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REPORT OF THE

Dugong Workshop for the Pacific Islands Dugong Range States

Brisbane, Australia, 11-12 April, 2010



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1. INTRODUCTION

The Dugong Sub-regional Workshop was held at the GHD meeting room, Level 1 Charlotte St., Brisbane from the 11-12 April 2010. The Agenda for the workshop is given in Annex 1. The List of Participants is given in Annex 2.

1.1. Background

The workshop is a component of the project on dugong research and conservation in the Pacific Islands region. This is a collaboration of the UNEP/CMS Office – Abu Dhabi, Secretariat of the *UNEP/CMS Dugong Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats in their Range* and SPREP. The overall objective of the project is to progress dugong conservation in the Pacific Islands region. It addresses priority actions identified under the themes of the SPREP regional Dugong and Marine Turtle Action Plans 2008-2012 as well as the objectives in the Conservation and Management Plan for the MoU *on the Conservation and Management of Dugongs (Dugong dugon) and their Habitats throughout their Range* (UNEP/CMS Dugong MoU). The project is possible with funding assistance from UNEP/CMS Office – Abu Dhabi.

1.2. Workshop Objectives

The overall objective of the workshop was to introduce the UNEP-CMS Standardised Dugong Catch/Bycatch Questionnaire and the overall project design for dugong conservation in the Pacific Islands region. Specific Workshop Objectives were to:

- Build capacity in using standardized methodologies, in particular the Standardised Dugong Catch/Bycatch Questionnaire, utilized in dugong surveys (questionnaire-based);
- Refine survey methodology to suit conditions and circumstances existing in the Pacific Islands;
- Document status of dugong conservation work in SPREP dugong range states and in relation to the regional dugong action plan 2008-2012;
- Identify priority issues concerning dugong work and conservation in the region (including identification of skills required by relevant government authorities and local communities for improving capacity for dugong management);
- Understand the value and significance of the UNEP/CMS dugong MoU.

1.3. Workshop Outcomes

All five objectives of the workshop were met and participants agreed on participation in the conduct of national dugong surveys utilizing the questionnaire developed by UNEP/CMS Office – Abu Dhabi. Participants also agreed on the timelines of the project with respect to the conduct of the surveys and reporting.

2. WORKSHOP RECORD

DAY 1 Sunday 11 April 2010

2.1. Opening

The Workshop was opened with a prayer and opening comments from UNEP/CMS Office - Abu Dhabi and SPREP, introduction of participants, introduction to the Project and the workshop Objectives and Agenda.

2.1.1. UNEP/CMS Office – Abu Dhabi

Dr. Donna Kwan welcomed participants to the workshop and noted the background to the dugong project for the Pacific Islands region. She explained that the project is the result of discussions between the UNEP/CMS Office - Abu Dhabi and SPREP in November 2009 about facilitating improved engagement of SPREP dugong range states with the UNEP/CMS Dugong MoU. The priority activities of the project include:

- For dugongs: (i) workshop/meeting, (ii) the conduct of questionnaire-based surveys nationally, and (iii) development of a proposal for implementation of the regional dugong action plan;
- For marine turtles: (i) proposal development for the implementation of the regional marine turtle action plan 2008-2012, and (ii) review of turtle legislation in 10 SPREP member states.

The project's broad objectives are to support dugong range states to the UNEP/CMS Dugong MoU:

- (i). To progress dugong (and marine turtle where appropriate) conservation in the Pacific Islands region;
- (ii). To provide technical support to implement priority regional conservation and management actions for dugongs (and turtles, where appropriate);
- (iii). To actively seek funding from donors to implement priority actions in the SPREP Dugong (and Marine Turtle, where appropriate) Action Plans 2008-2012.

2.1.2. SPREP

Mr. Lui Bell noted that SPREP has only been able to provide limited assistance to member dugong range states in the region, mainly through training attachments on dugong research in Australia for 3 range states, provision of equipment (under-water camera) to 1 range state and facilitating the Pacific Islands Dugong Network involving all SPREP dugong range states. Thus SPREP welcomes this opportunity to collaborate with CMS on dugong work. He expressed particular appreciation to Dr Donna Kwan of the UNEP/CMS Office - Abu Dhabi for the initiative on this dugong project for the Pacific Islands region.

SPREP has been, since 2006, actively encouraging its members to consider becoming parties to CMS and its' relevant agreements, including the UNEP/CMS Dugong MoU. Since the Dugong MoU has been open for signatures, SPREP has been urging member dugong range states to sign onto the MoU.

One of the initiatives that CMS and SPREP have been working on involves the placement of a CMS position at SPREP. Due to financial constraints this has not materialized yet. But with dedication, untiring effort, and the much closer collaboration now in existence, this may become a reality in the near future.

2.1.3. Conduct of the Workshop

There was no formal chairmanship elected but a “revolving facilitator” for different sessions was applied involving SPREP, CMS and the consultant, Dr Nicolas Pilcher of Marine Research Foundation.

2.2. UNEP/CMS Dugong MoU and Conservation and Management Plan and the SPREP Regional Marine Species Programme including the Dugong Action Plan 2008-2012

2.2.1. UNEP/CMS Dugong MoU and Conservation and Management Plan

Dr. Donna Kwan presented on the “Need, Challenges and Opportunities” for dugongs including shared conservation synergies with marine turtles.

She stressed that the significance of conservation of dugongs stems from the fact that it is the only member of the family Dugongidae, the only strictly marine herbivorous mammal, largest population size and range of extant Sirenia (dugong and manatees) and dugongs are currently classified as vulnerable at the global scale by IUCN.

Dugongs are also of high cultural value in many parts of their range, a valued source of food, medicine and artefacts in many countries and a flagship species for coastal peoples.

The extent of dugong occurrence is 140,000 km of coastlines across over 40 countries and is still present at the extreme ends of its range although there is a reduction in area of occupancy within its range. Some of the most important remaining dugong habitats are in the Pacific region.

The very nature of dugongs provides a challenge in conservation effort. They are long-lived and slow breeding, are sea-grass specialists, live in restricted coastal habitat subject to large-scale diebacks, they move across jurisdictions at local and regional scales, with habitats that extend across international boundaries. Dugongs have a lifespan of about 70 years, first breed at an age of 6-17 years, suckle young for up to 18 months and females bear one calf every 2.5 to 7 years depending on food supply.

Dugongs face multiple threats that include hunting for food/medicine/artefacts for subsistence, gill netting, boat strikes, by-catch in commercial fisheries and impacts from coastal development.

In terms of managing dugong populations, this can only be effective by addressing the issues of conserving the quality of critical habitats and minimizing mortality. The efforts need to be co-ordinated across jurisdictions and actions that are effective for dugongs can also benefit other marine wildlife.

