

**First Meeting on Dugong Conservation  
in the Indian Ocean and South-east Asia Region**

**23-25 August 2005  
Chaophya Park Hotel  
Bangkok, Thailand**

**MEETING REPORT**

**Introduction**

1. The First Meeting on dugong conservation in the Indian Ocean and South-east Asian region under the auspices of the Convention on Migratory Species (CMS) was held at the Chaophya Park Hotel, Bangkok, Thailand from the 23-25 August 2005, co-hosted by the Governments of Thailand and Australia. The Annotated Agenda for the meeting is Annex 1. The List of Participants is Annex 2.

**Welcoming remarks**

2. The meeting was formally opened by the representative of the Secretariat of the Convention on Migratory Species (CMS), Mr Douglas Hykle. The representatives of the Governments of Australia and Thailand, Mr Andrew McNee and Dr Maitree Duangsawasdi, were appointed by the participants as co-chairs of the meeting. The co-chairs welcomed participants and noted the high level attendance of countries within the dugong's range. They stated they looked forward to the cooperation among countries at the meeting, with the aim to develop a draft text for regional dugong conservation.

**Meeting Agenda**

3. The agenda was adopted without amendments.

**Dugong biology, ecology, populations and behaviour:**

4. Professor Helene Marsh, as an invited expert, delivered a presentation on dugong biology, ecology, populations and behaviour. The presentation showed that dugongs occupy a wide range, and due to their life characteristics (long lived, late sexual maturity between, having few young with high parental investment, and dependent on seagrass) are affected by human related mortality. There followed a general discussion and information sharing on circumstances within their countries jurisdiction.
5. The key points from Professor Marsh's presentation are:
  - Dugongs have a huge range spanning some 140,000 km of coastline of almost 50 coastal and island states between East Africa and Vanuatu and the latitudes of about 27 degrees north and south of the equator.

- The dugong has high conservation value as the only herbivorous mammal that is strictly marine, the only extant species in the family Dugongidae and one of only four extant species in the order Sirenia.
  - The dugong has extremely high cultural and dietary values throughout much of its range and is a flagship species for the conservation of coastal habitats throughout much of its range.
  - Dugongs are listed as vulnerable to extinction by the IUCN. Populations are believed to be depleted throughout much of the range; there is considerable uncertainty about their status in most of the remainder of their range.
  - Critical dugong habitats include seagrass beds, particularly seagrass occurring at depths of less than 10m deep and especially less than 3m deep, plus movement corridors which may span deeper waters including ocean trenches.
  - If dugongs become locally extinct in an area they may be slow to recolonise and the quality of the seagrass community may decline during the period of recolonisation.
  - Dugong habitats are subject to large scale diebacks associated with extreme weather events. If habitat is lost, dugongs postpone breeding or move.
  - Because dugongs are long-lived slow breeding animals, adult mortality is the most serious human impact.
  - Monitoring population trends is an insensitive trigger for management intervention, except over very long time frames, but estimates of population size are required to estimate sustainable levels of human mortality from all causes.
  - Sustainable dugong anthropogenic mortality targets must recognize variability in the size and potential rate of increase of target population and be calculated at ecologically relevant spatial (hundreds of kilometres) and temporal scales (decades)
  - In areas with small dugong populations (hundreds or less), management actions should aim to eliminate human mortality and conserve habitats.
  - As individual dugongs can move hundreds of kilometres in a few days, management needs to be implemented at regional scales if it is to be ecologically relevant to dugongs.
6. The meeting noted that dugong were known to move between jurisdictions and that any action to conserve and manage dugong populations would need to require cooperation at a regional scale.

### **Threats to dugong:**

7. Professor Helene Marsh gave a presentation on threats to dugong in the Indian Ocean and South-East Asian region. Delegates then discussed these threats, and began to identify a detailed list of threats to dugong populations in the Indian Ocean and South-East Asian region, as well as opportunities for mitigation and prevention. The meeting recognised that regional cooperation was needed to address threats to dugongs.
8. Professor Marsh provided the following information on threats: The anthropogenic threats to dugong populations are widespread and their relative importance differs in different regions. Causes of dugong mortality include legal subsistence harvest for food, medicine and materials, poaching, incidental capture in artisanal and commercial fisheries especially net and dynamite fisheries, and vessel strike. Threats to dugong habitats include coastal development, agricultural

pollution exacerbated by poor catchment management and extreme weather events, damage to seagrass beds from fishing activities, oil spills, disturbance to dugongs from vessels including tourist vessels, and climate change.

### **Key elements and possible framework for regional cooperation**

9. The CMS representative, Mr Douglas Hykle, provided information on the CMS and conservation frameworks made under it, including legally binding agreements and legally non-binding Memoranda of Understanding (MoUs). The presentation included information on experience from the development and implementation of the Indian Ocean and South-East Asian Marine (IOSEA) Turtle MoU and the development of legally binding agreements and the positives and negatives of both approaches.
10. The meeting noted that regional frameworks provide an opportunity to cooperate to conserve species, to share information, and to seek financial and technical resources.
11. The meeting discussed which framework appeared to be the most appropriate, and agreed to begin work on a preliminary framework for the region. It was recognised that the IOSEA Turtle MoU was already operational in the region and provided an example of how regional cooperation under the CMS could be achieved through a regional conservation instrument.
12. The meeting identified and discussed the key objectives and elements for a regional dugong conservation arrangement, and requested the technical experts to examine the extent to which the approach to conservation and management actions under the IOSEA Turtle MoU which could inform the development of a regional conservation and management arrangement for dugong.
13. The meeting considered the nature of actions that could be pursued at a regional level and viewed a legally non-binding MoU framework as the most suitable approach to promote regional cooperation. The meeting identified the appropriate structure and format for a draft MoU.
14. The meeting divided into 3 working groups to discuss and identify priorities for conservation and management action under a regional arrangement. The outcome of those discussions is Annex 3.
15. Working groups reconvened to identify mechanisms to promote the conservation status and need of conservation actions in states, and to generate funding and capacity. The outcome of those discussions is Annex 4.

### **Progressing Regional Dugong Conservation**

16. The meeting invited comments on the sample draft text of a memorandum of understanding. It was agreed that all references in the text to “arrangement” would be amended to read “memorandum of understanding”, and that consideration be given to including some background information on the species, perhaps as an annex.

17. Questions were raised about the definition of the term “Range State” which, it was noted, had also arisen in the context of the IOSEA Marine Turtle MoU. It was pointed out that as there were only passing references in the text to the term “Range State” -- none of them substantive -- the term need not be defined explicitly in the text, and any existing references could be amended.
18. It was agreed to insert a reference to responsible fisheries in the sixth preambular paragraph of the draft MoU text.
19. There was a general discussion of the issue of subsistence and sustainable levels of harvest of dugong, and any references to this issue in the draft MoU. Concerns were raised about the implications of such references in relation to existing national legislation, which in some countries, prohibited any harvest of dugong. It was agreed that the text in 3a) could be clarified by adding, at the end, the words: “in those States where it is allowed”. The same clarification would be added after “management of subsistence harvesting” in 3b (and elsewhere in the text, where relevant).
20. The meeting sought to clarify the potential geographic scope of the memorandum of understanding, noting the importance of involving countries throughout the range of the species, as well as other countries that are relevant (eg. in terms of possible impacts). In particular, justification was given for extending the coverage eastward to include relevant Pacific Island States, whilst taking account of other initiatives being undertaken through SPREP. The representative of Papua New Guinea indicated that his country would be comfortable working through both instruments. Without wishing to preclude further discussion of the geographic scope, in the absence of some interested countries, two possible formulations for the geographic scope were suggested:
  - “Region means all of the waters and coastal States of the Indian Ocean, East Asia, Pacific Ocean, as well as their adjacent seas, [within the range of dugong] or [bounded by latitudes 27 degrees north and south of the equator].” (This issue remained unresolved and will require further consideration at the next meeting).
21. Questions were raised as to the implications for possible amendments needed to domestic legislation and regulations to be able to implement the MoU. It was noted that the draft MoU text provided for review, formulate, revise and harmonise national legislation, as necessary. In the course of the discussion, it was suggested that the Conservation and Management Plan reflect regional differences that clearly exist.
22. The question was raised as to whether a Memorandum of Understanding should be developed with a view to stimulating national capacity and activities where few or none currently exist, or whether the starting point should be that countries first develop capacity at sub-regional levels. Views in favour of both approaches were expressed. Cambodia suggested that national representatives be called on to present their national perspectives, and that regional bodies be invited to future meetings to contribute their expertise and share valuable experience.
23. It was noted that various gatherings over the past three decades had not yielded much progress for dugong conservation in terms of international collaboration,

and that a formal MoU might stimulate greater cooperation where other initiatives had not succeeded to date. It was noted also that resource limitations may lead to disappointment over differences between the aspirations of any instrument and delivery, in terms of actions on the ground. Nevertheless, it was pointed out that for any international instrument, a certain number of years are needed before they become fully operational.

