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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REVIEW OF IMPLEMENTATION PROGRESS

This paper has as its foundation a 62-page Detailed Analysis of IOSEA Marine Turtle MoU National Reports (Document MT-IOSEA/SS.3/Doc. 7.2 – Annex). The contents of that document have been condensed into a much shorter text, attached hereto. Embedded in the condensed text is an executive summary that further distils the most essential findings.

It is hoped that participants will read the entire set of documents, including the recommendations contained in various places throughout the detailed analysis. Should that not be possible, participants are encouraged to read at least the executive summary and the rest of the shorter text, and to refer to the detailed analysis (and its introduction) whenever necessary for more explanation.

At a later stage, a compilation of information on projects registered in the online IOSEA Projects Database will be appended as an addendum to this document.

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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 required to submit an annual report describing their implementation of the MoU. A standard reporting template and a online reporting facility were developed to enable Signatory States to submit their reports through the internet and to revise them whenever necessary.

The present document represents the most comprehensive analysis ever undertaken 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 20 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 ultimately to move beyond simply reporting activities (outputs), and instead to focus more attention on the results (outcomes) of any interventions made. In that regard, no apology is made for the level of detail requested in some of the lines 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 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 domain 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. To partially compensate for this deficiency, a compilation of projects contained in the IOSEA Projects Database, available for viewing through the IOSEA website, will be appended to this document. While no attempt will be made to integrate that information, from both nongovernmental and governmental sources, a cursory review will give 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.

This first exercise to review the national reports submitted by Signatory States has also highlighted various aspects of the reporting template itself that are in need of modification. In its current design, the reporting template seeks to reflect as far as possible all of the activities containing in the Conservation and Management Plan and to remain faithful to the phrasing used in that fundamental text. It is clear, however, that there is some inherent duplication and lack of clarity within the CMP that ought to be filtered out in the design of the reporting template. To that end, the Secretariat is undertaking a separate exercise that will consolidate and clarify a number of the questions, and remove a number of them that do not provide useful information, so as to address a number of concerns raised by Signatory States.

In the following analysis, 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. The Secretariat hopes to be in a position, before the Meeting of Signatory States, to prepare a separate matrix that will assess reporting and implementation progress in each of the Signatory States across the same range of programmes.

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Executive Summary

Reducing direct and indirect causes of marine turtle mortality

Signatory States have made good progress to identify about 225 discrete sites of relevance to marine turtles, and to categorise them as nesting, feeding and developmental habitats. Most have attempted to give a subjective rating of the intensity of about 15 potential threats at each site. The most prevalent threats of "moderate to strong" intensity appear to be: incidental capture in fisheries, natural threats/predation, egg collection, boat strikes, plastics at sea, artificial lighting, exploitation of live animals at sea, and exploitation of nesting females. Designation and management of protected areas is the most prevalent measure in place to mitigate these threats. Restrictions on vehicle traffic, modification of fishing gear, tourist management, predator control, nest protection, and artificial light control are among the other measures adopted. The IOSEA Online Reporting Facility has been set up to conduct rather sophisticated queries of these data. It will be an extremely versatile analytical tool for management purposes as the underlying data are supplemented and refined over time.

Some examples of best practice, that provides structure to conservation and management activities, include Australia's comprehensive national recovery plan and the United States' standardised index site monitoring protocols. About half of the Signatory States indicated community participation as an important approach for conserving and managing marine turtle populations, and many have conducted socio-economic studies among communities that interact with marine turtles. A Philippines' study provides some interesting and important results, demonstrating the value of such work.

Signatory States identified economic incentives that need to be corrected in order to help reduce turtle mortality, among them: adjustments to the price of regular meat, income-generating activities to reduce poverty, alternative livelihoods, income from eco-tourism, banning the use of eggs in traditional medicine, and compensating fishermen for damaged nets. This area requires further investigation in all Signatories to elicit more information on the underlying causes of threats to and mortality of marine turtles.

More than half of the Signatory States have developed some gear, device and/or other technique to minimise incidental capture of marine turtles, including devices that allow turtles to escape. Fewer Signatory States employ spatial or seasonal closure of fishing activities to minimise incidental capture. A number of other measures have also been considered or adopted including: closure of beaches to vehicle traffic, encouraging fishermen to release turtles, banning of mechanized fishing and drift nets, and different hook types. Only Australia and United States have exchanged information and/or provided technical assistance to other Signatory States to promote implementation of by-catch mitigation measures.

Most Signatory States have undertaken initiatives with fisheries industries and management organisations to implement various mitigation measures, such as introducing turtle excluder devices (TEDs), establishing observer programmes, banning destructive fishing techniques, and establishing protected areas. Australia appears to be most advanced in this regard, having worked collaboratively to adopt a national policy on fisheries by-catch and various other initiatives.

Many Signatory States have conducted workshops to educate fishers, have on-board observer programmes or vessel monitoring systems/inspections, or have conducted training programmes for TEDs and longline practices. Very few have developed net retention or recycling schemes. Australia is, however, developing mitigation activities in relation to marine debris and is investigating the potential for recycling nets.

Almost all Signatory States have enacted legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products. Nonetheless, about 70% of the Signatory States responding still have some cultural/traditional consumption of turtle meat, as well as consumption of eggs. Four Signatories reported a moderate to high level of traditional harvest of marine turtles, with high levels of impact. Turtles are still used for economic purposes (i.e. for their shell) and for traditional medicine in some Signatory States. About half of the Signatory States have established management programmes that include limits on levels of intentional harvest. Australia and Seychelles provide notable examples. Only a

few have management agreements already in place with other concerned States in relation to sustainable levels of traditional harvest (e.g. Australia and Philippines, with neighbouring non-Signatory States).