Dr. Kwan then elaborated on the opportunity for the conservation of dugongs through the Convention on Migratory Species (CMS), in particular the concluded MoU on the Conservation and Management of Dugongs and their Habitats throughout their Range. Operational Tools of CMS include:

- Strict protection for endangered migratory species (concerted action);
- Co-operative Agreements to restore favourable conservation status;
- Co-operative research and conservation projects.

Furthermore, the UNEP/CMS Office Abu Dhabi, United Arab Emirates (UAE), with funding from UAE Government and hosted by the Environment Agency – Abu Dhabi, provides the secretariat and technical support to:

- The MoU on the Conservation and Management of Dugongs and their Habitats throughout their Range;
- MoU on the Conservation of African-Eurasian Birds of Prey;
- Other regionally important species, e.g. marine turtles.

Dr. Kwan explained that the Dugong MoU is non-legally binding and covers over 40 dugong range states. It came into effect on 31 October 2007, Abu Dhabi and currently has 11 Signatory States (Australia, Comoros, Eritrea, France (New Caledonia and Mayotte), India, Kenya, Madagascar, Myanmar, Philippines, Tanzania and UAE). It is currently missing key dugong range States from Pacific region (including PNG, Solomon Islands, Vanuatu and Palau). The MoU Conservation and Management Plan is the main platform for conservation which can be implemented nationally or regionally. Many of its actions can benefit other marine wildlife, including turtles. It also emphasizes:

- Reduction of direct and indirect causes of dugong mortality;
- Improvement of our understanding of dugong and their habitats through research and monitoring;
- Protection, conservation and management of habitats for dugong;
- Raising awareness of dugong conservation;
- Enhancing national, regional and international cooperation;
- Improving legal protection of dugongs and their habitats;
- Enhancing national, regional and international cooperation on capacity building.

Lastly, Dr Kwan explained how UNEP/CMS Office – Abu Dhabi can help Signatory or Range States of the Dugong MoU. She explained that assistance can be provided under the following categories:

- *Regional (Range States) and Country (Signatories) Actions:* by providing funding under the Small Grants Programme or providing co-funding and leveraging. The Secretariat can also facilitate letters of support for funding applications and the conduct of workshops.
- *Networking:* provide networking with other dugong range states (48 countries) and liaise with other experts, IGOs and NGOs.
- *Awareness Raising:* promoting and acknowledging good efforts.

The workshop was also informed that the First Meeting of the Signatory States of the Dugong MoU is scheduled on 4-6 October, Abu Dhabi, UAE.

2.2.2. SPREP Regional Marine Species Programme

Mr Lui Bell provided a summary of the SPREP regional marine species programme which focuses on dugongs, marine turtles and cetaceans (whales and dolphins). A regional five-year action plan exists for each group which identifies priority actions at all levels for their conservation in the Pacific Islands region. The theme areas for these action plans include collaboration, education and awareness, habitat protection, management, capacity building, addressing threats, research and monitoring and traditional knowledge.

Examples of SPREP assistance to member countries and territories have been in areas including:

- (i) awareness and information (e.g. Year of the Sea Turtle, educational material);
- (ii) capacity building (through country attachments, in-country specific training and regional/sub-regional training/meetings);
- (iii) Support to Research and Monitoring (e.g. provision of equipment, development of protocols/guidelines);
- (iv) Management of Species (e.g. support for the development of PI cetacean MoU under CMS);
- (v) Communication (operational Pacific Island networks on cetaceans, marine turtles, dugongs and sharks).

The provision of these assistances has been possible through collaboration with various partners.

2.3. Dugong Range States Reports

Each of the representatives from the six dugong range states in the SPREP region was given an opportunity to present on the status of dugong and national dugong work in their state. Prior to the workshop, the representatives were requested to prepare their presentation according to the format given as Annex 3.

2.3.1. Australia

- (i) Known / presumed distribution of dugongs in the country/territory;

The distribution of the dugong in Australia is from Moreton Bay in the state of Queensland, across the northern Australian marine environment to Shark Bay in the state of Western Australia.

- (ii) Known / presumed numbers of dugongs in the country/territory;

The total population estimate of dugongs living in Australian waters from the >120,000 km of coastline surveyed since 2005 (aerial surveys) is approximately 68,700 dugongs (Hodgson

2007, Marsh et al. 2007, Marsh and Lawler 2006). However, the population estimates are almost certainly under-estimates. Much of the data that supports this population estimate is outdated and there are large areas of northern Australia for which there are no data.

(iii) Known / presumed population trend over the last 100 and last 20 years;

The 20-year time series of aerial surveys suggests that dugong populations are stable in Shark Bay and the Exmouth/Ningaloo Reef region of Western Australia, the Gulf of Carpentaria, the Northern Great Barrier Reef, and the Southern Great Barrier Reef regions of Queensland; and fluctuating in Torres Strait, Hervey Bay and Moreton Bay in Queensland (Dobbs et al. 2008, Hodgson 2007, Marsh and Lawler 2006, Marsh et al. 2007). However, it should be noted that the power of the aerial surveys to detect population declines is weak unless declines are extreme (Taylor et al. 2007).

The time series of catch per unit effort data from the Queensland Shark Control Program indicates that the dugong population on the urban coast of Queensland declined steeply between the 1960s and early 1980s (Marsh 2000).

(iv) Major threats, and relative impacts where available or estimated:

The major threats to dugongs, in no order of significance, include: boat strike, accidental entrapment in fishing nets, poaching and illegal harvest, unsustainable indigenous harvest, habitat loss and degradation (coastal development), and environmental contaminants (Haynes et al. 1999, 2000, 2005, Marsh et al. 1996, 1997, 2004, 2005, 2006, 2007). However, the impacts of these threats, either individually or in combination, are largely unquantified.

(v) Existing legislation (identified by name and year) which governs dugongs (if any):

Jurisdiction	Listing	Legislation
Commonwealth	Migratory Species Listed Marine Species	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Commonwealth	Protected Species	<i>Great Barrier Reef Marine Park Act 1975</i>
Queensland	Vulnerable	<i>Nature Conservation Act 1992</i>
Northern Territory	Protected	<i>Territory Parks and Wildlife Conservation Act 2000</i>
Western Australia	Specially Protected	<i>Wildlife Conservation Act 1950</i>
New South Wales	Protected	<i>National Parks and Wildlife Act: Amendment (Marine Mammals) Regulation 2006</i>

(vi) Existing capacity to conduct rapid interview questionnaire surveys

N/A

(vii) List of past studies on dugongs in the Country

Providing a knowledge base for implementing the National Partnership Approach to marine turtle and dugong management in the Gulf of Carpentaria by integrating Traditional Knowledge and Western Science - 2008

A range of collaborative studies have been undertaken in Australia on Dugong by government agencies, research institutions, indigenous communities, neighboring countries (e.g. Papua New Guinea), and conservation organisations.