24. It was recognised that MoUs reflect the aspirations of Signatory States. The meeting noted that sometimes these aspirations do not translate to effective on-ground actions. The meeting was of the view that there needed to be a strong focus on ensuring that MoUs deliver on-ground conservation actions.
25. The future status of the Memorandum of Understanding was raised, with reference to paragraph 4d) of the basic principles; with reservations raised about the possibility of the instrument being transformed at some point into a legally-binding instrument. It was agreed that the reference to possible replacement of the MoU by a legally-binding treaty be deleted. The draft MoU text non-paper is at Annex 5.

### **Conservation and Management Actions**

26. The technical experts provided a summary of actions identified in the working groups, and developed a document which could provide guidance to potential signatories to an MOU and future meetings, on the nature and scope of potential conservation and management actions.
27. This document, *Analysis of elements from IOSEA Turtle MoU possibly relevant to dugong conservation* (Annex 6) is classified as a non-paper, to aid discussions at the second meeting on conservation and management actions. In future it would be useful to undertake work and discussion to target actions that are high priority and remove unnecessary duplication.

### **Next Steps**

28. Thailand/Australia offered to disseminate outcomes of the meeting and to coordinate intercessional activity:
  - Identify relevant experts;
  - Seek support for process and for States (NGOs and IGOs).
  - Provide contact point to provide comments on future activities.
29. Participants were requested to provide to Australia and Thailand their views on the non-paper draft MoU text and on the document *Analysis Of Elements From IOSEA Turtle MoU Conservation Management Plan Possibly Relevant To Dugong Conservation* to serve as a basis for future negotiation.
30. The meeting expressed the view that it would be important to undertake research to provide additional information to fill in knowledge gaps. Participants requested that scientific and cultural information be shared among States within the dugong's range and to undertake joint research and provide some funding assistance.

31. It was proposed that a second meeting be held in 2006. The meeting agreed to undertake intersessional discussion with a view to identify a host for the meeting and agree on timing. Professor Marsh indicated that there may be a technical workshop on dugongs in United Arab Emirates in early 2006 which could be linked to the a future meeting.
32. The meeting expressed a benefit that, at future meetings, each delegation should comprise two delegates (one policy and one technical) to bring greater expertise to discussions. In addition, at future meetings, the agenda could provide an opportunity to discuss national actions and information on dugongs. There was also a request that the cultural value of dugongs be discussed.
33. Participants representing Contracting Parties of the CMS were requested to provide a report to the CMS Conference of the Parties on action to work toward implementation of Resolution 7.7 and Recommendation 7.5.
34. If participants are seeking information, they may contact Dr Hines who offered to provide the link to two listserves: Serinian listserv and Asian Marine Mammal listserv to provide an opportunity for States to seek information from dugong experts. The meeting expressed a desire for web- or email-based communication to increase knowledge among States where dugong occur.



Australian Government  
Department of the  
Environment and Heritage



Thai Government  
Department of Marine  
and Coastal Resources

First Meeting on Dugong Conservation in the Indian Ocean and South-east  
Asian Region  
Draft Annotated Provisional Agenda

23-25 August 2005  
Chaophya Park Hotel, Bangkok, Thailand

Tuesday 23 August 2005

Schedule	Items
08.00-09.00	<b>Registration</b>
09.00-9.30	<b>Welcoming remarks</b> The meeting will be formally opened by the representative of the Secretariat of the Convention on Migratory Species (CMS), Mr Douglas Hykle. Mr Hykle will invite the meeting to appoint co-Chairs, who will then also deliver opening statements.
09.30-09.40	<b>Adopting the draft provisional agenda</b> The meeting will be asked to review and, if satisfied, adopt the provisional agenda.
9.40-10.30	<b>Dugong biology, ecology, populations and behaviour</b> A technical expert, Prof. Helene Marsh will deliver a short 30-minute presentation on dugong biology, ecology, populations and behaviour. The remainder of the session will then be opened for general discussion. All delegates could consider sharing information on circumstances within their countries jurisdiction, including information on management actions or research underway. (CMS/DUGONG/INFO1)
10.30-11.00	<b>Morning tea</b>
11.00-12.30	<b>Threats to dugong</b> Prof. Helene Marsh will give a short presentation on threats to dugong in the Indian Ocean and South-East Asian region. Delegates will then be invited to discuss and develop a detailed list of threats to dugong populations in the Indian Ocean and South-East Asian region. (CMS/DUGONG/INFO1)
12.30-2.00	<b>Lunch</b>
2.00-3.30	<b>Key elements and possible framework for regional cooperation</b> The CMS representative will be invited to provide information on the CMS and information on conservation frameworks made under it – both legally binding agreements and Memorandums of Understanding (MoU). The presentation will include information on lessons learnt from the development and implementation of the Indian Ocean and South-East Asian Marine Turtle Memorandum of Understanding and a legally binding agreement. The CMS representative will provide advice on key elements to both legally binding agreements and MoU arrangements. The meeting will then discuss which framework appears to be the most appropriate, discuss the positives and negatives of both approaches and agree on a preliminary framework for development.
3.30-4.00	<b>Afternoon tea</b>

**Participants of First Meeting on Dugong Conservation in the Indian Ocean and South-east Asia  
Region Chaophyapark Hotel, Thailand  
23-25 August 2005**

Number of Participants	Name	Country	Contact details
1	Mr. Douglas Hykle	CMS	Representing CMS Secretariat Co-ordinator / Senior CMS Advisor IOSEA Marine Turtle MoU Secretariat c/o UNEP Regional Office for Asia and the Pacific 2 <sup>nd</sup> Floor, United Nations Building, Rajdamnern Ave., Bangkok. 10200 Tel: +(662) 288 1471 Fax: +(662) 280 3829 E-mail: <a href="mailto:iosea@un.org">iosea@un.org</a> <a href="http://www.Ioseaturtles.org">www. Ioseaturtles.org</a>
2	Mr. Andrew Mc Nee	Australia	Assistant Secretary Marine Environment Branch Department of the Environment and Heritage GPO Box 787 Canberra ACT 2601 Tel: +61 2 6274 2462 Fax: +61 2 6274 2455 Email: <a href="mailto:Andrew.mcnee@deh.gov.au">Andrew.mcnee@deh.gov.au</a>
3	Ms. Bianca Havas	Australia	International Fund for Animal Welfare 8 Belmore Street Surry Hills NSW 2010 Tel: +61 2 9288 4900 Fax: +61 2 9288 4901 Email: <a href="mailto:bhavas@ifaw.org">bhavas@ifaw.org</a>
4	Mr. Clinton Dengate	Australia	Assistant Director Migratory and Marine Species Section Department of the Environment and Heritage GPO Box 787 Canberra ACT 2601 Tel: +61 2 6274 1193 Fax: +61 6274 2455 Email: <a href="mailto:clinton.dengate@deh.gov.au">clinton.dengate@deh.gov.au</a>
5	Ms. Denise Boyd	Australia	Head of Programs International Fund for Animal Welfare 8 Belmore Street, Surrey Hills, NSW 2010 Tel: +61 2 9288 4930 Fax: +61 2 9288 4901 Email: <a href="mailto:dboyd@ifaw.org">dboyd@ifaw.org</a>
6	Prof. Helene Marsh	Australia	Professor of Environmental Science James Cook University Townsville 4811 Tel: +61 7478 15675 Fax: +61 7478 16126 Email: <a href="mailto:helene.marsh@scu.edu.au">helene.marsh@scu.edu.au</a>
7	Dr. Kirstin Dobbs	Australia	Acting Director of Conservation Heritage and Indigenous Partnerships Great Barrier Reef Marine Park Authority, PO Box 1379, Townsville Qld 4810 Tel. +61 7 4750 0845 Fax. +61 7 4772 6093



Number of Participants	Name	Country	Contact details
			Email: <a href="mailto:Kirstind@gtrmpa.gov.au">Kirstind@gtrmpa.gov.au</a>
8	Mr. Paul Ryan	Australia	Acting Senior Manager, Environment Policy Australian Fisheries Management Authority Box 7051, Canberra Business Centre, Canberra Act 2610 Tel: +61 2627 25266 Fax: +61 2627 25167 Email: <a href="mailto:Paul.Ryan@afma.gov.au">Paul.Ryan@afma.gov.au</a>
9	Mr. Scott Whiting	Australia	Project Officer-Turtles and Marine Management WWF Australia PO Box 1268, Darwin,NT Tel: +61 8 894 17554 Fax: +61 8 894 16494 Email: <a href="mailto:swhiting@wwf.org.au">swhiting@wwf.org.au</a>
10	Mr. Vic Mcgrath	Australia	Cultural Centre Manager Torres Strait Regional Authority 82 Hargrave St., Thursday Island, Queensland 4875 Tel: +61 1406 92001 Email: <a href="mailto:Victor.Mcgrath@tsra.gov.au">Victor.Mcgrath@tsra.gov.au</a>
11	Dr. Mohammed Al-Rumaidh	Bahrain	Fishery Researcher Bahrain Centre for Studies & Research P.O. Box 496 Tel: +973 17 754082 Fax: +973 17 754822 Email: <a href="mailto:malrumaidh@bcsr.gov.bh">malrumaidh@bcsr.gov.bh</a>
12	Mr. Ing Try	Cambodia	Deputy Director of DOF Department of Fisheries #186 Norodom Blvd, P.O.Box 582, Phnom Penh (H/P): (855) 11 957 881 Tel/Fax: (855-23)219 256 Email: <a href="mailto:tmmp.cam@online.com.kh">tmmp.cam@online.com.kh</a>
13	Mr. VA Longdy	Cambodia	Staff Department of Fisheries 186 Norodom Blvd PO Box 582 Phnom Penh Cambodia Tel: (855-23) 219 256 and H/P (855-12) 995 665 Fax: (855-23) 219 256 Email: <a href="mailto:maric@online.com.kh">maric@online.com.kh</a>
14	Ms. Xin Jing	China	Engineer China National Environmental Monitoring Center (CNEMC) No.1 Yuhuanlu, Chaoyang District, Beijing, China (P.C.100029) Tel: +86 10 6655 6322