Monitoring and protection, education and awareness programmes, and legislation are among the most common measures to minimise or reduce the mortality of eggs, hatchlings and nesting females. Other measures include: predator control, community involvement, egg relocation/hatchery programmes, beach clean-ups, light pollution reduction, and guarding of beaches. In general, more information is needed to assess the extent and effectiveness of these activities. It would appear that only a handful of Signatory States have carried out reviews of their nesting beach management programmes.

Protecting, conserving and rehabilitating marine turtle habitats

Many of the Signatory States carry out assessments of the environmental impact of marine and coastal development, including some that specifically address marine turtles. A majority have regulations regarding design and location of buildings in relation to the shoreline. However, relatively few have regulations on the use of artificial lighting or the transit of vehicles in nesting areas. Several Signatory States have other activities to manage and regulate the use of beaches and dunes, including beach closure/controlled access, controls during nesting seasons, repossession of major nesting areas lost to tourism, prohibition of hunting and harassment of wildlife, and various awareness-raising activities.

Efforts are being made to re-vegetate frontal dunes at nesting beaches, and to remove debris that could impede turtle nesting and hatchling production. Seychelles, in particular, reports on extensive work in various locations; while programmes in Australia, Pakistan and Philippines are reported to have benefited marine turtle conservation. A majority of Signatory States monitor water quality, but it is less clear what steps are taken to protect water from land-based and maritime pollution. About half of the Signatories appear to have incentives or initiatives to assure adequate protection of critical habitat outside of established protected areas, though not all are fully implemented.

Most of the Signatory States are monitoring their coral reefs and/or are making an effort at some level to recover degraded reefs. Activities mentioned include monitoring and rehabilitation, upgrading of legal protection status, development of recovery plans, relocation of sewage outfalls, reduction of specific threats, and education and awareness activities. Most are also making some effort to recover degraded mangrove and sea grass habitats, but the primary effort by most countries is directed towards mangrove reforestation. Sea grass habitat recovery is apparently being undertaken in only a few countries.

Improving understanding of marine turtle ecology and populations

Almost all Signatory States have conducted baseline studies on marine turtle populations and their habitats. Most have monitoring programmes in place, though more information is needed on their duration, continuity and species focus. Most Signatory States have employed tagging to try to identify migration routes, while fewer have undertaken genetic and satellite tracking studies. The level of detail provided about these activities is generally insufficient to assess the extent to which they are serving their intended purpose. Only a few Signatory States have carried out studies of marine turtle population dynamics and/or survival rates. About half conducted research on the frequency and pathology of diseases of marine turtles, though the intensity of the research and data collection is variable. About half of the Signatory States report having promoted the use of traditional ecological knowledge in research studies.

A number of sub-regional initiatives are described that help to identify priority research and monitoring needs (e.g. SEASTAR, SEAFDEC, TIHPA). Many Signatory States have undertaken collaborative studies on genetics, conservation status, migration, and other biological and ecological aspects; however the extent to which this work is truly collaborative is difficult to assess on the basis of the limited information provided.

Signatory States provide complete or partial information on their priority marine turtle populations in need of conservation actions, as well as population trends. Many are using research results to improve the efficacy of management actions, threat mitigation measures, hatchery management practices, and measures to prevent habitat loss.

Half of the Signatory States have attempted to standardise methods and levels of data collection, however only a few clearly have an agreed protocol in place. Very few indicate that they often exchange scientific and technical information and expertise with other Range States; more typically, such exchanges are characterised as occasional. The most common means of disseminating data to other Range States are publications and international meetings or workshops. Fewer than half of the Signatory States compile data on marine turtle populations of a regional interest.

Increasing public awareness and enhancing public participation

Most of the Signatory States have collected, developed, and/or disseminated diverse educational materials. A more complete and descriptive inventory might give a better sense of whether new initiatives are needed and whether any materials already produced might be used, or adapted for use, in other countries. Many have information or interpretative centres focussing on marine turtles, and have developed mass media information programmes through television, radio, documentaries, and/or newspapers. More information is needed to assess their impact on the general public and their suitability for replication elsewhere. Many Signatories have developed and conducted education and awareness programmes for policy makers, teachers, schools, fishing communities and the media. Other groups targeted include indigenous and local communities, military and civilian personnel, scientists, and tourists.

Many Signatory States have their own, or contribute to other, websites or newsletters to facilitate networking and information exchange. Although few have done so yet, many Signatories indicated that they would be in a position to contribute data on marine turtle populations, nesting, migration and projects to a web-based information resource (i.e. now established through the IOSEA website).

About two-thirds of the Signatory States have undertaken some initiative to involve stakeholders and local communities in the planning and/or implementation of conservation and management measures. It would be worthwhile to describe these programmes in more detail, mentioning the challenges that were faced and overcome, their overall effectiveness and potential for replication elsewhere. Almost all of the Signatories note participation in research and conservation efforts by Government institutions, NGOs, the private sector and/or general community – with notable examples provided by Australia, Kenya and Seychelles. Various incentives schemes commonly used to encourage public participation are also described.

Initiatives have been undertaken to identify and facilitate alternative livelihoods, including income-generating activities, for local communities. They include aquaculture and seaweed culture, apiculture, artisan re-training, handicraft skill development, mangrove rehabilitation, agriculture, fishing and marine ranching programmes, provision of soft loans, and eco-tourism.

Enhancing national, regional and international cooperation

Many Signatory States collaborate with CITES, Interpol, customs services, airport and port authorities, wildlife agencies and NGOs to identify illegal trade routes for marine turtle products. Other steps include reviews of compliance with CITES obligations in relation to marine turtles, and participation in CITES training programmes. Only a few Signatory States appear to have exchanged information or raised compliance and/or trade issues in bilateral discussions or international fora.