The Australian Government supports a number of projects that contribute directly to marine turtle conservation and management. For example, through the Caring for Country and Working on Country programs provide funding to support the development and implementation of community-based management plans, including through supporting indigenous sea ranger programs. There are also key studies funded through the Australian Government Australian Marine Mammal Centre, including aerial surveys to inform conservation planning and management, genetic studies, determining reproductive parameters using hormonal profiles, movement patterns using satellite tracking, investigating dugong diving behaviour, and developing decision processes based on expert knowledge from indigenous people (see <http://www.marinemammals.gov.au/ammc-grants-scheme/previous-grant-rounds>).

(viii) Recent/current and planned national conservation dugong work including in relation to implementation of the regional Dugong Action Plan 2008-2012.

Development of a National Dugong Wildlife Conservation Plan under the Environment Protection and Biodiversity Conservation Act 1999. Wildlife Conservation Plans aim to provide a national strategic approach to deliver research and management actions necessary to support the survival of listed migratory species.

Development of community-based management plans to manage the take of turtles and dugongs for Torres Strait Island communities, led by the Torres Strait Regional Authority.

Development of Traditional Use of Marine Resource Agreements between the Great Barrier Reef Marine Park Authority and Traditional Owners, supported by the Reef Rescue Land and Sea Country Indigenous Partnership Program.

Implementation of the Saltwater People Network project, incorporating marine turtle and dugong management across northern Australia, administered by the North Australian Indigenous Land and Sea Management Alliance.

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2.3.2. New Caledonia

Ms Laurence Bachet and Ms Thea Jacob provided a presentation on status of dugongs in New Caledonia as follows:

(i) Dugongs status

New Caledonia and Vanuatu are the eastern limits of dugong distribution in the southwest Pacific and New Caledonia dugong stock might represent the third largest population worldwide, and the most important of Melanesia. Dugongs are culturally significant to Melanesians and traditional hunting is legal under special permit for customary feasts in the Northern Province although this practice is now rare. The taking of dugongs is totally prohibited in the Southern Province. Dugongs are also consumed by other ethnic groups.

(ii) Dugong distribution

Two aerial surveys conducted under ZoNeCo program in 2003 (during fresh season) and 2008 (during warm season) indicated that dugongs are mainly distributed along the western coast, and in both seasons, in New Caledonia. Three dugong hot spots were identified, in the southwest, central-west and north-west of New Caledonia. From the 2003 aerial survey, it was estimated that 84% of the dugong population was located on the west coast and 16% on the northeast coast. An important dugong population inhabits the Noumea coastal area, the busiest zone of New Caledonia with important boat traffic and human activities.

(iii) Abundance of dugongs

Dugong population estimates from the 2003 and 2008 aerial surveys were 1814 (SD= 332) in 2003 during the fresh season and 964 (SD= 241) in 2008 during the warm season. Juveniles were estimated to be 7.2% of the total estimated population in 2003, and 14.3% in 2008.

(iv) Population trend

It has not been possible to use the results of the aerial surveys to estimate dugong population trend for the last few years. It is however presumed that dugong population could be decreasing. Special permits to hunt dugong for customary feasts have been in operation since 1962 and such special permits were issued 20 years ago in the southern part of the east coast suggesting the presence of dugong in this area. During the aerial surveys in 2003 and 2008, no dugong was observed in this area.

(v) Major threats

Even though no specific studies have been conducted on threats to dugongs in New Caledonia, the following have been identified:

- Fishing and poaching
- Boat collision
- Pollution (organic, mineral and acoustic)
- Degradation and loss of habitats

The most important threats are likely to be poaching and boat collision. Half of the stranding reports between 2004 and 2008 occurred in Nouméa, the busiest boat traffic area of the territory. While a third of the strandings could be positively identified as due to boat collision, it is estimated that it was the case for most.

Hunting dugong has been prohibited since 1962, with exceptions for Melanesian customary feasts. However unregistered hunting and poaching occurs. A dugong consumption study conducted in the North Province in 2005 estimated an annual consumption rate of 15t/year, corresponding to 115 dugongs hunted/year. This is estimated to be beyond sustainable level. Dugong was sold cheaply in markets, risks for poachers are not high and fines low. However, dugong meat is now expensive. A study conducted in 1993 among fisherman demonstrated that 21% of people questioned did not know that fishing dugong was prohibited. A similar study conducted in 2006 in the Southern Province showed that 20% of the population had already consumed dugong in this Province, mostly during family dinners and customary feasts. Sixteen per cent of these consumers indicated they had eaten dugong more than a year before the study was conducted.

Between 1962 and 1989, a total of 190 applications for special permits to take a minimum of 210 dugongs for customary feasts were received. In total, 165 authorizations were granted and 24 refused. Most hunts were on the northeast region of the island (46%) and along the west coast (39%).

(vi) Legislation

Resolution 68 dated 25th June 1962 prohibits fishing dugong over all Caledonian territories, except for Melanesian customary feasts through special permits.

In 1989, New Caledonia was divided into 3 provinces, each one becoming independent regarding environmental codes. Provincial deliberations on dugongs occurred for the Northern Province in 2001 (deliberation 23-2001/APN and 85-2001/BPN) and 2006 (deliberation 243-2006/APN), in 2004 for the Southern Province (deliberation 03-2004/APS). These deliberations ensured the fact that each province was fully competent and independent regarding dugong protection, relaying the resolution 68 that was no longer applicable. Deliberation 03-2004/APS fully prohibits fishing dugong all over the Southern Province where special permits can be no longer granted, while the Northern Province still allows them. However, the number of special permits granted has remained low (15 between 1995 and 2004).

Latest provincial deliberations were further notified in each province environmental code, in 2008 for Northern Province and 2009 for the Southern Province. The third province, Province Iles Loyauté, does not yet have any deliberation or environmental code of its own and it still operates under the resolution 68. However, no dugong population has been identified in this area.

(vii) Past, current and future actions

Scientific, awareness and communication work regarding dugong protection has already been initiated in New Caledonia. ZoNeCo programs provided funding for the two dugong aerial surveys. Dugong consumption surveys have also been conducted. Opération Cétacés has produced material on communication and awareness, including puzzles, stickers and a book. The Southern Province is also engaging in 2010 as the “Dugong year” as recommended in the SPREP regional Dugong Action Plan 2008-2012, with activities including broadcast television advertisements on dugong protection, print books and organize drawings school contest. A study to compare the genetics of dugongs in New Caledonia and Australia has also been recommended.