Number of Participants	Name	Country	Contact details
			Fax: +86 10 6655 6304 Email: <a href="mailto:jingxin@cnemc.cn">jingxin@cnemc.cn</a>
15	Mr. Philippe Gue'rin	France	Deputy Head of Delegation Government of France Embassy of France, 35. Charernkrung 36 Rd., Bangkok. 10500. THAILAND Tel. +66 2 657 5106 Fax. +66 2 657 5111 Email: <a href="mailto:philippe.guerin@diplomatic.gouv.fr">philippe.guerin@diplomatic.gouv.fr</a>
16	Ms. Mita Banerjee	India	Regional Deputy Director (Western Region) Ministry of Environment and Forests Wildlife Regional Office, Western Region, 11 Air Cargo Complex, Sahar, Mumbai – 400 099 Tel: +91 22 2682 8184 Fax: +91 22 2682 8184 Email: <a href="mailto:rddwr@vsnl.com">rddwr@vsnl.com</a> <a href="mailto:mitabjee@yahoo.co.uk">mitabjee@yahoo.co.uk</a>
17	Ms. Ahsanal Kasasiah	Indonesia	Head of Development and Utilization of Marine Parks Division Director General of Marine, Coasts and Small Islands Ministry of Marine Affairs and Fisheries JL. Medan Merdeka Timur No.16, Jakarta Pusat Tel: +62 (21) 352 2045 Fax: +62 (21) 352 2045 Email: <a href="mailto:akasasiah@yahoo.com">akasasiah@yahoo.com</a>
18	Dr. Kenichi Tatsukawa	Japan	Assistant Professor Ocean Research Institute, University of Tokyo Tel. +81-(0)3-5351-6490 Fax. +81-(0)3-5351-6490 Email: <a href="mailto:tatukawa@ori.u-tokyo.ac.jp">tatukawa@ori.u-tokyo.ac.jp</a>
19	Ms. Via Sabime	Madagascar	Forest Engineer Circonscription de l'Environnement ds Eaux et Forets d Antalaha, B.P.3948, Antsahavola Tel. +261 2022 64588 (mobile)+261 3207 75065 Fax. +261 2022 30488 Email: <a href="mailto:foretminanado.mg">foretminanado.mg</a>
20	Mr. Kamarruddin Ibrahim	Malaysia	Chief of TUMEC Turtle and Marine Ecosystem Centre Department of Fisheries Rantau Abang, 23050 Dungun, Terengganu Tel. +60 (9) 845 8169 Fax. +60 (9) 845 8017 Email: <a href="mailto:kdin55@yahoo.com">kdin55@yahoo.com</a>
21	Mr. Mohamed Zuhair	Maldives	Deputy Director, Protected Area Management Ministry of Environment, Energy and Water Huravee Building, Ameer Ahmed Magu Malé 20-02 Tel. +96 331 3039 Fax. +96 332 2286 <a href="mailto:mohamed.zuhair@environment.gov.mv">mohamed.zuhair@environment.gov.mv</a>

Number of Participants	Name	Country	Contact details
22	Ms. Daw Kyi Kyi Myint	Myanmar	Head of Branch National Commission for Environmental Affairs Ministry of Forestry Thiri Mingala Lane, Kaba Aye Pogada Rd, Yankin Township, Yangon Tel: 95-1-651374 Fax: 95-1-664459 Email: timcertcom@mptmail.net.mm env.myan@mptmail.net.mm
23	Mr. Abrarul Hasan	Pakistan	Marine Zoologist Zoological Survey Department Block 67, Pak Sectt Shahrah-e-Iraq, Karachi 74200 Tel: 0092 21 9203 334 Fax: 0092 21 9203 334
24	Mr. Barnabas Wilmott	Papua New Guinea	Assistant Secretary-Wildlife Environment Department of Environment and Conservation PO Box 6601, Boroko, NCD Tel. +675 325 0195 Fax. + 675 325 0182
25	Dr Rizza Araceli Salinas	Philippines	Pawikan (Marine Turtle) Conservation Project Protected Areas and Wildlife Bureau Department of Environment and Natural Resources Protected Areas and Wildlife Bureau Quezon Avenue, Quezon City Tel: +632 925 8946 (or +632 924 6031 to 35 local 223) Fax: +632 924 0109 or +632 925 8945 Email: pawikan@edsamail.com.ph or pawikan@pawb.gov.ph
26	Mr. Pierre-Andre Adam	Seychelles	Project Officer of Conservation Section Ministry of Environment & Natural Resources PO Box 445 Botanical Garden Mont Fleuri, Mahe Seychelles Tel: 00248 670500 Fax: 00248 610 648 Email: p.adam@env.gov.sc
27	Dr. Tharaka Prasad	Sri Lanka	Deputy Director Wildlife Health Division Department of Wildlife Conservation No18, Gregory's Road, Colombo 07 Tel. +94 112 698557 Ext.415 Fax. +94 112 698556 Email: tharaka@dwlc.lk
28	Dr. Maitree	Thailand	Director General

Number of Participants	Name	Country	Contact details
	Duangasawasdi		Department of Marine and Coastal Resources Ministry of Natural Resources and Environment <b>92 Phaholyothin 7, SamSen-Nai Bangkok 10400</b> Tel/Fax. +66 2 298 2167 Email:
29	Dr. Cherdchinda Chotiyaputta	Thailand	Marine and Coastal Resources Management Specialist Department of Marine and Coastal Resources Ministry of Natural Resources and Environment <b>92 Phaholyothin 7, SamSen-Nai Bangkok 10400</b> Tel. +66 2 298 2167 Email: cherdchc@dmcr.go.th, cherchc@yahoo.com
30	Mr. Wannakiat Thubthimsang	Thailand	Director Institute for Research and Development of Marine and Coastal Resources Department of Marine and Coastal Resources 51 Moo 8, Sakdidej Rd., Wichit, Muang District, Phuket Province 83000 Tel. +66 76 391 128 Fax. +66 76 391 127 Email: wannakiat@yahoo.com
31	Mr. Udom Bhatiyasevi	Thailand	Advisor to DMCR, THAILAND Department of Marine and Coastal Resources 159/72 Chang-Ar-Kart Utit Rd., Moo1, Seegun, Donmuang, Bangkok 10210 Tel. +66 2 929 4207, +66 1 869 6671 Fax. +66 2 929 4207 Email: camf_eg@hotmail.com
32	Mr. Mickmin Charuchinda	Thailand	Director Eastern Marine and Coastal Resources Research Center Department of Marine and Coastal Resources 237 Moo 6, Tambon Kram, Klaeng District, Rayong Province 21190 Tel. +66 38 657 466, +66 1 820 9495 Fax. +66 38 657 699 Email: mannai@loxinfo.co.th
33	Mr. Supot Chantrapornsyl	Thailand	Director Southern Marine and Coastal Resources Research Center Department of Marine and Coastal Resources 618/1 Moo2, Kanjanawanich Rd., Muang Songkhla Province. 90100 Tel. +66 74 335 038 Fax. +66 74 335 038 Email: supot@dmcr.go.th
34	Mr. Sombat Poovachiranon	Thailand	Senior Fisheries Biologist Phuket Marine Biological Center Department of Marine and Coastal Resources 51 Moo8, Sakdidej Rd., Wichit, Muang District,