Almost all Signatory States have measures in place to prevent and deter domestic illegal trade in marine turtle products. Seychelles has provided detailed information in this regard. Many 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. Several report having encountered problems in ensuring compatible application of laws across and between jurisdictions.

Among the local management issues for which international cooperation is considered necessary are: illegal fishing in territorial waters/international trade, incidental capture of turtles by foreign fleets, harvest of turtles by neighbouring countries, aspects of management and enforcement/patrolling of territorial

waters, and fishing gear technology. Other issues identified as requiring international cooperation include marine pollution/debris, basic research, training/capacity-building, development of alternative livelihoods, and long-term funding. These represent a useful collection of ideas that could serve as a starting point for a more thorough discussion about priorities for international collaboration.

A number of other mechanisms were cited as having potential to facilitate cooperation in marine turtle conservation and management at a sub-regional level. Several Signatory States have taken steps to secure data on incidental capture and/or to encourage Regional Fishery Bodies to adopt marine turtle conservation measures within EEZs and on the high seas. Australia provides an informative response in this regard. Relatively few Signatory States have developed or are participating in networks for cooperative management of shared populations, and only two (Australia and Philippines) indicated involvement in the establishment of transboundary marine protected areas with other countries.

Many Signatory States have conducted training workshops. Australia, Seychelles and Viet Nam describe rather extensive activities undertaken in this area. It is less clearly stated how coordination is achieved regionally. It would be helpful if the activities undertaken were described in more detail to demonstrate where synergies might be created through joint activities.

A number of Signatories have taken steps towards developing a set of key management measures to be used as a basis for more specific national action plans. Informative responses were provided by Australia, Viet Nam and United Kingdom, among others. Overall, limited information is available on the extent to which the provisions of the IOSEA Conservation and Management Plan have been incorporated into more specific plans at the national level. Only a few Signatories appear to have regular reviews of their national plans. Many Signatory States achieve national coordination through various governmental institutions, national committees or other organisations – examples from Australia and Bangladesh are noteworthy. Many Signatories have established one or more partnerships with universities, relevant organisations, and research institutions nationally and/or internationally.

The most common capacity-building need identified is for trained personnel, followed by equipment and infrastructure, and programmatic support. It may be useful for Signatory States for whom 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 due to lack of such resources.

Promoting and supporting implementation

Almost all Signatory States have designated a lead agency responsible for coordinating national marine turtle conservation and management policy, and have undertaken initiatives to encourage cooperation within and among government and non-government sectors. Many have conducted a review of the roles and responsibilities of government agencies related to marine turtle conservation and management. Australia, Philippines and United States have encouraged other States to sign the MoU. Six of the existing Signatories have expressed a preference for it to become a legally-binding instrument in the future.

Australia, United Kingdom and United States have provided funds to the Secretariat for its operations, meetings and website, and for project implementation. Additional resources for implementation activities at national level clearly exist, but are largely undocumented. Funding for marine turtle conservation has also been solicited and received from a range of sponsors including, among others: UNDP, GEF-World Bank, BP, ROPME, WWF, WCS, and Conservation International. The private sector (e.g. petroleum and gas companies, hotels), tourism-related initiatives, and various private foundations have also provided or generated funds for several Signatory States.

Among the activities considered by Signatory States to be the highest priorities for funding are: strengthening of regional collaboration and partnerships, management issues, education and awareness programmes, capacity building, socio-economic issues, and collection of biological data.

REDUCING DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY

1.1 Identification of sites, threats and mitigation measures

The national report template allows Signatory States to list by name, and provide coordinates for, the nesting beaches, feeding grounds and developmental habitats important for marine turtles in their country. Space is provided to list the species occurring at each site and to identify the nature and intensity of a range of about 15 threats potentially impacting those sites.

Site identification

Signatory States have identified approximately 225 discrete sites[1], and have categorised them in terms of the habitat types listed above. Few Signatory States provide coordinates for their sites; however about two-thirds have attempted to give a subjective rating of the intensity of threats at each site. Details are recorded in the Online Reporting Facility (http://www.ioseaturtles.org/report/) and a basic summary of the availability of data is given in Parts II and III of the Detailed Analysis of IOSEA National Reports.

Overall, the data are fairly preliminary and of varying quality. The subjective nature of the threat ratings means that caution must be exercised in any interpretation of the data that might be attempted. Nevertheless, the Online Reporting Facility is already set up to conduct rather sophisticated and powerful searches. A few illustrations of the countless number of queries one can generate demonstrate its potential. For example, one can query the system to identify:

- all sites in Australia where both *Caretta caretta* and *Chelonia mydas* are present;
- all sites in the Western Indian Ocean characterised as feeding and developmental habitats;
- all sites in the South-East Asia region where exploitation of nesting females is "strong" or the exploitation of live animals at sea is "strong"; and
- all sites in Seychelles where there is “little or no” threat of sand mining.

In time, as the data are supplemented and refined, the Online Reporting Facility will be an extremely versatile analytical tool for management purposes.

Threat identification

No attempt has been made here to analyse the threat data such detail, but the general overview prepared in Part III suggests that the most prevalent threats (in terms of numbers of sites affected by threats of moderate to strong intensity) are: incidental capture in fisheries, natural threats/predation, egg collection, boat strikes, plastics at sea, artificial lighting, exploitation of live animals at sea and exploitation of nesting females. Less prevalent are threats such as: agricultural/urban development, coastal erosion, inshore pollution, vehicles, and sand mining.

Mitigation of threats

At present, the reporting template gives limited scope for Signatory States to indicate measures that they may have put in place to mitigate threats at particular sites. Nevertheless, some data are available for about 60% of the Signatory States. Designation/management of protected areas, sanctuaries and exclusion zones etc. is the most prevalent measure (at 88 sites in 10 countries). Restrictions on vehicle traffic are in place at 48 sites in 6 countries. Modification of fishing gear has been practiced at 28 sites, in just three countries. Other mitigation measures present at 62 sites include, among others: tourist management, predator control, nest protection, and artificial light control.