In New Caledonia a national dugong action plan will be in place in 2010 that will involve various partners including the North Province, the South Province, the New Caledonia government, the Marine Protected Area Agency, WWF and Operation Cétacés. The project will be coordinated by the Marine Protected Areas Agency of New Caledonia with four major components:

- *Governance of the national action plan:* the plan to be managed by all the partners and lagoon users. All users will be informed and contribute to the process of improving knowledge regarding dugongs. The aim of the governance is also to build shared knowledge of conservation challenges and to follow the SPREP regional dugong action plan and UNEP/CMS Dugong MoU recommendations, thus inscribing the national action plan on a regional and international level.
- *Knowledge:* This component aims to address the limited knowledge regarding dugong biology and ecology through the conduct of scientific works in order to better assess the abundance and distribution of the species. This includes genetics, sea grass mapping and socio-economic aspects including the importance of dugongs to Caledonian culture.
- *Education and awareness:* Work already initiated in this area will be supported and expanded. Target audiences include schools, sea professionals, public at large and lagoon users.
- *Conservation plan 2014-2020:* Actions undertaken and results obtained within the framework of the national action plan would contribute to the formulation of the structure of a dugong conservation plan for 2014 and beyond.

(viii) List of past studies on dugong in New Caledonia/ Bibliography

The list of past studies on dugong in New Caledonia is included as Annex 4.

2.3.3. Palau

Mr Joshua Eberdong of the Palau Bureau of Marine Resources (Office of Marine Endangered Species) presented on the status of dugong and dugong conservation in Palau as summarized below.

(i) Background information

Palau monitoring and surveying has been conducted on three valuable marine species; dugongs, sea turtles and saltwater crocodile. In addition Palau has been involved in dugong

conservation for many years and it is believed that comprehensive dugong conservation behavior was practiced in the past. Dugongs continue to have cultural and of historical value in Palau.

Today there is a strong dugong protection law in place and the Palau National Government supported Dugong monitoring and surveying in 2005. The Bureau of Marine Resources started a baseline study of dugong population, distribution, breeding and foraging. The Office of Vulnerable species in BMR conducted aerial surveys, interview surveys as well as incidental surveys.

(ii) Surveys and results

Three dugong aerial surveys were conducted in Palau in September and November 2007. Twenty adults and 10 calves of *Dugong dugon* were counted during these surveys, representing a density of 1.0 dugongs/20km². Compared to an earlier survey in 1991, the 2007 results seem to indicate a trend towards increased numbers of calves and densities within Malakal, Koror. (It was noted though that there were differences in the type of aircraft used, level of observer expertise, number of observers, weather conditions, track paths, and temporal variations). The distribution patterns showed a tendency towards a shift in abundance from the west coast of Babeldaob to the Malakal area over the past 15 years. The helicopter pilot sighted 12 dugongs in Malakal Area on two occasions during 2007; this was the largest herd reported in Palau in two decades.

In addition to aerial surveys, three boat surveys were conducted during 2007 in Malakal, Koror, and the West Coast of Babeldaob. One dugong was sighted in the Malakal area and no dugongs were observed in Babeldaob. On-site interviews with several fishermen in Babeldaob indicated that dugongs were present in the early morning hours.

An Incidental Sightings Program was also initiated in 2007 and forms and two brochures were developed and disseminated to over 30 businesses, government agencies and nongovernment groups.

(iii) Issues and threats

Major issues on dugong population in Palau as raised by stakeholders, NGO's, nationals as well as International are.

- The continuing growth of the tourism industry on the islands;
- Increasing international development and destruction of dugong habitat;
- Sediment draining to the ocean;
- Oil spills from growing fishing industry;
- Illegal poaching activity.

(iv) Outcomes of Initiatives in Palau

The efforts on dugong conservation work in Palau have resulted in the improvement of national capacity including the following:

- Formation of a dugong monitoring team;
- Establishment of on-going dugong monitoring program;
- Establishment of ongoing field survey within National and State Government;

- Identification of important areas where dugongs aggregate;
- Identification of dugong distribution and range within the country;
- Drafting of national dugong management plan;
- Creation of strong dugong laws.

(v) Needs

The main needs for effective delivery and implementation of the Palau national dugong programme includes financial support for on-going surveys, capacity building in specific areas, improving education and public awareness as well as effective management through collaboration and wider involvement of communities and stakeholders.

2.3.4. Papua New Guinea

Mr. Vagi Rei, Marine Ecosystem Management Branch of the Papua New Guinea Department of Environment and Conservation presented on the status of dugong conservation in Papua New Guinea.

(i) Background

Dugong research started in PNG in 1976 through a GEF/Small Grants Facility program coordinated by Ms Bridget Hudson and Dr Helene Marsh. This work focused on population density, distribution, forage and breeding grounds and centered in the Western Province, West New Britain, Central and Milne Bay Province.

(ii) Current Status

PNG worked with the US-National Marine Fisheries Service for 4 years with the leatherback turtle monitoring programme and conducted an aerial survey for the northern coastline of PNG, New Guinea Islands. Observations were made and GPS location collected.

PNG has been discussing the issues of the dugong on the bilateral arrangement with Australia. It appears this will not to be an avenue to further collaboration on conservation, especially the PNG component. A DEWHA dugong survey was also conducted.

In terms of training, PNG participated in a joint training programme with Dr Colin Limpus coordinated through SPREP on conducting dugong survey.

PNG has recently entered into a new multilateral arrangement call the Coral Triangle Initiative through which dugongs are categorized under the Threatened Species (G5). This is also reflected in PNG's NPoA.

(iii) Dugong population and distribution

The Dugong population for the whole of the country is unknown. Monitoring has been done in Alotau by Conservation International. Aerial surveys for the last four years have been focused on flying over the same areas and results indicate a decreasing trend. The use of dugong meat is reported to be more prevalent in the Western province.

(iv) Major threats

Major threats on dugongs in PNG include: loss of habitat, coastal development, logging operations in very remote areas, ship wreckages by log ships, sedimentation from heavy rain fall, pollution from mining (land and sea), direct take by humans from certain provinces, the legal mandate to protect national animals, and human population increases.

(v) Gaps

The main gaps include:

- Limited capacity, which has been an on-going battle for the country;
- Very little emphasis placed on the importance of capacity building;
- Limited sustainable funding to implement national programmes;
- Lack of proper legislation to protect national animals;
- Lack of collaboration with NGO partners and stakeholders on research and monitoring. Currently seems to be limited only when submitting a proposal;
- Lack of regional support to facilitate for external funding opportunities, training, meeting, workshop etc.
- Lack of educational and awareness programs.