Number of Participants	Name	Country	Contact details
			Phuket Province 83000 Tel. +66-76-391-128 Fax. +66-76-391-127 Email: <a href="mailto:pmbc@loxinfo.co.th">pmbc@loxinfo.co.th</a>
35	Ms. Kanjana Adulyanukosol	Thailand	Senior Fisheries Biologist Phuket Marine Biological Center Department of Marine and Coastal Resources 51 Moo8, Sakdidej Rd., Wichit, Muang District, Phuket Province 83000 Tel. +66 76-391-128, +66 1 597 5133 Fax. +66-76-391-127 Email: <a href="mailto:k_adulyanukosol@yahoo.com">k_adulyanukosol@yahoo.com</a>
36	Mr. Potchana Boonyanate	Thailand	Fisheries Biologist Eastern Marine and Coastal Resources Research Center Department of Marine and Coastal Resources 237 Moo 6, Tambon Kram, Klaeng District, Rayong Province 21190 Tel.+66 38 657 699, +66 1589 3647 Fax. +66 38 657 699 Email: <a href="mailto:potchanaboon@hotmail.com">potchanaboon@hotmail.com</a>
37	Mr. Somchai Monanunsap	Thailand	Fisheries Biologist Eastern Marine and Coastal Resources Research Center Department of Marine and Coastal Resources 237 Moo 6, Tambon Kram, Klaeng District, Rayong Province 21190 Tel.+66 38 657 699, +66 1589 3647 Fax. +66 38 657 699 Email: <a href="mailto:mannaisomchai@yahoo.com">mannaisomchai@yahoo.com</a>
38	Dr. Supawat Kan-atireklap	Thailand	Fisheries Biologist Eastern Marine and Coastal Resources Research Center Department of Marine and Coastal Resources 237 Moo 6, Tambon Kram, Klaeng District, Rayong Province 21190 Tel. +66 38 657 699, +66 9 217 7342 Fax. +66 38 657 699 Email: <a href="mailto:supawat_kan@yahoo.com">supawat_kan@yahoo.com</a>
39	Ms. Kruewan Vecharak	Thailand	Public Relations Officer Department of Marine and Coastal Resources 92 Phaholyothin 7, Samsen-Nai, Bangkok. 10400 Tel. +62 2 298 2020 Fax. +62 2 298 2020 Email: <a href="mailto:KV1119@hotmail.com">KV1119@hotmail.com</a>
40	Mr. Samruai Likhasittipun	Thailand	Fisheries Biologist Eastern Marine Fisheries Research and Development Center Department of Fisheries Ban Phe, Muang District, Rayong 21160 Thailand Tel: 0-3865-1764, 0-1701-3628 Fax: 0-3865-1763 Email: <a href="mailto:emdec2003@yahoo.com">emdec2003@yahoo.com</a>

Number of Participants	Name	Country	Contact details
41	Ms. Phenkae Kunawongdet	Thailand	Fisheries Biologist Coastal Fisheries Research and Development Bureau Kung Krabaen Bay Royal Development Study Center Department of Fisheries Klong Kud, Thamai, Chanthaburi Province 22120 Tel. +66 39-388-117 Fax. +66 39-388-119 Email: kuna_pk1@yahoo.com kkbrdsc@yahoo.com
42	Mr. Surasak Thongsukdee	Thailand	Fisheries Biologist Marine and Coastal Resources Research Center Department of Marine and Coastal Resources <b>92 Phaholyothin 7, SamSen-Nai</b> <b>Bangkok 10400</b> Tel/Fax. +66 2 298 2167 Email: surasak@dmcr.go.th
43	Mr. Sirapop Poonpetch	Thailand	Legal Officer Office of Law Department of Marine and Coastal Resources Tel. 02-298-2649
44	Mr. Tachanat Bhutrasataponkul	Thailand	International Project Coordinator Department of Marine and Coastal Resources Tel. +66 6 392 5036 Email: tsunami_kitt@yahoo.com
45	Ms. Palap Tiptus	Thailand	Biologist Phuket Marine Biological Center 171/2501 Phaholyothin Rd, Rlongtaran, Saimai, Bangkok. Tel. +66 9 184 4434 Email: p_tiptus@yahoo.com
46	Mr. Weerapan Thongmark	Thailand	Fisheries Administration Officer 6 Office of Marine and Coastal Resources Conservation Department of Marine and Coastal Resources Tel. +66 2 298 2143, +66 9 160 6216 Email: weerapan_t@yahoo.com
47	Mr. Atichat In-Tongkam	Thailand	Marine Biologist Marine and Coastal Resources Research Center The Central Gulf of Thailand Department of Marine and Coastal Resources Tel. +66-7752-2457 Fax. +66-7752-2458
48	Ms. Chanpen Wutthivorawong	Thailand	Fisheries Biologist Eastern Marine and Coastal Resources Research Center

Number of Participants	Name	Country	Contact details
			Department of Marine and Coastal Resources 237 Moo 6, Tambon Kram, Klaeng District, Rayong Province 21190 Tel. +66 38 657 466 Fx. +66 38 657 699 Email: zgrass_43@yahoo.com
49	Ms Sansanee Puangthong	Thailand	International Officer Planning Division Department of Marine and Coastal Resources <b>92 Phaholyothin 7, SamSen-Nai Bangkok 10400</b> Tel. +66 2 298 2588 Fax. +66 2 298 2592 Email: spuangthong@yahoo.com
50	Mr. Tarit Songthong	Thailand	Officer Department of Marine and Coastal Resources <b>92 Phaholyothin 7, SamSen-Nai Bangkok 10400</b> Tel. +66 2 298 2020 Fax. +66 2 298 2020 Email: stanarat@hotmail.com
51	Mr. Chavalit Vihayanon	Thailand	Senior Freshwater Biologist WWF Thailand 104 Outreach Building, AIT, Phaholyothin Rd., Klong Nung, Klong Luang, Patumthani. 12120. Tel. +66 2 524 6128, 66 2 524 6129 Fax. +66 2 524 6174 Email: chavaliv@wwfthai.org
52	Ms. Pornsook Chongprasith	Thailand	Chief, Marine Environment Pollution Control Department 92 Phaholyothin7, Sam Sen Nai, Phayathai, Bangkok 10400 Tel. +66 2 298 2239 Fax. +66 2 298 2240 Email: pornsook_chongprasith@yahoo.com
53	Mr. Suwan Pitaksintorn	Thailand	Senior Scientist National Park bureau National Park, Wildlife and Plant Conservation Department Phaholyothin Rd., Chatuchak, Bangkok 10900 Tel./Fax. 02-561-4292-3 Ext.746
54	Dr. Suwanna Panatrakul	Thailand	Assistant Prof. Department of Aquatic Science Faculty of Science Burapha University Tambon Sansuk, Chonburi Province Tel. +66 38 745 900 ext.3092 Fax. +66 38 393491 Email: suwannak@buu.ac.th

Number of Participants	Name	Country	Contact details
55	Dr. Sirirat Siripattrawan	Thailand	Lecturer (Aquatic Animal) Faculty of Veterinary Science Mahidol University 25/25 Phuttamonthon 4 Road Salaya, Phuttamonthon District Nakhon Pathom 73170 Tel. +66 2 441 5242 ext. 1519, 1544 +66 6 302 7359 Fax. +66 2 441 0773 Email: ss_ple@hotmail.com
56	Ms. Tarinee Phadungsakchayakul	Thailand	Assistant Researcher Department of Aquatic Science Faculty of Science Burapha University Tambon Sansuk, Chonburi Province Tel. +66 1 782 6160 Email: tarineep@yahoo.com
57	Mr. Pisit Charnsnoh	Thailand	President Yadfon Association 16/4 Rakchan Road, Muang District Trang 92000 Tel. +66 75 219 737 Fax. +66 75 219 327 Email: yadfon@loxinfo.co.th
58	Ms. Pongthong Onoora	Thailand	Chief, International Law Group Fisheries Foreign Affairs Division Department of Fisheries Ministry of Agriculture and Cooperatives Kasetsart University Campus, Chatuchak, Bangkok 10900 Tel. +66-2-579-7941 Fax. +66-2-561-1974, +66-2-562-0530 Email: pongtho@fisheries.go.th <a href="mailto:pongthong2@yahoo.ie">pongthong2@yahoo.ie</a>
59	Mr. Meechai Aiyasoon	Thailand	Wildlife Conservation Office, National Park Wildlife and Plant Conservation Dept. Phaholyothin Rd., Chatuchak, Bangkok 10900 Tel. +66 1 892 4615
60	Dr. Ellen Hines	United States	Assistant Professor Department of Geography and Human Environmental Studies San Francisco State University 1600 Holloway Ave. San Francisco, CA 94132 Tel: (415) 405-0921 Fax: (415) 338-6243 Email: ehines@sfsu.edu
61	Mr. Keith Symington	Vietnam	Marine Programme Coordinator WWF



Number of Participants	Name	Country	Contact details
			c/o Horison Hotel Office Complex, HO Cat Linh Email: keithsymington@yahoo.com
62	Mr. Tran Trong Anh Tuan	Vietnam	Officer Vietnam Environmental Protection Agency No 67 Nguyen Du Street, Ha Noi Tel: +844 9424557 Fax: +844 8223189/ 8224187 Email: anhtuan@nea.gov.vn
63	A-Nasser Munibari	Yemen	Non-resident Ambassador Republic of Yemen to Thailand Yemen Embassy Kuala Lumpur 7 Iatan Kodondon Off Jalan Ampang Hillir Kuala Lumpur 55000 Tel. +603 425 11 793 Fax. +603 425 11 794 Email: Munibari@yahoo.com
64	Ms Sansanee Puangthong	Thailand	International Officer Planning Division Department of Marine and Coastal Resources 92 Phaholyothin 7, SamSen-Nai Bangkok 10400 Tel. +66 2 298 2588 Fax. +66 2 298 2592 Email: spuangthong@yahoo.com
65	Mr. Tarit Songthong	Thailand	Officer Department of Marine and Coastal Resources 92 Phaholyothin 7, SamSen-Nai Bangkok 10400 Tel. +66 2 298 2020 Fax. +66 2 298 2020 Email: stanarat@hotmail.com

## ANNEX 3. SUMMARY WORKING GROUP – OUTCOME FROM SESSION #1

Wednesday 24 August 2005  
09:00 – 11:30 (Morning Tea 10:30)

Three Working Groups were formed to consider a number of key questions that emerged from the Meeting yesterday (23 August 2005). The first three questions were:

### **Question 1 – Priorities for Action**

Six key areas and potential activities were identified under which regional actions could be undertaken (see page 4). The areas were:

- Reduced mortality
- Protect Habitat
- Education, awareness and participation
- Promote implementation
- Research and monitoring
- International cooperation

Considering these areas and the points raised under each of them yesterday identify two or three areas of priority and why they are a priority.