[1] Information is missing only for Myanmar, Pakistan, United Republic of Tanzania and United States (not applicable, as there are no American sites within the IOSEA region). The figure above includes sites recently listed by Sri Lanka, but too late to be considered in the present analysis.

1.2 Identification and application of best practices to minimise threats

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. Whereas the intent was to allow Signatories to describe, in ample detail, a few exemplary approaches that had proven to be particularly effective, most itemised many varied activities (or even just a few) without going into much depth. The comprehensive National Recovery Plan developed by Australia and the standardised index site monitoring protocols developed by United States are examples of best practice that provide structure to conservation and management practices.

About half of the Signatory States indicated community involvement/participation as an important approach for conserving and managing marine turtle populations, and two-thirds had conducted socio-economic studies among communities that interact with marine turtles. A study described by Philippines provided some interesting and important results, demonstrating the value of such studies. In general, it would be helpful if Signatory States were to provide more detail both of the nature of the work undertaken and of the results obtained.

1.3 Correction of adverse incentives that contribute to turtle mortality

About two-thirds of the Signatory States responding cite modifications to economic incentives that would help reduce turtle mortality, such as: reduction in the price of regular meat, income-generating activities to reduce poverty, alternative livelihoods, income from turtle tourism, banning the use of eggs in traditional medicine, and compensation for fishermen whose nets have been damaged by turtles.

This area requires further investigation in all Signatory States to elicit information on the underlying causes of threats to and mortality of marine turtles (e.g. high prices earned from turtle products relative to other food commodities; lack of affordable alternatives; ease of access to the turtle resource; readily available inexpensive land close to nesting beaches, to give just some examples).

Only about one-third of the Signatory States responding (Kenya, Pakistan, Philippines, Seychelles, and Sri Lanka) have described efforts being made towards implementing modifications to these economic incentives. In general, this question has not been answered in depth by any of the Signatories – at least not to the extent of reporting in detail on practical approaches that have shown some measure of success.

1.4 Reduction of incidental capture and mortality

More than half of the Signatory States have developed some gear, device and/or other technique to minimise incidental capture of marine turtles. About two-thirds of those responding have developed or used devices that allow the escape of marine turtles from fishing gear. The following countries are reported not to have implemented these devices: Cambodia, Mauritius, Oman, Philippines, Seychelles, and United Kingdom.

Fewer Signatory States employ spatial closure of fishing activities as a management tool to minimise incidental capture of marine turtles, and only a handful (Australia, Pakistan, United States, Viet Nam) use *seasonal* closure of fishing activities for this purpose.

A number of other measures have been adopted to reduce turtle mortality, including: closure of beaches to vehicle traffic in some areas, release of turtles by fishermen, and banning of mechanized fishing and drift nets. Viet Nam indicated its intention to switch from J-hooks to circle hooks. Before more meaningful observations can be drawn, it would be useful if Signatory States were to specify more precisely what devices are in use, and to comment on their experience in using these devices or difficulties in introducing them, as the case may be.

Most of the Signatory States have undertaken initiatives with fisheries industries and management organisations to implement mitigation measures. The extent to which these initiatives have been

undertaken varies among countries. The activities reported include encouraging fishermen to release turtles, implementing initiatives to use Turtle Excluder Devices (TEDs), acquiring monitoring equipment, establishing observer programmes, enforcing laws, banning destructive techniques, regulating fishing, and establishing protected areas. It would be helpful if each country were to indicate whether the initiatives implemented applied to national waters and/or the high seas.

Australia appears to be most advanced in this regard, having worked collaboratively to, among other things: adopt a national policy on fisheries by-catch; develop by-catch action plans, techniques and codes of practice; implement seasonal and permanent closures; undertake education and outreach; implement an observer programme in some fisheries; and undertake work on marine debris.

Just under half of the Signatory States that responded have conducted workshops to educate fishers, have on-board observer programmes or vessel monitoring systems/sea inspections, or have conducted training programmes for TEDs and longline practices. The information provided by most gives only a superficial account of the relevance of the monitoring and training conducted to marine turtle by-catch mitigation. Most likely, there is under-reporting of the measures that have actually been undertaken.

Very few Signatory States (Australia, Comoros, Philippines, and Viet Nam) have indicated that they have developed or are developing net retention and/or recycling schemes. Australia is in the process of developing mitigation activities in relation to marine debris in the northern and eastern parts of the country and is investigating the potential for recycling nets; substantial governmental funding is supporting these initiatives.

Only Australia and United States have exchanged information and/or provided technical assistance to other Signatory States to promote implementation of by-catch mitigation measures. Australia appears to have done extensive work in exchanging information and providing assistance. United States too is known to have carried out more activities in this regard than have been enumerated.

1.5 Prohibition of direct harvest and domestic trade

Almost all of the 15 Signatory States responding have already enacted some legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products – except for Bangladesh which is currently considering an amendment to its wildlife act.

Notwithstanding the legislative provisions mentioned above, about 70% of the Signatory States responding have cultural/traditional consumption of turtle meat, as well as consumption of eggs. Only Cambodia, Mauritius, Pakistan, Thailand, and United States report no egg consumption. In fewer Signatory States, turtles are still used for economic purposes (i.e. for their shell) and for traditional medicine.

Four Signatory States (Comoros, Islamic Republic of Iran, Madagascar and Seychelles) report a moderate to high level of traditional harvest, with high levels of impact. Sri Lanka reports low level of harvest with moderate impact; while Cambodia, Oman, and Viet Nam report both low levels and impact of such harvest. In Australia, the levels and impact of traditional harvest are said to be unknown, or at least not quantified accurately, and research in this area is ongoing. Pakistan, Thailand, United Kingdom, and United States report that no traditional harvest occurs.