(vi) Road Ahead

The Marine Division within the Department of Environment and Conservation has been for the first time given recognition and funding in 2010 for the next 3 years. The Division targets at prioritizing 2 or 3 major activities to be implemented in the next 3 years and dugong conservation is included in the MNAP as a priority for implementation, aligned with the 2008 – 2012 RDAP.

Other important tasks include working in close collaboration with NGO partners to promote priorities only, working closely with the CLMMA / LMMA network partners through the CTI NAP and the conduct of a legislation review of the Fauna (Protection & Control) Act.

2.3.5. Solomon Islands

Mr Tia Masolo, Environment and Conservation Division of the Ministry of Environment, Conservation and Meteorological Service (MECM) presented on Dugong Research and Conservation in Solomon Islands, as summarized below.

(i) Status of Dugong in Solomon Islands

There is very little information on the distribution and abundance of dugongs in the Solomon Islands and no specific/detailed surveys have been conducted in the past years. Rapid Assessments have been conducted and the most recent one is the dugong survey conducted by Conservation International in February 2009. Other surveys includes the 2003 – Isabel and Choiseul (Interview/Questionnaire) conducted by ECD and TNC (not completed) and the TNC Rapid Assessment in 2004 which was mainly for corals and sea-grasses but also included dugongs on a very low scale.

The 2009 rapid assessment used a series of questions with interviews with fishermen and key people from villages in areas where the presence of dugongs was indicated and where suitable habitats for dugong were present. A total of 98 interview surveys were conducted at 24 locations (Malaita, Central, Isabel and Western Provinces). The results of the survey were as follow:

- 300 dugongs were reported been sighted, comprising of 248 adults and 52 calves;
- 742 dugongs where recorded sighted in the past 10 years. There is no record trend;
- A total of 56 dugongs were reported stranded from nets but this was reported as both accidental and intentional netting;
- Dugongs were reported hunted in 47% of the areas surveyed, only 36% of people reportedly eat dugong, and generally only once or twice a year;
- Dugongs do not generally form part of the main diet for Solomon Islanders;
- The Kiribati communities in the Western Province were reportedly actively involved in the hunt for dugongs, more so than the locals;
- Dugongs were reported to have been hunted in the past, even in *tabu* areas, however, never large scale and not common today.

(ii) Major Threats

Major threats and issues concerning dugongs in Solomon Islands include the following:

- Lack of specific legislation on Dugongs, Monitoring & Enforcement;
- Lack of respect to customary rights/ownership by certain individuals or groups;
- Overhunting, as was reported between 1970- 1980;
- Habitat destruction – logging, pollution, sedimentation, coral / coastal area dredging etc.;
- Population pressure – fishing pressure, coastal developments;
- Lack of alternative income generating activities for coastal fishers and communities;
- Lack of extension/ dissemination of information, awareness of cultural sensitivities etc.;
- Long-term sustainable financing for dugong work in country.

(iii) Existing Legislations

The paramount law in Solomon Islands is the National Constitution which states that “*the natural resources of our country are vested in the people and government of Solomon Islands*”. The Constitution recognizes *traditional systems of governance*, providing that *customary practices are part of the law of Solomon Islands*.

There is no specific/ separate dugong legislation, but it is captured in the following pieces of legislation: (*i.e. Threaten species*)

- *Environment Act (No. 8 of 1998)*;
- *Wildlife Management and Protection Act (No. 10 of 1998)*;
- *Fisheries Act (No. 6 of 1998) (currently under review)*;
- *Environment Regulation 2008*;
- *Protected Areas Bill 2010 (to be Gazetted by end of April 2010 with regulations to be drafted before the end of 2010)*.

In terms of national policies, strategies and plans, the current Policy Statement on Environment is to “*Ensure sustainable utilization and conservation of natural resources, protection of the environment and successful adaptation to climate change*”. The MECM is mandated to coordinate and guide sustainable use and conservation of Solomon Islands natural resources. Dugongs are captured under the National Environment Management Strategy 1993 (outdated and not fully implemented), National Environmental Capacity Development Action Plan (funded by: CBD, UNFCCC & UNDP), National Biodiversity Strategy Action Plan (NBSAP), Coral Triangle Initiative National Action Plan (CTI), Marine Turtle Action Plan and the Project, Strengthening Environment Management and Reducing the Impact of Climate Change in Solomon Islands (GEF/UNDP).

(iv) National Capacity

Key Agencies involved in dugong work include Ministry Environment and Conservation (leading agency) and the Ministry of Fisheries and Marine Resources. The participatory approach and collaborative efforts by government agencies, NGO's, Communities and donor partners have become very effective in carrying out conservation work for Solomon Islands. Key International and National NGO's, Inter-governmental/Regional and International organizations include, WWF, TNC, World Fish, CI, Live and Learn, SIDT, FSPI, SPREP, USP, UNEP, UNDP etc.

(v) Implementation of Regional Dugong Action Plan 2008-2012 into National Dugong Action Plan

There is currently no dugong work in Solomon Islands but the dugong survey can be captured (because it's a Threatened Species) in the Ministry Corporate Plan 2010-2012, NBSAP and CTI priority activities / Action Plans, although dugong is not specifically mentioned.

The ministry is willing to support the initiative on dugong and is willing and prepared to work along its partners, especially the NGOs, Regional and International organisations (SPREP and CMS). Dugong work is one of the high priority threatened species conservation and management planned activity for Solomon Islands. Solomon Islands is yet to have a national dugong action plan which is now a priority for the next two years, to adapt the regional plan into national priority actions and implement it in country.

Solomon Islands is making preparations for signing the MoU for Dugong Conservation and Management later this year and is willing to work closely and share information and experiences with other dugong signatory and range states.

2.3.6. Vanuatu

Mr Vatu Molisa, Vanuatu Department of Environment & Conservation, presented on the status of dugongs in Vanuatu as recorded below.

(i) Known/presumed distribution of dugongs in Vanuatu

No proper study has been undertaken in Vanuatu to document dugong population numbers as well as their distribution. Thus data for population trends does not exist other than the observations of the local people and their own existing traditional knowledge.

Anecdotal information seems to indicate that a lot of dugongs are found especially around Malekula (the second largest Island in Vanuatu) and Epi islands. Both islands are located in the central part of the country. This is very likely to be linked with the fact that both islands have a relatively high degree of mangrove and sea-grass areas, which are good dugong habitat.