### **Question 2 – ‘Conservation Plan’**

Considering the detailed list of possible actions that were identified yesterday review the items and identify any additional actions that could be considered. Discuss whether that list of actions provide the basis for a ‘Conservation Plan’ promoting cooperation conservation at a regional scale.

### **Question 3 – Framework**

Having identified a range of regional cooperation actions considers what framework would promote delivery? Discuss the advantages and disadvantages of using the modified text of the IOSEA MOU (Non-paper) as a starting point.

In considering the questions each Group appointed a rapporteur who reported back to the Plenary on the considerations of the Group. A summary of the three presentations is provided below.

## **SUMMARY**

The six key areas of potential activity were identified under which regional actions were considered and potential activities under each point were prioritised. Resulting from this process were some common elements that could be considered within a Conservation Management Plan under a Dugong MOU.

- Reduced mortality

The delegates concluded that it was necessary to have an understanding of mortality factors impacting on dugongs within a jurisdiction. In particular incidental capture in fishing nets, direct harvest and potential negative impacts from tourism were deemed to be the highest priority for action. However, in recognition of some of these key mortality factors, there was also a recognition that providing alternative livelihoods for local communities, including maintaining cultural protocols (eg. status) was important as was the need for any subsistence harvest to be sustainable for that population of dugongs.

- Protect Habitat

Identification of key dugong habitats within jurisdictions and subsequent protection or conservation measures (e.g. prevention of destructive fishing practices), with community participation in such areas was seen to be very important. This would assist with reducing direct and indirect impacts from fisheries and vessel traffic in key dugong habitats. Where key dugong habitats were not known within jurisdictions, rapid assessment of potential areas was a critical starting point. Developing networks of protected habitats within and between jurisdictions would allow protection across a broader region and would make such protection more biologically relevant than if treated as stand-alone initiatives. Identifying key dugong habitats would also allow for a more sensitive approach to coastal development and enable pollution abatement measures to be developed and implemented more efficiently.

- Education, awareness and participation

There was very strong support amongst delegates for having information about dugong biology, ecology, research and communication materials (e.g. pictures) available and disseminated to countries, amongst scientists and local communities. There was recognition of the need to communicate dugong

status and need for conservation among stakeholders Part of this process would include having prominent local celebrities deliver messages to target audiences. After viewing the IOSEA turtle website, there was strong support for having a web-based system available to exchange data and information.

- Promote implementation

In addition to the discussion below under Question 3, other issues that should be addressed during implementation included property rights, ethnic rights and medical uses of dugong. Research should address training and capacity building issues and the exchange of model legislation/management frameworks to provide guidance to countries in implementing various aspects of a regional arrangement. The issue of resources to implement a regional agreement was highlighted, especially from the point of view of wide economic disparities among countries that may be signatories to such an arrangement.

- Research and monitoring

The development of standard protocols/guidelines for conducting research and monitoring on dugongs and their habitats was endorsed. As part of the development and implementation of standard protocols and guidelines, there was strong endorsement to raise the capacity of local community and in-country expertise to undertake research and monitoring on dugongs and their habitats. There was a strong desire and need to encourage community initiatives, especially where top-down approaches would not be effective. Investigating fisheries-related mortality and mitigations measures was deemed to be a high priority given this was identified as a key mortality factors (see above). Linked to the idea of a web-based system for dissemination of information, it was thought that it would be useful to have a list of researchers and technical experts and their contact details, as well as mechanisms for dissemination and discussion of research results and their implications for management responses.

- International cooperation

The delegates endorsed the need for, and benefits of, international cooperation to conserve dugongs and their habitats.

### **Question 3 – Framework**

Delegates, having identified a range of actions that would benefit from regional cooperation, considered what framework would promote delivery. Advantages and disadvantages of using the modified text of the IOSEA MOU (non-paper) as a starting point were discussed and endorsed as a way forward for discussion.

There was strong agreement that a non-legally binding arrangement in the form of a Memorandum of Understanding was the preferred framework for regional cooperation. A stand-alone Action Plan under CMS was considered to be too loose an arrangement to effect conservation actions at a regional level. It was felt that a legally binding Agreement was not the appropriate mechanism at this time.

## **QUESTION: DO WE NEED TO PURSUE A REGIONAL ARRANGEMENT OR NOT?**

### **Possible themes/arguments for a cooperative agreement:**

#### **Reduce Mortality**

- minimize pressure by providing alternative livelihoods
- reduce fishing-related mortality
- cooperative/short-term responses to deal with emergency situations
- techniques for rescuing stranded animals
- examine cross-species benefits/unintended consequences of management actions
- control push nets

#### **Protect Habitat**

- MPAs (eg dugong-protected areas, focussing on seagrass habitat) at regionally-relevant scales (as opposed to isolated protected areas)
- rapid assessment of habitat, taking advantage of shared expertise/approaches
- community-based approaches are key
- sensitive approaches to coastal development, taking account of dugong presence
- pollution abatement measures

#### **Research and Monitoring**

- Investigation of fisheries-related interactions/mortality; possible mitigation measures
- Migration studies (satellite telemetry, where feasible/appropriate)
- Capacity-building for monitoring/census work; regional institutions to provide incentives to work on dugong
- Standard protocols/guidelines for research (eg for sampling/collection of data, sightings), especially between two or more neighbouring countries
- Community involvement in research; sharing of results of studies
- update/maintain international registry of dugong researchers
- exploring opportunities for joint research with other species groups
- genetic sampling for management purposes
- Cooperative research at regional scale

#### **Education / Awareness / Public participation**

- shared experiences
- combined awareness/education programmes (eg AUS, PNG)
- rapid (eg cost-effective, web-based) exchange of scientific data, including gray literature, within/among national jurisdictions
- exchange of basic information materials (eg for informing fishers)
- incentives for community involvement/protection of habitat, support for meetings to exchange information/innovative ideas
- dissemination/recognition of importance of traditional knowledge, value of dugong to indigenous communities
- instil public awareness of the rarity of having dugong in coastal waters

#### **Promote Implementation**

- develop/exchange national action plans (eg model plans)
- recognition of activities on local scale
- training/capacity building
- provision of resources
- review of national and international legislation relevant to dugong conservation
- exchange of model legislation/management frameworks
- Commonality in national legislation (harmonisation)

#### **International Cooperation**

- periodic (regular) meetings/workshops

Three Working Groups were formed to consider a number of key questions that emerged from the Meeting yesterday (23 August 2005). The last two questions were:

**Question 1.**

**What's a Dugong?**

In the development of an MOU between countries on the conservation of dugong how can we:

- Raise the consciousness about how special dugong are;
- generate a greater commitment to action;
- assist countries where dugong are cryptic (not seen);
- lift the policy priority; and
- access funding and other resources?

**Question 2.**

**Resources to support the implementation of the MOU?**

Consider the following approaches to obtaining resources to support implementation of a dugong MOU and identify those that could be a priority in the short term and those to be pursued in the longer-term.

- a) Prioritise conservation and management actions for funding
- b) Explore funding options with Governments and other donors such as the Asian Development Bank, World Bank, UNDP, European Union, UNEP, GEF
- c) Solicit funding and other contributions from industries that have impacts on dugong and their habitats
- d) Explore the use of economic instruments
- e) Approach the private sector, foundations and NGOs that may have an interest in funding activities
- f) Generate funding through self supporting schemes, eg ecotourism
- g) Seek synergies (with other regional global convention secretariats)
- h) Explore international funding support and other incentives for signatory states that effectively manage marine turtle populations.

In considering the questions each Group appointed a rapporteur who reported back to the Plenary on the considerations of the Group. A summary of the three presentations is provided below.

**SUMMARY**

**Question 1. What's a dugong?**

There was recognition amongst delegates at the meeting that in some countries, there was very little knowledge or recognition of dugong conservation issues within their jurisdictions. This could be for a variety of reason including very low numbers of dugongs inhabiting the waters within a particular jurisdiction. As such, delegates were asked to discuss what information about dugongs, the species' conservation status and/or significance would be useful to have disseminated to states that are within the range of the dugong.