Of the 15 Signatory States that responded, about half indicate that they have established management programmes that include limits on levels of intentional harvest. Australia recently formed a task force to develop a nationally coordinated effort to manage harvest. Seychelles documents in great detail the successive management measures put in place over the past 100 years.

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. Australia provides details of relevant agreements with Indonesia and Papua New Guinea. Philippines has a bilateral agreement with

Malaysia, and will deal with the issue of sustainable harvest in the framework of a separate MoU with Indonesia and Malaysia.

1.6 Development of nesting beach management programmes

All of the Signatory States report on one or several measures in place to minimise or reduce the mortality of eggs, hatchlings and nesting females. Monitoring and protection, education and awareness programmes, and legislation appear to be quite common. Other measures include: predator control, community involvement, egg relocation/hatchery programmes, beach clean-ups, light pollution reduction, and guarding of beaches etc.

The level of detail varies among countries and in most of the responses is insufficient to describe what is actually being done on the ground. Nor is the outcome of such interventions stated (i.e. whether the geographic coverage is adequate or whether the measures are generally working effectively, based on certain success criteria etc). It would be helpful to indicate whether these management measures are widely applied or rather are used only selectively at particular locations because of resource constraints.

Although about two-thirds of the Signatory States that responded indicate that they had undertaken a recent evaluation of the effectiveness of their nest and beach management programmes, the question may have been misinterpreted. On closer examination if would appear that only a handful of these Signatories have actually carried out a review, and few details are provided.

PROTECTING, CONSERVING AND REHABILITATING MARINE TURTLE HABITATS

2.1 Establishment of habitat protection/conservation measures

About two-thirds of the Signatory States responding carry out assessments, to varying degrees, of the environmental impact of marine and coastal development and other human activities. Several appear to have carried out impact assessments specifically addressing marine turtles. EIAs are also conducted in other countries.

A majority of Signatory States have regulations regarding design and location of buildings in relation to the shoreline. Some countries note the existence of regulations to keep a certain distance from the water, the extent of legal protection, and conservation activities at certain locations, and also difficulties in enforcement.

Only five Signatory States have regulations on the use of artificial lighting. Additionally, Mauritius has regulations on use of artificial light while fishing, and developers in Seychelles are encouraged to minimise the impact of artificial lights. Madagascar notes that on its many small islands where tourism is developing, special regulations on artificial lighting are needed. Even fewer Signatories have regulations on the transit of vehicles in nesting areas. In Australia, the ability to close beaches to vehicle traffic is limited to certain conservation areas.

Several Signatory States have other activities that are used to manage and regulate the use of beaches and dunes. These include beach closure/controlled access, certain controls during nesting seasons, repossession of major nesting areas lost to tourism, prohibition of hunting and harassment of wildlife, guidelines for ecological destination development, and various local awareness-raising activities.

A majority of Signatory States monitor water quality, but it is less clear what steps are taken in some countries to protect water quality from land-based and maritime pollution. Given that the issue of water quality and pollution is likely handled by other agencies, it would be useful to ascertain the extent to which water sampling corresponds to important habitats for marine turtles (i.e. whether any regular monitoring is or should be done that would be of value to marine turtle conservation efforts). In almost all

of the Signatory States some measure is being applied to ensure the effective prohibition of the use of poisonous chemicals and explosives.

Just over half of the Signatory States responding appear to have some incentive or initiative to assure adequate protection of critical habitat outside of established protected areas, though not all of them are fully implemented. These initiatives range from legal frameworks to law enforcement, education, community participation, alternative livelihoods, awards, cash incentive schemes, eco-tourism and other monitoring activities. However, the level of detail in most of the responses is insufficient to assess what is actually being done in practice, and this may be a reflection of overall difficulty in achieving adequate protection outside of established areas.

2.2 Rehabilitation of degraded habitats

More than half of the Signatory States responding have made efforts to re-vegetate frontal dunes at nesting beaches. Seychelles, in particular, reports on extensive work in various locations; while programmes in Australia, Pakistan and Philippines are reported to have benefited marine turtle conservation. It would be helpful, as a few respondents have done, to describe the measures undertaken in more detail, and to comment on their efficacy and any lessons learned that might be of value to other Signatory States.

Half of the Signatory States responding are making an effort to regularly remove debris that could impede turtle nesting and hatchling production, at least on some beaches. Australia, in particular, has extensive programmes under way.

Most of the Signatory States that responded are monitoring their coral reefs and/or are making an effort at some level to recover degraded coral reefs. Most Signatory States describe their activities in this regard, at least superficially. Activities mentioned include monitoring and rehabilitation actions, 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.

Most of the Signatory States that responded are making some effort to recover degraded mangrove and sea grass habitats, but the primary effort by most countries is directed towards mangrove reforestation. Sea grass habitat recovery is apparently being undertaken in only few countries (Australia, Mauritius, United States) through direct protection and regulation of dredging activities and coastal development.

IMPROVING UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS

3.1 Targeted marine turtle and habitat studies

Almost all of the Signatory States have conducted baseline studies on marine turtle populations and their habitats. Most respondents cite the relevant literature, ranging from peer-reviewed journals to proceedings and workshops, but it is unclear whether these lists are comprehensive. It would be useful if all Signatories States were to maintain lists of relevant literature and include them in their national reports (as Oman, Seychelles and Australia, among others) have done, at least in part.

Three-quarters of Signatory States responding have monitoring programmes in place (only Bangladesh, Cambodia, Madagascar, and Mauritius do not) and provide varying levels of detail. It would be useful if all Signatories States were to indicate when their monitoring programmes began and mention, as appropriate, the species concerned (as Australia has done) and whether there have been any breaks in data collection.