(ii) Threats and relative impacts

The absence of data makes it difficult to identify/quantify threats or impacts that affect the dugong populations in Vanuatu. However, information collected from numerous accounts from fishermen and local people indicate that a large number of dugongs get entangled in gill nets.

(iii) Existing Legislation

Dugongs, as marine mammals, are protected under the Vanuatu Whale Sanctuary established under the Fisheries Act No. 55 of 2005:

- It is prohibited to kill, harm, harass, take or move any marine mammal in the Vanuatu Whale Sanctuary;
- It is also prohibited to (a) possess, hold in captivity or restrict the movement of any marine mammal in the Vanuatu Whale Sanctuary; or (b) possess a part of a marine mammal, or a product produced from a marine mammal, taken in the Vanuatu Whale Sanctuary;
- It is also prohibited to export from Vanuatu or facilitate the export from Vanuatu of any marine mammal, marine mammal part or marine mammal product. It is also prohibited to import into Vanuatu or facilitate the importation into Vanuatu of any marine mammal, marine mammal part, or marine mammal product.
- Only non-lethal research is allowed but which requires a permit from the Director.
- Exemptions for the taking of dugongs and import of marine mammal teeth are made for traditional ceremonial purposes.
- The Director may issue a permit to allow a person to import a marine mammal into, or export a marine mammal from, Vanuatu if the Director is satisfied that the destination of the marine mammal is a public aquarium, public exhibition or a swim-with-marine mammals program for members of the public.

(iv) Existing capacity to conduct rapid interview questionnaire surveys

A dugong project is currently underway by the Vanuatu Cultural Center. It deals with surveying dugongs and dugong habitats, and documenting the local knowledge concerning dugongs. It works with communities targeting two sites, around Efate (where the capital is situated) and Vanua Lava and Ureparapara in the Banks group, which is in the northern part of the country.

While the project mainly attempts to map mangrove and sea-grass bed areas suitable for dugongs, it also attempts to identify causes of dugong habitat destruction. One of the end results of the project is to update existing maps by 2011.

Several community workshops have been carried out on dugongs and whales and a dugong poster explaining the distribution of dugong, the threats that are affecting them, and why they are endangered, has been produced.

This project has created a lot of community awareness and using about 80 field workers who have been given educational material and involved in workshops.

(v) Dugong Action Plan

Vanuatu has a national Dugong Action Plan, which is derived from the regional Dugong Action plan. However there has not been any work done to implement it. Thus this project will be taken as implementing the action plan.

2.4. GIS (mapping)

Dr Alana Grech, School of Earth and Environmental Sciences (James Cook University), did a short presentation on geographic information system (GIS) using ARC map software. This is a very useful tool in mapping distribution etc of animals. "It allows for viewing, understanding, interpreting and visualizing data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts."

2.5. Dugong MoU National Reporting Template

Range State representatives were asked to fill the template for the submission of national reports for the UNEP/CMS Dugong MoU. The template is attached as Annex 5. The headings in the template follow the objectives of the dugong MoU management plan and listed below:

- Reduce direct and indirect causes of dugong mortality;
- Improve understanding through research and monitoring;
- Protect, conserve and manage habitats for dugong;
- Improve understanding of dugong habitats through research and monitoring;
- Raise awareness of dugongs conservation;
- Enhance national, regional and international cooperation;
- Promote implementation of the MoU;
- Improve legal protection of dugongs and their habitats;
- Enhance national, regional and international cooperation on capacity building.

Under each of these main objectives are "sub-objectives" which can be categorized for national and regional priorities. Representatives were given the task to assign regional priorities and the results are reported under section 2.6 below.

2.6. Dugong Questionnaire-based Survey

2.6.1. Introduction to Standard Dugong Survey methodology

Dr Nicolas Pilcher presented on Dugong Interview Survey Design as developed and focused on three headings, stratified sampling, effort and efficiency and random sampling as summarized below. Further details on these topics are covered under the document, *Project Manual Dugong Questionnaire Survey*, attached as Annex 6.

(i) Stratified Sampling

It was explained that Stratified Sampling is a method of sampling from varying segments or categories of a population and several points were stressed:

- *Need to balance survey effort in places where we know and where we don't know:* It is necessary to stratify sampling based on what is known and what is not known. It is possible that some idea of where dugongs are distributed or where they have been distributed in the past is known. There is not much point investing loads of effort in places where it is known to have no dugongs. It is much more useful to invest effort in places where dugongs are known to exist.
- *A zero has an equal value to a one:* Even if the survey results return a 'No Dugong' result, or a 0 for the effort invested, it is still a valuable contribution to the survey. Knowing what is not there is just as important as knowing what is there. In science, a 0 is as valuable as a 1 or any other number. And every now and then one will find something completely unexpected;
- *Need to confirm what we think we know, and find out what we don't know:* While it is important to focus on places known to have dugongs, it is always a good idea to make sure that what we think we know is actually the current situation. Dugong populations can move to different places or a population can be very small and not detected in the past but can rebound and people are seeing them. Thus it is necessary to invest energy in both the places where it is known (or have a reasonable reason to believe) that dugongs are present, and also in areas where it is not expected to find much but hoping for a pleasant surprise. In other words, we need to confirm what we think we know, and find out what we don't know.
- *About 80% in known areas, about 20% in unknowns:* As a general guide, it was suggested to invest roughly 80-90% of effort in surveying known areas and roughly 10-20% in surveying unknown areas which might reveal new information. It was noted that this is just a general guide and not a regulation as such, and that the project management in each location will be in a better position to make a final decision.

(ii) Effort and Efficiency

In terms of effort and efficiency, a 10% coverage overall is a healthy aim. However, while 10% coverage is the optimum overall, this might be unrealistic in certain circumstances, and that there will be a need to balance this with the size of the community in question. Fishing community sizes vary and thus it is important to vary effort with community size. For example, if surveying a fishing community of two thousand fishers, two hundred surveys are likely to exceed that tipping point after which the extra data does not provide substantially new findings. In this case maybe only 5 to 10% coverage would be adequate. Conversely, in a small community of ten fishers, one interview will only tell you what one person knows, and this might not be representative of the overall community knowledge. An absolute minimum of five to ten interviews at any one location are generally required to have a basic understanding of the situation. It is imperative that effort is adjusted by site according to community size. Finally, at the design stage and during field implementation, both program managers and field staff need to use common sense. If the field team arrives at a site and finds that the fishing community has moved, or changed in size, then sampling effort needs to be redistributed. And importantly, any deviations from the original plan need to be carefully documented so that data analysts can interpret the results at a subsequent date.