Delegates were in agreement that:

- there was a need for a coordination point for dissemination of information, in culturally appropriate ways (e.g. translate into language) to describe key aspects of dugong biology and the cultural significance of dugongs where this was known;
- messages should be delivered relevant to the target audience (e.g. raising the profile of dugongs with government departments would necessitate a different message to one for a local coastal community);
- a variety of products (e.g. television documentaries, posters, books, stuffed toys) and local identities (e.g. idols, champions) would assist with spreading information about the need for dugong conservation; and
- linking to the next question, thinking laterally with respect to funding such information campaigns by seeking funding from arts-orientated organisations.

**Question 2. Resources to support the implementation of the MOU?**

The following list was endorsed as a basis upon which future resources could be accessed to support actions identified under an MOU for Dugong Conservation:

- a) Prioritise conservation and management actions for funding
- b) Explore funding options with Governments and other donors such as the Asian Development Bank, World Bank, UNDP, European Union, UNEP, GEF
- c) Solicit funding and other contributions from industries that have impacts on dugong and their habitats
- d) Explore the use of economic instruments
- e) Approach the private sector, foundations and NGOs that may have an interest in funding activities
- f) Generate funding through self supporting schemes, eg ecotourism
- g) Seek synergies (with other regional global convention secretariats)
- h) Explore international funding support and other incentives for signatory states that effectively manage marine turtle populations.

However, there was also a recognition that

- some of the above-mentioned sources may be better separated into short term and longer term basis of resources;
- resources could also mean technical expertise and other non-monetary forms of support mechanisms;
- links with other programs (e.g. fisheries, seagrass, marine turtles) need to be made as the results of such programs could also benefit dugongs; and
- examining alternative sources such as education and arts-related organisations and to broader ecosystem sources (e.g. coral reefs, mangroves).

This draft MoU is not an agreed endorsement by the First Meeting on Dugong Conservation in the Indian Ocean and South-east Asia. It presents a starting point for discussion at the second meeting.

## **Regional Dugong Conservation MoU**



**Australian Government**  
**Department of the  
Environment and Heritage**



**Thai Government**  
**Department of Marine  
and Coastal Resources**

This draft MoU is not an agreed endorsement by the First Meeting on Dugong Conservation in the Indian Ocean and South-east Asia. It presents a starting point for discussion at the second meeting.

### ***Example text for the background***

#### **Background**

The Parties to this Memorandum of Understanding (MoU), in light of the following:

The international responsibilities to conserve, protect and manage dugong populations, across their range, pursuant to the Convention on Migratory Species of Wild Animals (CMS);

Coastal states, pursuant to the 1982 United National Convention on the Law of the Sea, have a sovereign right to explore and exploit, conserve and manage the natural resources within their Exclusive Economic Zones;

The Convention on Migratory Species 7<sup>th</sup> Conference of the Parties' recommendation that states in the range of dugongs cooperate among themselves, as appropriate, and participate actively to develop and conclude a memorandum of understanding and an action plan for the conservation and management of dugongs throughout the species' range;

Dugongs are listed on Appendix I of the Conservation on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which bans international trade.

Knowledge of the biology, ecology, and population dynamics of dugongs, and information on their cultural, social and economic values is deficient, and that cooperation will facilitate research and monitoring of dugongs in order to develop and implement relevant protection measures;

Some populations of dugongs and their habitats are seriously threatened from a range of human activities such as habitat degradation and destruction, fishing pressure, unsustainable levels of hunting and poaching in some areas, vessel strikes, ecotourism, pollution, and disease;

Many maritime activities in the dugongs' range, such as fishing and tourism, are socially and economically important and should be conducted in an ecologically sustainable and responsible manner;

In some states of the dugong's range, the subsistence harvest of dugongs is an important economic, spiritual, social and cultural activity;

The dugongs' range covers a vast area, which crosses territorial borders and encroaches on Exclusive Economic Zones;

Their desire to establish through this MoU co-operative measures for the protection and management of dugongs and their habitats throughout the region, including involving all the states in the region, as well as relevant inter-governmental, non-governmental and private sector organisations, in co-operative conservation and management of dugongs and their habitat;

The desirability of involving other states whose nationals or vessels conduct activities that may affect dugongs of the region, as well as states that may be in a position to contribute resources or expertise that may promote the implementation of this MoU;

Concerted and coordinated action must be taken immediately in order to meet the threats posed to dugong populations and their habitats;



Have reached the following understandings to pursue the actions set forth in this MoU, individually and collectively, to improve the conservation status of dugongs and their habitats.

## Example text for Definitions and Interpretation

### 1. Definitions and Interpretation

- a) "Dugongs" means the species *Dugong dugon*.
- b) "Habitat" means all those aquatic environments which dugongs use at any stage of their life cycles.
- c) "Region" means all the water in and coastal states of the Indian Ocean, East Asia and Pacific Ocean within the ecological range of the dugong.
- d) "Range" means all the areas of water that the dugong inhabits, stays in temporarily, or crosses at any time during its life cycle.
- e) "Conservation status of dugongs" means the sum of the influences acting on the dugong species that may affect its long-term distribution and abundance [Article I(b) of the CMS];
- f) Conservation status will be taken as favorable when:
  - i) population dynamics indicate that the species is maintaining itself on a long-term basis as a viable component of its ecosystems;
  - ii) the range of the species is neither currently being reduced, nor is likely to be reduced, on a long-term basis;
  - iii) there is, and will be in the foreseeable future, sufficient habitat to maintain the population of the species on a long-term basis;
  - iv) the distribution and abundance of the species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management; and
  - v) levels of direct and indirect anthropogenic mortality on the species, from all causes, are low enough to allow dugong populations to recover.
- g) "Convention" means the Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 23 June 1979);
- h) "Secretariat" means, unless the context otherwise indicates, the Secretariat to this MoU;
- i) "Signatory State" means a state which has signed this MoU;
- j) This MoU will be considered as an agreement within the meaning of Article IV, paragraph 4, of the Convention.
- k) The annexes to this MoU are an integral part of it. Any reference to the MoU includes a reference to its annexes.

## Example text for Objective

### 2. Objective

The objective of this MoU is, based on the best available scientific evidence, to conserve, protect and manage, dugongs and their habitat, in order to regenerate dugong populations in the region, while taking into account the environmental, socio-economic and cultural characteristics of the Signatory States.

## Example text for Actions

### 3. Desired Actions

To achieve the objective of this MoU, in a spirit of mutual understanding and co-operation the Signatory States will, wherever possible:

- a) Co-operate closely in order to restore, or where appropriate maintain, a favourable conservation status for dugongs and the habitats on which they depend, including where appropriate, taking into account subsistence harvest of dugongs in those States where it is allowed;
- b) Implement, subject to availability of necessary resources, the provisions of the Conservation and Management Plan, which are annexed to this MoU. The Conservation and Management Plan addresses such things as: species conservation and protection, habitat protection and management, management of subsistence harvesting (in those States where it occurs), reduction of threats, research and education, information exchange and capacity building;
- c) As necessary, review, formulate, revise and harmonise national legislation relevant to the conservation of dugongs and their habitats, and make every effort to implement such legislation effectively;
- d) Consider ratifying or acceding to those international instruments most relevant to the conservation of dugongs and their habitat, in order to enhance the legal protection of the species in the region;
- e) Establish and fund a secretariat, which will assist communication, encourage reporting and facilitate activities between and among Signatory States, sub-regional institutions created pursuant to sub-paragraphs (e) and (f) of the Basic Principles (Title 4), and other interested states and organisations. The Secretariat will transmit to all of the Signatory States and to each of the sub-regional institutions, all of the national reports it receives, prepare a periodic review of progress in implementation of the Conservation and Management Plan annexed to this MoU, and perform such other functions as may be assigned by the Signatory States. The Secretariat will be based in the office of an appropriate national, regional or international organization, as decided by the consensus of the Signatory States at their first meeting, after consideration of all offers received;
- f) Establish an Advisory Committee to provide scientific, technical and legal advice to the Signatory States, individually and collectively, on the conservation, protection and management of dugongs and their habitats in the region. The Signatory States may nominate individuals for membership on the Committee who have expertise in the fields of dugong biology, dugong management, coastal development, socio-economics, law, fisheries technology, indigenous rights and other relevant disciplines. The size, composition and terms of appointment of the Advisory Committee will be determined by the Signatory States at their first Meeting.
- g) Designate a competent National Authority to serve as a focal point for communication among Signatory States and activities under this MoU, and communicate the complete contact details of this authority (and any changes thereto) to the Secretariat;
- h) Provide to the Secretariat a regular report on their implementation of this MoU, the periodicity of which will be determined at the first meeting of the Signatory States;
- i) Assess at their first meeting, the extent of the need for and possibilities of obtaining financial resources, including the establishment of a special fund for purposes such as:
  - i) meeting the expenses required for the operation of the Secretariat, [the Advisory Committee] and activities carried out under this MoU; and
  - ii) assisting the Signatory States to carry out their responsibilities under this MoU.