Most of the Signatory States reporting have employed tagging to identify migration routes, and almost all provide some details of this work. About half have carried out genetic studies; all except United States give additional details. However, the level of detail provided about past activities is generally insufficient to assess the extent to which these collective actions are serving their intended purpose. Whether tagging

and genetic sampling has actually helped to identify migration routes is not clearly indicated by most countries. More detailed information is needed.

Just under half of the Signatory States reporting have carried out satellite tracking studies, and all have provided some additional information about this work, such as details of species and population tracked, years of tracking work, results obtained, publications, type of transmitter, and planned activities. Again, the additional information provided by Signatories is insufficient to assess the efficacy of satellite tracking studies overall, or to help orient the direction of future work in this area. All countries conducting such research should provide more information on the results obtained to date, as well as future plans.

Only a few Signatory States report having carried out studies of marine turtle population dynamics and/or survival rates; the level of information varies greatly among these countries. Australia and United Kingdom provide the most information and some references.

Just under half of the Signatory States reporting have carried out some research on the frequency and pathology of diseases of marine turtles. The intensity of the research and the data being collected as well as the frequency of data collection is variable; Australia appears to have conducted the most research in this regard. It would be helpful if published and unpublished reports were cited and if the nature of the work undertaken were described in more detail.

Just under half of the Signatory States reporting indicate that they are promoting the use of traditional ecological knowledge in research studies. Most of these countries provide some additional information on the nature of this work, though it tends to be limited. Only Australia has provided 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

Only a few Signatory States mention some sub-regional initiative that identifies priority research and monitoring needs. They include: a Marine Turtle Conservation Strategy and Action Plan for the Western Indian Ocean; the SEASTAR2000 project and SEAFDEC activities in South-East Asia; and the Philippines-Malaysia Turtle Islands Heritage Protected Area initiative. Signatories States that are involved in marine turtle conservation activities through sub-regional frameworks, projects or other bilateral/multilateral arrangements should mention them explicitly and briefly describe them.

A few of the Signatory States (Australia, Seychelles, Thailand, United Kingdom) are reported to have collaborated on genetic identity studies over large geographic areas. About two-thirds of the Signatories reporting have undertaken collaborative studies on conservation status, migration, and other biological and ecological aspects (e.g. fisheries by-catch mitigation, determination of sex ratios, captive breeding, disease, and behaviour etc.). However the level of detail varies enormously making it difficult at times to clearly interpret the information. The extent to which these studies can be described as collaborative is often unclear.

3.3 Analysis and use of data to improve conservation practices

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 populations trends. Five Signatories (Australia, Madagascar, Philippines, Seychelles, and United Kingdom) provided the information requested, and a number of others provided partial details. If answered comprehensively, this query has the potential to provide useful information to help orient the direction of future collective actions. The responses of a number of the Signatory States, which identify priority species/populations and trends, should be emulated as far as possible.

About two-thirds of the Signatory States are reportedly are using research results to improve the efficacy of management actions, threat mitigation measures, hatchery management practices, and measures to

prevent habitat loss. The questionnaire design should in future allow Signatories to elaborate on how research is being applied specifically in each of these areas.

3.4 Standardisation of data collection and exchange of information

Half of the Signatory States have taken some initiative to standardise methods and levels of data collection, however only a few clearly have an "agreed protocol" in place. It may be useful for Signatories that have adopted standardised methods, including data collection sheets, to provide details and copies to the 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.

The most common means of disseminating data to other Range States are publications (journals, websites, brochures, newsletters etc), followed by international meetings/workshops. 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 whether these means are targeted specifically towards other Range States, in order to convey information that might be valuable for conservation/management actions (e.g. on ongoing research, new findings, innovative techniques, unusual levels of turtle mortality, potential threats, etc.). The benefits/outcomes actually achieved through such interactions are not described, nor is an indication give as to what has worked and what has been less effective.

Very few Signatories indicate that they "often (systematically)" exchange scientific and technical information and expertise with other Range States. More typically, such exchanges are only "occasional" or "rare, in some instances. Only the United States disseminates traditional knowledge on marine turtles "often (systematically)". More typically, such exchanges of traditional knowledge are reported to be "rare" or "occasional", in some instances.

Fewer than half of the Signatory States reporting compile data on marine turtle populations of a regional interest, for example through mapping systems, national databases and exchange of information on tagging and migration. The responses of several Signatories suggest recognition of the importance of, and interest in, compiling information pertinent to other Range States. However few details are provided, except for Australia and Kenya.

INCREASING PUBLIC AWARENESS AND ENHANCING PUBLIC PARTICIPATION

4.1 Establishment of education and information programmes

Most of the Signatory States have to some extent collected, developed, and/or disseminated diverse educational materials. Australia, Kenya, Pakistan, Philippines, Sri Lanka, Thailand, Seychelles and Viet Nam appear to have been especially active in this area. A more complete and descriptive inventory (including titles, brief explanation of content, target audience, years of production, language versions) might give a better sense of whether new 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.

About two-thirds of the Signatory States reporting 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).

Half of the Signatory States reporting have developed and implemented mass media information programmes through television, radio, documentaries, and/or newspapers. Australia and Seychelles seem to be particularly active in this regard. It would be useful for Signatories to provide further details of their content, production dates, regularity of screening, geographic reach, etc; and to comment generally on their efficacy. If described in sufficient detail, other Signatories might be inclined to seek more information on them with a view to possibly adapting techniques used successfully elsewhere.

A similar number of Signatory States have developed and conducted education and awareness programmes for policy makers, and almost all have developed and conducted education and awareness programmes for teachers, schools, fishing communities and the media. Other groups targeted include indigenous and local communities, military and civilian personnel, scientists, and tourists.