(iii) Random Selection

Random sampling is not haphazard sampling and the survey design needs a random approach to selecting interviewees, to eliminate bias and to ensure the results are representative of the population being sampled.

Eliminating bias from surveys is crucial so that the information collected is not skewed. It is necessary to collect information across age groups and “types” of fishers etc. Thus it is important to make sure a little bit of everything is covered and a bit more from those who truly count rather over those who may not know as much. That is, random sampling is needed with people who are relevant to the project objectives. It is necessary to concentrate on those people who spend most of their time at sea. We want the interviewer to approach relevant people, but in a random manner.

- *Eliminating bias at the site level:* include avoiding selecting only those sites which have good road access, or only those sites with a hotel for survey staff to spend the night etc. It is important at the design phase to sample a good and representative cross-section of the entire coastal community.
- *Eliminating bias at fisher level:* At the fisher level, bias can be eliminated by careful planning of the time to conduct interviews so that fishers are available. For example, conducting the interviews at a time when a lot of fishers are out fishing will create bias in sampling.
- *Critical need for extrapolating data:* It is a crucial need to be able to extrapolate data across wider geographical ranges at a National level, and incorporation of these into Regional level analyses. Thus it is very important that bias be eliminated from both Site-Level and Fisher-Level surveys so that the results can be extrapolated across much greater geographical areas than the project resources can address. For example, if a coastal area has the 10:30:60 Large:Medium:Small fishing communities and we sampled appropriately both at a stratified scale and in a random manner, we could extrapolate (extend with confidence) the results of our surveys to the wider area and suggest that this might be an overall representation of the current situation at the greater geographical area. But if we had only sampled Medium-sized villages we would never be in a position to say what occurred at Large or Small villages.
- *Need for transparency:* Maintaining records of who the project did and did not interview is important. Similarly is a brief description of each community visited. Recording this information would eliminate introduction of error into the analysis stage.
- *Need for clear explanation of what was and was not surveyed:* It is important to briefly describe each community visited, and list the number of people approached, and the number of people who agreed to participate in the surveys, and where possible the reasons why community members did not participate. The time of day should be recorded, the number of people available to be interviewed, and the range of expertise amongst those present. Records such as these will assist the data analysts at a later date put into context the results of the individual responses.

2.6.2. Standardised Dugong Catch/Bycatch Questionnaire Survey

The UNEP/CMS Office – Abu Dhabi Standardised Dugong Catch/Bycatch Questionnaire form is attached as Annex 8. Dr Pilcher went through the entire questionnaire survey explaining each aspect. This also provided the opportunity for participants to ask questions on any aspects needing clarification. The exercise included discussion on:

- *Serial Numbers on Surveys:* this enables easy tracking of all forms as they come back from the field. Survey form Serial Numbers will also allow tracking of the geographical

and tabular data collected during each interview. It was recommended to use each country's ISO code as prefixes.

- *Entering Data on the Table:* The table that accompanies the survey form allows the interviewer to record individual dugong, turtle, and cetacean sightings and/or stranding events without having to have many spaces in the form to record multiple events.
- *Use of Graphics and Field Guides:* To ensure that the project and data analysts can link the information which is gathered by the Field Staff when filling out the Survey forms and the Table to actual maps, it is absolutely necessary that each sighting / stranding / observation of a dugong or a turtle or a cetacean is marked on appropriate graphics, linked to the numbers in the Sighting Record column in the Table above. These graphics need to be pre-prepared, and context-sensitive.

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2.6.3. Interview Methods and Techniques, Data Integrity

The first presentation on the second and final day of the workshop was by Dr Nicolas Pilcher which was a continuation of the last presentation on the previous day. The presentation was on "Interview Methods and Techniques, and Data Integrity" as summarized below.

(i) Basic Approach

Important aspects in approach when conducting the survey were presented with emphasis placed on the following elements:

- *Respect the interviewee* regardless: It is important that the Interviewee feels that he / she is respected and that their information is valuable. In most instances, with respect comes honesty;
- *Allay any fears:* a person may be intimidated by the process of being interviewed, and fearful of reprisals. Thus it is important to relay the message clearly that the survey results will never be shared with people from outside the survey team, including the authorities, and all information from individuals will be treated with confidentiality;
- *Explain exactly how the interview results will be used,* and what impact they might have on the interviewee;
- *Singular vs. group interviews:* Interviews can be conducted in a group setting or with individual respondents. Sometimes people feel more relaxed and speak more freely when surrounded by their colleagues, but others feel it is easier to be frank when speaking in private;
- *The value of a blank:* When a question is not asked, it is important that this be recorded so that when analyzing the data one can be sure the question was not inadvertently omitted.
- *The value of "I don't know":* The survey form accommodates that when an interviewee may not know something. It is up to the Interviewer to clearly determine that the Interviewee is not aware of something, and check the answer as 'Don't know';
- *Questions to determine reliability:* The Survey form has a number of questions to determine Interviewee response reliability. These are designed to judge respondents' honesty and

accuracy, and thus are an important component of the survey, regardless of how different they may seem;

- *Use the form:* It does not work to attempt to conduct the interview without filling the form at the same time. It is important that the Interviewer hold the Survey form and go through the questions one by one, ticking and answering where appropriate, so that no questions are omitted and all answers are recorded accurately;
- *Record if you wish, but with permission:* Recordings have been found useful in revisiting responses by individuals to make sure the data sheets are correctly completed. However, always ask for permission as some could be disturbed, shy etc by use of such devices;
- *No leading questions:* A leading question is one which subtly prompts the respondent to answer in a particular way. Leading questions are generally undesirable as they result in false or slanted information;
- *Be prepared with right graphics / charts / maps* (e.g. species id cards, right size maps, right detailed maps etc-indicators).

(ii) Data Integrity

This aspect relates to how robust and accurate the data collected by the project staff are, and how they need to be handled to ensure that the most reliable indication of current population status, trends, distribution and impacts are obtained. The following were emphasized:

- *Reliability of interviewer:* In an effort to avoid “made-up”, Interviewers should be given an understanding of how the Survey will assist with the conservation of marine fauna, and made to understand just what a valuable role they play in the process. The more the project staff feel they are involved and valued, the more likely it is that they will collect data in a reliable and professional manner.
- *Representative value of interview:* One interview will not tell much, but a number of interviews in one location will provide a glimpse of the actual situation. Interviewers (project staff) will have to make on-the-spot decisions as to the requisite number of interviews if conditions change from what is expected
- *Thoroughness:* It is the responsibility of the Interviewer to ask all questions on the Survey and indicate where questions have not been asked and provide suitable explanations. It is also the responsibility of the Interviewer to ensure that a thorough and representative sample of fishers from each location is approached. Project management can provide initial guidance, but in the field the Interviewer has to assume a degree of responsibility towards project outcomes.
- *Independence in the field vs. supervision:* It is critical that project staff have the integrity to collect data in a professional manner without the need for supervision, as often the supervisors can impact the response rate and behaviour of the Interviewee. It is important that project managers convey a degree of trust in the field staff and empower them to act without supervision, and impress upon them the need for reliable data sets upon which to base conservation action.
- *Transfer to electronic format:* it is important to ensure the data which is transferred to electronic format is the same as that on the data sheets. This can be checked by random sampling the data sheets against the actual data sheets by an independent person. If errors were detected, several additional sheets would need to be checked to find out if the errors were frequent. This process will ensure that what is collected in the field is what is analysed further down the road.