## Example text for Basic Principles

#### **4. Basic Principles**

- a) Each Signatory State will aim to implement, within the limits of its jurisdiction, the MoU with respect to:
  - i) its land territory adjacent to the range;
  - ii) marine areas in the region under its national jurisdiction; and
  - iii) vessels operating in the region under its flag.
- b) Implementation of this MoU, including the Conservation and Management Plan, should be assessed at regular meetings of the Signatory States to be attended by representatives of each of the Signatory States and persons or organisations technically qualified in, or relevant to, the conservation of dugongs and their habitat. Such meetings will be convened by the Secretariat and hosted by, and organized in collaboration with, one of the Signatory States. Such meetings should be held annually, at least initially. The periodicity of these meetings may be reviewed and revised by consensus of the Signatory States at any of their regular meetings.
- c) This MoU, including the Conservation and Management Plan, may be amended by a consensus resolution signed on behalf of all the Signatory States.
- d) The Signatory States acknowledge that this MoU is not legally binding.
- e) Signatory States may establish, by mutual arrangement, bilateral, sub-regional or regional management plans that are consistent with this MoU.
- f) Actions under this MoU will be coordinated with Signatory States, as well as with sub-regional institutions in the region.
- g) The original text of this MoU, in the English language, will be deposited with the UNEP Convention Secretariat, which is the Depositary of the Convention ('the Depositary'). The text so deposited with the Depositary will be considered definitive.
- h) Nothing in this MoU will preclude Signatory States from implementing stronger national measures than those specified in the Conservation and Management plan annexed to this MoU, in accordance with rules of international law.

#### **5. Resolution of disputes**

Disputes arising about the terms of this MoU will not be referred to international arbitration or adjudication. Without limiting the generality of the foregoing, none of the Signatory States will invoke Article XIII of the Convention to settle any dispute concerning the terms of this MoU. Instead, the Signatory States will endeavour to solve such disputes by amicable consultations and negotiation.

#### **6. Open for Signature, Commencement and Termination**

- a) This MoU is open for signature by all states that exercise jurisdiction over any part of the dugong's range, or a state whose flag vessels, outside national jurisdictional limits but within the area of the MoU, are engaged in operations affecting dugongs.
- b) This MoU takes effect on the first day of the third month following the month in which it is signed by the Xth Signatory State. It remains open for signature indefinitely for subsequent states, and will come into effect for those states on the first day of the third month after the month in which they sign this MoU.
- c) Any party may withdraw from this MoU by giving one year's notice of its intention to withdraw to the Depositary and that withdrawal will take effect on the anniversary of the date that the Depositary receives that notice.

[SIGNATURE BLOCK]

Signed in X copies in the English language.

**ANNEX 6. ANALYSIS OF ELEMENTS FROM IOSEA TURTLE MOU  
CONSERVATION MANAGEMENT PLAN POSSIBLY RELEVANT TO DUGONG  
CONSERVATION**

Programme	Activity
<b>Objective 1. Reduce direct and indirect causes of dugong mortality</b>	
1.1 Identify and document the threats to dugong populations and their habitats	<ul style="list-style-type: none"> <li>a) Regularly update existing data on threats to dugong populations and their habitats</li> <li>b) Establish baseline data collection and monitoring programmes to gather information on the nature and magnitude of threats</li> <li>c) Determine those populations affected by subsistence harvest, incidental capture in fisheries, and other sources of mortality</li> </ul>
1.2 Determine and apply best practice approaches to minimising those threats to dugong populations and their habitats	<ul style="list-style-type: none"> <li>a) Identify and document best practice protocols for conserving and managing dugong populations</li> <li>b) Adapt and adopt the best conservation and management practices for dugong populations</li> </ul>
1.3 Implement programmes to correct adverse social and economic incentives that threaten dugong populations	<ul style="list-style-type: none"> <li>a) Conduct socio-economic studies among communities that interact with dugongs and their habitats</li> <li>b) Identify desired modifications to the social and economic incentives in order to reduce threats and mortality, and develop programmes to implement the modifications</li> <li>c) Facilitate the development of alternative livelihoods to minimise resultant adverse social and economic impacts</li> <li>d) Identify resources and sources of funding for the programmes</li> </ul>
1.4 Reduce to the greatest extent practicable the incidental capture and mortality of dugongs in the course of fishing activities	<ul style="list-style-type: none"> <li>a) Develop and use gear, devices and techniques to minimise incidental capture of dugongs in artisanal and commercial fisheries, such as the use of alternative gears and spatial closures</li> <li>b) Develop procedures and training programmes to promote implementation of these measures</li> <li>c) Exchange information and, upon request, provide technical assistance to other signatory States to promote these activities</li> <li>d) Liaise and coordinate with fisheries industries, fisheries management organisations and community groups to develop and implement these activities</li> <li>e) Support the UN General Assembly resolution 46/215 concerning the moratorium on the use of large-scale driftnets on the high seas</li> <li>f) Develop and implement net retention and recycling schemes to minimise the disposal of fishing gear at sea and on beaches</li> <li>g) Provide and ensure the use of port facilities for the disposal of ship-borne waste</li> </ul>
1.5 Ensure that subsistence harvest is sustainable in areas where it is allowed	<ul style="list-style-type: none"> <li>a) Assess the level and impact of subsistence harvest on dugongs at ecologically relevant scales</li> <li>b) Reduce as much as possible all other human impacts on dugongs and their habitats in areas that sustain subsistence harvest</li> <li>c) Determine the cultural and subsistence values and uses of dugongs (both consumptive and non-consumptive)</li> <li>d) Establish culturally appropriate management programmes to ensure that subsistence harvest is sustainable taking account of the temporal and spatial variability of dugong reproductive rates and other impacts on the species in a</li> </ul>

Programme	Activity
	<p>precautionary manner</p> <p>e) Ensure that such programs do not have adverse unintended consequences e.g. increase harvest of other threatened species such as marine turtles</p> <p>f) Facilitate the development of alternative livelihoods in areas where the management of the subsistence harvest of dugongs has adverse cultural, social and economic impacts</p> <p>g) Negotiate, where appropriate, management agreements on the sustainable level of subsistence harvest, in consultation with other concerned States, to ensure that such harvest does not undermine conservation efforts</p> <p>h) Ensure that the management of other species (including fisheries) does not have adverse unintended consequences on the subsistence harvest of dugongs</p>
<p>1.6 Prohibit the direct harvest (capture or killing) of, and domestic trade in, dugongs, their parts or products, whilst allowing exceptions for subsistence harvest as outlined in 1.5</p>	<p>a) Enact, where not already in place, legislation to prohibit direct harvest and domestic trade other than subsistence harvest under 1.5</p> <p>b) Establish management programmes to enforce such legislation</p> <p>c) Negotiate, where appropriate, management agreements in consultation with other concerned States</p>
<p><b>Objective 2. Protect, conserve and rehabilitate dugong habitats</b></p>	
<p>2.1 Establish necessary measures to protect and conserve dugong habitats</p>	<p>a) Identify areas of critical habitat such as seagrass beds and migratory corridors, using rapid assessment techniques where appropriate</p> <p>b) Designate and manage protected/conservation areas, sanctuaries or temporary exclusion zones in areas of critical habitat, or take other measures (e.g. modification of fishing gear, banning destructive fishing practices, restrictions on vessel traffic) to remove threats to such areas, involving the local community as much as possible</p> <p>c) Consider protecting dugong habits as part of ecosystem based management e.g. networks of marine protected areas</p> <p>d) Develop incentives for adequate protection of areas of critical habitat outside protected areas</p> <p>e) Assess the environmental impact of marine and coastal development and other human activities on dugong populations and their habitats at a catchment scale</p> <p>f) Monitor and promote the protection of water quality from land-based and maritime pollution, including marine debris, that may adversely affect dugongs</p> <p>g) Strengthen the application of existing bans on the use of poisonous chemicals and explosives in the exploitation of marine resources</p>
<p>2.2 Rehabilitate degraded dugong habitats</p>	<p>a) Enhance recovery of degraded seagrass, mangrove and coral reef habitats used by dugongs</p>
<p><b>Objective 3. Improve understanding of dugong ecology and populations through research, monitoring and information exchange</b></p>	
<p>3.1 Conduct studies on dugongs and their habitats targeted to their conservation and management</p>	<p>a) Conduct baseline studies or gather secondary information on dugong population and their habitats using cost effective techniques, including community-based monitoring</p> <p>b) Initiate and/or continue long-term monitoring of priority dugong populations at appropriate spatial scales in order to assess conservation status, using a</p>

