to minimize threats									63
1.3 Studies conducted to correct adverse incentives									55
1.4 Fisheries interactions identified; incidental capture/mortality reduced									36
1.5 Turtle uses & values identified; legislation / management in place									67
1.6 Nesting beach management programmes developed									50
2.1 Habitat protected / monitored									44
2.2 Degraded habitats rehabilitated							*		53
3.1 Basic species and habitat-related studies conducted									47
3.2 Collaborative research and monitoring conducted									55
3.3 Research results applied; management priorities identified									48
3.4 Data collection standardised/ information exchanged									50
4.1 Education, information programmes implemented									45
4.2 Alternative livelihood opportunities developed							*		56
4.3 Public / private sector involvement encouraged									47
5.1 Trade regulations cooperatively enforced									34
5.2 Mgmt. issues identified; national actions prioritised									56
5.3 Cooperative mgmt. and information exchange enhanced									26
5.4 Capacity building / training strengthened									46
5.5 Legislation reviewed; enforcement strengthened									38
6.1 New members solicited; MoU status considered									58
6.2 Secretariat / Advisory Committee supported									19
6.3 Resources sought for domestic implementation									34
6.4 Government coordination / cooperation improved									53
OVERALL AVERAGE: Signatory State									48

No information or no progress reported

Very limited progress

Some progress, but limited in scope

Partial implement-ation, good progress

Active intervention, very substantial progress

Full / near full implementation
*or N/A in few cases

EVALUATION MATRIX: SOUTH-EAST ASIA+, as at 31 JULY 2008

Programme	Australia	Cambodia	Indonesia	Myanmar	Philippines	Thailand	United States	Viet Nam	Overall Programme Average
1.1 Overview given of species, habitats, achievements, challenges									59
1.2 Best practices identified / applied to minimize threats									56
1.3 Studies conducted to correct adverse incentives									46
1.4 Fisheries interactions identified; incidental capture/mortality reduced									41
1.5 Turtle uses & values identified; legislation / management in place									64
1.6 Nesting beach management programmes developed									58
2.1 Habitat protected / monitored									42
2.2 Degraded habitats rehabilitated									40
3.1 Basic species and habitat-related studies conducted									49
3.2 Collaborative research and monitoring conducted									59
3.3 Research results applied; management priorities identified									52
3.4 Data collection standardised/ information exchanged									42
4.1 Education, information programmes implemented									52
4.2 Alternative livelihood opportunities developed									31
4.3 Public / private sector involvement encouraged									42
5.1 Trade regulations cooperatively enforced									46
5.2 Mgmt. issues identified; national actions prioritised									50
5.3 Cooperative mgmt. and information exchange enhanced									28
5.4 Capacity building / training strengthened									51
5.5 Legislation reviewed; enforcement strengthened									38
6.1 New members solicited; MoU status considered									58
6.2 Secretariat / Advisory Committee supported									22
6.3 Resources sought for domestic implementation									33
6.4 Government coordination / cooperation improved									74
OVERALL AVERAGE: Signatory State									47

No information or no progress reported

Very limited progress

Some progress, but limited in scope

Partial implement-ation, good progress

Active intervention, very substantial progress

Full / near full implementation *or N/A in few cases

EVALUATION MATRIX: NORTHERN INDIAN OCEAN, as at 31 JULY 2008

Programme	Bangladesh	India	Pakistan	Sri Lanka	Overall Programme Average
1.1 Overview given of species, habitats, achievements, challenges					31
1.2 Best practices identified / applied to minimize threats					56
1.3 Studies conducted to correct adverse incentives					55
1.4 Fisheries interactions identified; incidental capture/mortality reduced					27
1.5 Turtle uses & values identified; legislation / management in place					47
1.6 Nesting beach management programmes developed					47
2.1 Habitat protected / monitored					48
2.2 Degraded habitats rehabilitated					46
3.1 Basic species and habitat-related studies conducted					43
3.2 Collaborative research and monitoring conducted					28
3.3 Research results applied; management priorities identified					38
3.4 Data collection standardised/ information exchanged					23
4.1 Education, information programmes implemented					58
4.2 Alternative livelihood opportunities developed					44
4.3 Public / private sector involvement encouraged					48
5.1 Trade regulations cooperatively enforced					36
5.2 Mgmt. issues identified; national actions prioritised					39
5.3 Cooperative mgmt. and information exchange enhanced					8
5.4 Capacity building / training strengthened					23
5.5 Legislation reviewed; enforcement strengthened					30
6.1 New members solicited; MoU status considered					40
6.2 Secretariat / Advisory Committee supported					0
6.3 Resources sought for domestic implementation					22
6.4 Government coordination / cooperation improved					40
OVERALL AVERAGE: Signatory State					37

No information or no progress reported

Very limited progress

Some progress, but limited in scope

Partial implement-ation, good progress

Active intervention, very substantial progress

Full / near full implementation *or N/A in few cases

EVALUATION MATRIX: NORTHWEST INDIAN OCEAN, as at 31 JULY 2008

Programme	Bahrain	Eritrea	Islamic Rep. of Iran	Jordan	Oman	Saudi Arabia	United Arab Emirates	Overall Programme Average
1.1 Overview given of species, habitats, achievements, challenges								54
1.2 Best practices identified / applied to minimize threats								39
1.3 Studies conducted to correct adverse incentives								40
1.4 Fisheries interactions identified; incidental capture/mortality reduced								21
1.5 Turtle uses & values identified; legislation / management in place								39
1.6 Nesting beach management programmes developed								13
2.1 Habitat protected / monitored								25
2.2 Degraded habitats rehabilitated								35
3.1 Basic species and habitat-related studies conducted								23
3.2 Collaborative research and monitoring conducted								29
3.3 Research results applied; management priorities identified								30
3.4 Data collection standardised/ information exchanged								26
4.1 Education, information programmes implemented								35
4.2 Alternative livelihood opportunities developed								14
4.3 Public / private sector involvement encouraged								17
5.1 Trade regulations cooperatively enforced								20
5.2 Mgmt. issues identified; national actions prioritised								32
5.3 Cooperative mgmt. and information exchange enhanced								11
5.4 Capacity building / training strengthened								26
5.5 Legislation reviewed; enforcement strengthened								23
6.1 New members solicited; MoU status considered								39
6.2 Secretariat / Advisory Committee supported								0
6.3 Resources sought for domestic implementation								12
6.4 Government coordination / cooperation improved								26
OVERALL AVERAGE: Signatory State								26

No information or no progress reported

Very limited progress

Some progress, but limited in scope

Partial implement-ation, good progress

Active intervention, very substantial progress

Full / near full implementation *or N/A in few cases