2.6.4. Available funds, timelines, results analysis and report write-up

It was explained that the project has a maximum of US\$4,000 per range state from the UNEP/CMS Office – Abu Dhabi funding for the conduct of national dugong surveys using the Standardised Dugong Catch/Bycatch Questionnaire form.

In addition to the conduct of the survey nationally, it was also agreed that:

- Range States will conduct data analysis on the results of the surveys and produce an interim report by 30 June 2010 and Final Report by 15 September, 2010;
- Range States will submit to SPREP and the Marine Research Foundation raw data from the surveys by 1 September 2010;
- SPREP and Marine Research Foundation will produce maps showing dugong occurrence resulting from surveys to be incorporated in national reports as well as the final report to CMS;
- SPREP and Marine Research Foundation will provide assistance to Range States in the production of the Final Report.

2.7. Range States Regional Priorities (Dugong MoU National Report)

The summary of results of the exercise conducted under section 2.5 above is recorded in Table 1 below. The responses from each of the five dugong range states were combined to provide the combined averages shown. The participants were asked to prioritize actions under each Objective of the UNEP/CMS Dugong MoU Conservation and Management Plan. High, medium and low priorities were scored and quantified for comparison. The full results are documented on Annex 7. The results indicated the following as high priorities:

- Reducing dugong mortality due to human activities;
- Improve understanding on dugong population and habitats, dugong research, data collection and analysis through research and monitoring;
- Dugong habitat mapping to protect, conserve and manage habitats for dugong, and
- Promote capacity building under the objective to enhance national, regional and international cooperation on capacity building.

Table 1: Results of prioritizing actions for dugong work in the Pacific Islands.

OBJECTIVE 1: REDUCE DIRECT AND INDIRECT CAUSES OF DUGONG MORTALITY	
Dugong mortality due to human activities	2.50
OBJECTIVE 2: IMPROVE UNDERSTANDING THROUGH RESEARCH AND MONITORING	
Dugong populations and habitats	2.50
Dugong research	2.50
Data collection and analysing	2.50
OBJECTIVE 3: PROTECT, CONSERVE AND MANAGE HABITATS FOR DUGONG	
Dugong habitat mapping	2.50
OBJECTIVE 4: IMPROVE UNDERSTANDING OF DUGONG HABITATS THROUGH RESEARCH AND MONITORING	
OBJECTIVE 5: RAISE AWARENESS OF DUGONG CONSERVATION	
Information programmes	2.33
Encourage local community participation	2.33
OBJECTIVE 6: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION	
OBJECTIVE 7: PROMOTE IMPLEMENTATION OF THE MOU	
Encourage participation in the MoU	2.33
Support the Secretariat	2.33
OBJECTIVE 8: IMPROVE LEGAL PROTECTION OF DUGONGS AND THEIR HABITATS	
Incorporation into national legislation	2.33
OBJECTIVE 9: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION ON CAPACITY BUILDING	
Promote capacity building	2.50

2.8. Special Activities (Pacific Year of the Dugong-PYoD)

Mr Lui Bell noted that Action 1.6 of the regional Dugong Action Plan 2008-2012 is to “declare 2010 as the Pacific Year of the Dugong and support the planning, development and implementation of in-country and regional range state conservation campaigns”. However, due to certain factors, it was not possible to have a 2010 Pacific Year of the Dugong but recommending 2011. It was also noted that the SPREP Management has approved for 2011 as Pacific Year of Dugong.

The campaign would involve a regional/global campaign that will include development of awareness material and include provision of assistance to range states for the national campaign activities including translation of awareness information into local languages and other relevant work.

The agreement of workshop participants were sought on celebrating 2011 as the Pacific Year of Dugongs. The representative from PNG, Palau, Solomon Islands and Vanuatu were in agreement but other representatives were unable to confirm agreement at the time. The

representatives from New Caledonia explained that NC has already declared 2010 as the year of dugong following the recommendation in the SPREP regional Dugong Action.

SPREP will draft the Campaign Plan, slogan, logo, theme, target audience, objectives etc for consideration by the Pacific dugong range States.

In terms of funding, a proposal will be developed for the implementation of the dugong regional action plan under the current project funded by CMS. A major component of this proposal will be the provision of direct assistance for national campaign activities for the PYoD, e.g. posters, competitions. National funding should be sought to compliment.

In addition to other activities, it was also suggested to commission an organization such as Wan SmolBag in Vanuatu for a dvd/song for the PYoD.

The launch date was suggested to be the end of January 2011.

2.9. Next Steps

The next steps include:

- SPREP to provide national contacts of the SPREP dugong range states with information on the surveys and to obtain confirmation of their participation.
- SPREP to prepare Letter of Agreements for national conduct of the dugong surveys using the CMS questionnaire-based methodology.
- Transfer of funds to assist range states conduct national dugong surveys.
- Prepare Terms of References for the Consultancies to development dugong and marine turtles proposals for the implementation of regional action plans.
- Dr Pilcher to develop a manual for the questionnaire survey, to assist those conducting.
- SPREP to draft Campaign Plan, slogan, logo, theme, target audience, objectives etc for consideration by the Pacific dugong range States.
- Other components of the project including proposal development

List of Annexes

Annex	Title
1	Agenda
2	List of Participants
3	Dugong Range States Report Format
4	The list of past studies on dugong in New Caledonia
5	Dugong MoU Reporting Template: revised version from October 2010, available online http://www.cms.int/species/dugong/dugong_noticeboard.htm > Dugong Workshops for Training in the Use of Survey Methodologies
6	Project Manual Dugong Questionnaire Survey: available online http://www.cms.int/species/dugong/project_manual.pdf
7	Range States priorities
8	CMS Dugong Questionnaire Survey form: available online http://www.cms.int/species/dugong/dugong_noticeboard.htm > Standardised Dugong Catch/By-catch Questionnaire Available Now