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	<p>combination of traditional, community-based and western science techniques where appropriate</p> <ul style="list-style-type: none"> <li>c) Characterise the genetic identity of dugong populations</li> <li>d) Identify migratory routes through the use of techniques such as genetic studies and/or satellite tracking</li> <li>e) Carry out studies on dugong population dynamics and survival rates</li> <li>f) Conduct research on the frequency and pathology of diseases of dugongs</li> <li>g) Promote the use of traditional ecological knowledge in research and management studies</li> <li>h) Involve local communities at all stages of the research and monitoring programs with training as required</li> <li>i) Review periodically and evaluate research and monitoring activities</li> </ul>
3.2 Conduct collaborative research and monitoring	<ul style="list-style-type: none"> <li>a) Identify and include priority research and monitoring needs in regional and sub-regional action plans</li> <li>b) Conduct collaborative studies and monitoring on genetic identity, conservation status, migrations, and other biological and ecological aspects of dugongs</li> </ul>
3.3 Analyse data to support mitigation of threats and to assess and improve conservation practices	<ul style="list-style-type: none"> <li>a) Prioritise populations for conservation actions</li> <li>b) Identify population trends using local information where appropriate</li> <li>c) Use research results to improve management, mitigate threats and assess the efficacy of conservation activities (e.g. habitat loss, etc.)</li> </ul>
3.4 Exchange information	<ul style="list-style-type: none"> <li>a) Standardise methods and levels of data collection and adopt or develop agreed protocols for <i>inter alia</i> monitoring of dugong populations and their habitats, genetic sampling, and collection of mortality data</li> <li>b) Determine the most appropriate methods for information dissemination e.g. internet and community fora</li> <li>c) Exchange at regular intervals scientific and technical information and expertise among nations, scientific institutions, non-governmental and international organisations, in order to develop and implement best practice approaches to conservation of dugongs and their habitats</li> <li>d) Disseminate traditional knowledge on dugongs, their habitats and traditional practices for conservation and management in a culturally appropriate manner</li> <li>e) Update on a regular basis data on dugong populations of regional interest e.g. country status reports</li> </ul>
<b>Objective 4. Increase public awareness of the threats to dugongs and their habitats, and enhance public participation in conservation activities</b>	
4.1 Establish public education, awareness and information programmes	<ul style="list-style-type: none"> <li>a) Collect, develop, co-ordinate and disseminate education materials e.g. dedicated regional web site</li> <li>b) Establish community learning / information centres</li> <li>c) Develop and implement accurate mass media information programmes</li> <li>d) Develop and conduct focused education and awareness programmes for target groups (e.g. policy makers, teachers, schools, fishing communities, subsistence hunters, media)</li> <li>e) Identify champions to help disseminate messages about the need to conserve dugongs and their habitats</li> <li>f) Encourage the incorporation of dugong biology and conservation issues into school curricula</li> <li>g) Organise special events related to dugong conservation and biology (e.g. Dugong Day, Year of the Dugong, symposia, community education workshops)</li> </ul>

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4.2 Develop alternative livelihood opportunities for local communities to encourage their active participation in conservation efforts	a) Identify and facilitate alternative livelihoods (including income generating activities) that are not detrimental to dugongs and their habitats, and are sustainable in nearshore regions, in consultation with local communities and other stakeholders
4.3 Promote public participation	a) Involve stakeholders, including key policymakers, subsistence hunters, and local communities in particular, in planning and implementation of conservation and management measures b) Encourage the participation of Government institutions, non-governmental organisations, the private sector and the general community (e.g. students, volunteers, fishing communities, local communities) in research, conservation and management efforts c) Implement, where appropriate, incentive schemes to encourage public participation (e.g. T-shirts, public acknowledgement, certificates)
<b>Objective 5. Enhance national, regional and international cooperation</b>	
5.1 Collaborate with and assist signatory and non-signatory States to regulate and share information on trade, to combat illegal trade, and to cooperate in enforcement activities relating to dugong products	a) Encourage signatory States that have not already done so to become Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) b) Review at a national level compliance with obligations under CITES relating to trade in dugong parts or products c) Facilitate better compliance with CITES through training of relevant authorities in cooperation with other signatory States, the CITES Secretariat and other relevant organisations d) Identify routes of international illegal trade through monitoring, and seek cooperation to take action to prevent, deter and, where possible, eliminate illegal trade e) Exchange and discuss information on compliance and trade issues at regular intervals, such as through annual reporting to the MoU Secretariat and at meetings of the signatory States f) Identify, prevent, deter and, where possible, eliminate domestic illegal trade through monitoring, implementation of legislation, identification of gaps in enforcement capabilities in each country, and training of enforcement officers
5.2 Assist signatory and non-signatory States, upon request, to develop and implement national, sub-regional and regional action plans for the conservation and management of dugongs and their habitats	a) Develop a set of key management measures that could be used as a basis for action plans, through consultation with concerned Government authorities, research institutions, NGOs, local communities and other stakeholders b) Identify existing action plans that could be used as models c) Identify specific local management issues where cooperation among States is required for successful conservation and management d) Review action plans at regular intervals to take into account recent advances in skills and knowledge regarding dugong conservation and management, as well as changes in conservation status of dugong populations
5.3 Enhance mechanisms for cooperation and promote information exchange	a) Identify and strengthen existing mechanisms for cooperation at the sub-regional level b) Develop a website and/or newsletter to facilitate networking and exchange of information

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	<ul style="list-style-type: none"> <li>c) Develop a web-based information resource for dugong conservation (including data on populations, nesting, migration, on-going projects)</li> <li>d) Regularly update a directory of experts and organisations concerned with dugong conservation</li> <li>e) Develop networks for cooperative management of shared populations, within or across sub-regions, and, where appropriate, formalise cooperative management arrangements</li> <li>f) Cooperate where possible in the establishment of transboundary marine protected areas using ecological rather than political boundaries</li> <li>g) Develop a streamlined format for reporting and exchanging information (through the MoU Secretariat and among signatory States) on the state of dugong conservation at the national level</li> <li>h) Encourage MoU signatory States that have not already done so to become Parties to the Convention on Migratory Species (CMS)</li> <li>i) Encourage signatory States to become Parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) and implement the FAO Code of Conduct for Responsible Fisheries (1995)</li> <li>j) Establish relationships with regional fisheries bodies with a view to obtaining data on incidental capture and encourage them to adopt dugong conservation measures within EEZs and territorial waters</li> </ul>
5.4 Build capacity to strengthen conservation measures	<ul style="list-style-type: none"> <li>a) Identify needs for capacity-building in terms of human resources, knowledge and facilities</li> <li>b) Provide training (e.g. through workshops) in conservation and management techniques for dugongs and their habitats to relevant agencies, individuals and local communities</li> <li>c) Coordinate training programmes and workshops</li> <li>d) Develop partnerships with universities, research institutions, NGOs, training bodies and other relevant organizations</li> </ul>
5.5 Strengthen and improve enforcement of conservation legislation	<ul style="list-style-type: none"> <li>a) Encourage and guide the establishment of legislation to protect dugongs and their habitats.</li> <li>b) Review domestic policies and laws to address gaps or impediments to dugong conservation</li> <li>c) Cooperate in law enforcement to ensure compatible application of laws across and between jurisdictions (including through bilateral/multilateral agreements and intelligence sharing)</li> </ul>
<b>Objective 6. Promote implementation of the MoU including the Conservation and Management Plan</b>	
6.1 Broaden membership in the MoU, and ensure continuity of MoU activities	<ul style="list-style-type: none"> <li>a) Encourage non-signatory States to sign the MoU</li> <li>b) Arrange sub-regional workshops involving non-signatory States to raise awareness of the MoU</li> <li>c) Consider at the first meeting of the signatory States the development of a timetable for regular revision of the MoU</li> </ul>
6.2 Promote the role of the Secretariat and the Advisory Committee of the MoU in ensuring the objectives of the Conservation and Management Plan are	<ul style="list-style-type: none"> <li>a) Secure reliable sources of funding to support the MoU Secretariat</li> <li>b) Appoint at the first meeting of the signatory States the members of the Advisory Committee</li> <li>c) Establish lines of communication between the MoU Secretariat and the Advisory Committee to facilitate advice to the signatory States</li> </ul>



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6.3 Seek resources to support the implementation of the MoU	<ul style="list-style-type: none"> <li>a) Prioritise conservation and management activities for funding</li> <li>b) Explore funding options with Governments and other donors such as the Asian Development Bank, World Bank, UNDP, European Union, UNEP, GEF, etc.</li> <li>c) Solicit funding and other contributions from industries that have impacts on dugongs and their habitats (e.g. fisheries, tourism, oil industry, real estate)</li> <li>d) Explore the use of economic instruments for the conservation of dugongs and their habitats by integrating with instruments to conserve coral reefs, seagrass and other marine wildlife</li> <li>e) Approach the private sector, foundations and NGOs that may have an interest in funding activities in particular countries to catalyse the creation of a small grants fund</li> <li>f) Generate funding for conservation and management activities through managed ecotourism and other self-supporting schemes (while benefiting local communities)</li> <li>g) Seek synergies (with respect to fund-raising, provision of institutional support, etc.) with other regional/global convention secretariats</li> <li>h) Explore international funding support and other incentives for signatory States that effectively manage populations.</li> </ul>
6.4 Improve coordination among government and non-government sectors in the conservation of dugongs and their habitats	<ul style="list-style-type: none"> <li>a) Review the roles and responsibilities of government agencies related to the conservation and management of dugongs and their habitats</li> <li>b) Designate a lead agency responsible for coordinating national dugong conservation and management policy</li> <li>c) Encourage cooperation within and among government and non-government sectors, including through the development and/or strengthening of national networks</li> </ul>
6.5 Create links to the marine turtle MoU	<ul style="list-style-type: none"> <li>a) Seek synergies with other regional global convention secretariats (the MoU for marine turtles especially)</li> </ul> <p>Explore collaborative international funding support and other incentives for signatory states that also are involved with management of marine turtle populations.</p>

The Ecology and Conservation of the Dugong  
(*Dugong dugon*)