4.2 Development of alternative livelihood opportunities

Over half of the Signatory States reporting have undertaken initiatives to identify and facilitate alternative livelihoods (including income generating activities) for local communities. The initiatives include aquaculture and seaweed culture, marine waste-based handicrafts and apiculture, mangrove rehabilitation, provision of soft loans, artisan re-training, handicraft skill development, agriculture, fishing and marine ranching programmes, and eco-tourism.

About two-thirds of 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 collaboration, participation in research and conservation programmes, as well as in planning processes. It would be worthwhile for all Signatory States that have given brief, though very interesting, responses to both of these questions 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.)

Almost all of the Signatory States that responded report some participation in research and conservation efforts from Government institutions, NGOs, private sector and/or the general community − through funding of activities, involvement in workshops, and/or research and conservation activities. A number of initiatives are noteworthy: funding of various nongovernmental initiatives through a National Heritage Trust in Australia; the formation of a broadly-based national sea turtle conservation group in Kenya, known as KESCOM; and encouragement of the private sector in Seychelles to take on conservation projects.

4.3 Promotion of public participation

Among the incentive schemes used fairly widely to encourage public participation are gifts of T-shirts for tag returns, “public acknowledgement”, and certificates of recognition. Other schemes or devices include caps and sunglasses, school notebooks, paid contracts for protection of nesting beaches, educational booklets for children, safe drinking water, money, and guides for turtle projects. It would be helpful if Signatory States were to elaborate on any incentive schemes that have proven particularly effective over time, mention any difficulties that have been encountered/overcome, and indicate approximate annual cost and funding sources.

ENHANCING NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION

5.1 Cooperative enforcement of trade regulations

About two-thirds of the Signatory States have mechanisms in place or are in contact with appropriate authorities to identify international illegal trade routes. Collaborators include CITES Management Authorities/CITES Secretariat, Interpol, domestic or foreign customs services, airport and port authorities, wildlife agencies, and various NGOs. A similar percentage have undertaken a national review of

compliance with CITES obligations in relation to marine turtles, and have (or participate/cooperate in) CITES training programmes for relevant authorities.

Almost all of the Signatory States that responded have some measure in place to prevent, deter and eliminate domestic illegal trade in marine turtle products. Seychelles provides considerable detail in this regard, referring to legislation, public partnerships, interagency collaboration, training, education and awareness programmes.

Only a few Signatory States appear to have exchanged information or raised discussion about certain compliance and/or trade issues in bilateral discussions or international fora. No Signatory mentioned any particular impediments to identifying illegal trade routes or deterring illegal trade, although such illegal trade is known to occur. 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 Action plans and further international collaboration

Just over half 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. Australia appears to be among the most advanced in this regard, quoting the detailed objectives of its recovery plan for marine turtles. Viet Nam describes the formulation of its national Marine Turtle Action Plan and outlines its priority themes. United Kingdom describes the long-term objectives of a broad Conservation Management Plan. Philippines notes that action plans are made on a per site basis and are incorporated into agreements with stakeholders.

Overall, though, there is limited information 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, and henceforth incorporated in more specific action plans. Only a few Signatories appear to have regular reviews of their national plans for turtle conservation. The principle of incorporating a formal review process, as Australia has done, is very important.

All of the Signatory States reporting have listed one or more local management issues, in varying levels of detail, for which international cooperation is considered necessary. Fisheries-related issues appear to be the most common item cited by respondents: illegal fishing in territorial waters/international trade, incidental capture of turtles by foreign fleets, aspects of management and enforcement/patrolling of territorial waters, and gear technology. Similar issues considered to need a collective approach include: hunting and harvest of turtles by neighbouring countries on land and at sea, oil spills, marine pollution, and marine debris.

A few Signatories identify basic research as a local management issue where international cooperation is necessary. This may include such matters as: identification of turtle populations and migration routes, tagging/satellite tracking, and studies of marine turtle habitats and genetics. Other domestic management issues cited that would benefit from international cooperation include: training/capacity-building, development of alternative livelihoods, anti-poaching and trade, and long-term funding.

Though many of the responses that have been provided are brief, they represent a useful collection of ideas that could serve as a starting point for a more thorough discussion about priorities for international collaboration. Signatories should reflect more on this question and develop more detailed responses that indicate their specific needs and priorities in this area.

5.3 Enhancement of information exchange and cooperative management

Most of the Signatory States note some existing or potentially useful mechanism they consider to be useful for cooperation in relation to marine turtle conservation and management at the sub-regional level,

including for example, ROPME, ASEAN-SEAFDEC, CMS, FAO, and specific memoranda of understanding. It would be helpful if Signatories were to indicate the potential interest and particular strengths that the organisations they mention might bring to marine turtle conservation, as well as their capacity to take on a broader coordination role at the sub-regional level.

About two-thirds of the Signatory States reporting have their own, or contribute to other, web-sites or newsletters to facilitate networking and information exchange. When asked about information they could potentially contribute to a web-based information resource, a sizable proportion (50-75%) indicated that they would be in a position to contribute data on marine turtle populations, nesting, migration and projects. Other information mentioned included: electronic copies of a volunteer training manual, marine debris information, sea grass monitoring, socio-economic information, traditional knowledge, and genetic data. Notwithstanding the relatively positive response to this question by a majority of Signatory States reporting, relatively few have volunteered such information so far for inclusion in the IOSEA Website, which can accommodate a wide range of content.

Only five Signatory States have developed or are participating in networks for cooperative management of shared populations. Australia is collaborating with Indonesia, Papua New Guinea, Timor-Leste and SPREP, through various instruments. Only Australia and Philippines have indicated involvement in the establishment of transboundary marine protected areas. Australia describes an arrangement with Papua New Guinea, while Philippines concluded a memorandum of agreement with Malaysia to create the Turtle Islands Heritage Protected Area and is a partner in a tri-partite conservation plan for the Sulu-Sulawesi Marine Ecoregion.

About half of the Signatory States responding appear to have taken some steps to secure data on incidental capture and/or to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within EEZs and on the high seas. In Australia, the measures include: a formal national policy on fisheries by-catch, issuance of logbooks to fishers to record interactions with marine turtles, formulation of an Act requiring fishers to report incidental captures of marine turtles, and provision of waterproof flipcards for fishers to identify marine species.

5.4 Capacity building / strengthening of training programmes, partnerships

The most common capacity-building need identified is for trained personnel, including individuals trained in biology, sea turtle ecology, veterinary medicine, necropsies, monitoring/surveys, gear technology, law enforcement, as well as "trainers" who can work with volunteers, students and researchers.

A number of respondents identify a need for equipment and infrastructure, such as patrol boats, field and office equipment, DNA analysis facilities, an environmental education facility, and a sea turtle sanctuary and aquarium. Numerous requirements are mentioned under research, educational programmes, conservation awareness, working with fishermen, and developing an eco-volunteer programme.

It may be useful for Signatory States for whom 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.

About two-thirds of the Signatory States reporting have carried out some training programme. Australia, Seychelles, and Viet Nam describe rather extensive activities undertaken in this area, including regular specialised training workshops, provision of funds to regional conservation groups for workshops, development of a code of conduct for tourist operators, and production of training manuals etc. It is less clearly stated how coordination in training is achieved regionally, although mechanisms are known to exist in some sub-regions. In most cases, it would be helpful if the activities undertaken were described in more detail (mentioning time frames, numbers trained, frequency of repetition, titles of publications produced etc.) in order to give a clearer picture of their efficacy and possible need for more intensive

activity. This might also help to demonstrate where synergies could be created through joint (e.g. bilaterally or sub-regional) activities.

Many Signatory States achieve coordination, or will do so in future, through various governmental institutions, national committees or other organisations. Australia's National Turtle Recovery Group, formed by representatives from different fields, appears to be an effective way of coordinating activities. A national committees formed in Bangladesh is also worthy of note.

Over two-thirds of the Signatory States reporting 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. In almost all cases, it would be helpful 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

About two-thirds of the Signatory States reporting have conducted or are conducting a review of policies and laws to address gaps or impediments in relation to marine turtle conservation. However, only a few elaborate on what this entails. In almost all cases, 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 in question; giving timeframes for the initiation and expected or actual completion of the review; and possibly indicating whether there is a specific reason that necessitated the review).

Six Signatory States report having encountered problems in relation to cooperation in law enforcement to ensure compatible application of laws across and between jurisdictions. The difficulties experienced include: differences in who is authorized to implement a particular Act, differences in legal specifications of fishing mesh sizes, and general problems in enforcement of environmental law.

PROMOTING AND SUPPORTING IMPLEMENTATION

6.1 Efforts undertaken to broaden MoU membership

Notwithstanding the interest that Signatory States have in encouraging their neighbours to join and participate actively in the implementation of the Memorandum of Understanding, only Australia, Philippines and United States are reported to have encouraged other States to sign the agreement.

Six Signatory States were in favour amending the MoU in the future with a view to making it a legally-binding instrument; and another six were not.

6.2 Support for Secretariat / Advisory Committee and IOSEA implementation

Three Signatory States (Australia, United Kingdom and United States) have provided funds to the Secretariat for its operations, meetings and website, and for project implementation. United States has indicated that its Marine Turtle Conservation Act would in future provide a mechanism to support implementation of specific projects. The lack of response of other Signatories overlooks the mobilisation of resources for national implementation activities, which surely has occurred already in many Signatory States and could be documented, by making reference to domestic funding specially earmarked for marine turtle conservation.

6.3 Resources for implementation

Signatory States were requested to identify the conservation and management activities that ought to be among the highest priorities for funding. Most listed 5 to 10 priorities, among them: strengthening of regional collaboration and partnerships, management issues, education and awareness programmes, capacity building, socio-economic issues, and collection of biological data. It would 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 timeframes within which the programme of work should ideally be conducted.

Just under half of the Signatory States responding have explored options for funding of marine turtle conservation activities with, and/or have received funding from, other Governments and donor organisations. The sponsors include, among others: UNDP, GEF-World Bank, BP, ROPME, WWF, WCS, Conservation International, and various other donors. 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.

Four Signatory States (Australia, Kenya, Philippines, Seychelles) have solicited/received funding or contributions from industries impacting marine turtles and their habitats, including: petroleum and gas industries and hotels. Though not necessarily constituting "industries impacting marine turtles", private companies and private island owners are also listed by Seychelles. A number of private foundations have provided funding for marine turtle conservation work, and some have been established expressly for this purpose.

Five Signatory States have taken or will be taking initiatives to explore the use of economic instruments for the conservation of marine turtles and their habitats. Few details are provided, but eco-tourism is cited as common theme, followed by soft loans and aquaculture. About half of the Signatory States describe tourism-related initiatives that have already generated funding for conservation and management activities. Site-oriented activities for tourists include: participation in research activities, adoption of nests and tagged turtles, public lectures, guided turtle watching, and paid visits to two World Heritage sites. 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, degradation of habitat etc.

6.4 Government-NGO coordination/cooperation

Almost all of the Signatory States reporting have designated a lead agency responsible for coordinating national marine turtle conservation and management policy. About half of those indicated that they had conducted a review of the roles and responsibilities of government agencies related to the marine turtle conservation and management. However, not many details are provided. The remainder had not conducted or completed such a review.

Almost all of the Signatory States reporting have undertaken initiatives to encourage cooperation within and among government and non-government sectors. The various groups, committees, partnerships and other arrangements (e.g. through MoUs or recovery plans) are named and described at least superficially. Australia's National Turtle Recovery Group appears to be a particularly commendable initiative.