# Summary Report

# on

# The 5th INTERNATIONAL TROPICAL MARINE ECOSYSTEM MANAGEMENT SYMPOSIUM (ITMEMS 5)

Bohol, Philippines

February 25-28, 2016

International Coral Reef Initiative (ICRI)

Ministry of the Environment, Japan

United Nations Environment Programme (UNEP)

Department of Environment and Natural Resources (DENR), Philippines

This report has been produced for the record of the summary of the 5th International Tropical Marine Ecosystem Symposium that was organized in Bohol, the Philippines from February 25 to 28, 2016 by the Ministry of the Environment, Japan as a part of ICRI Activities under the 2014-2016 ICRI joint Secretariat of Japan and Thailand.



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## INTRODUCTION

On behalf of the ICRI Secretariat, the Governments of Japan and the Philippines co-hosted the 5th International Tropical Marine Ecosystem Management Symposium (ITMEMS) in Bohol, Philippines from 25-28 February 2016. ITMEMS 5 was organized in partnership with the United Nations Environment Programme (UNEP).

Following ITMEMS 4's example, ITMEMS 5 was designed to achieve focused consideration of tropical marine ecosystem management issues in the local context, and provide a forum for experiential learning, peer group interaction, mentoring and professional development among coastal and marine managers and their partners. The sessions and topics to be addressed include:

- Resilience-based management
- Marine Spatial Planning in Practice - Learning from common challenges and enabling conditions
- Fisheries management
- Sustainable reef tourism (Green Fins)
- Ecological valuation
- Marine conservation finance

### Partners and Sponsors

The following organizations generously supported the event preparation to enable the participation of managers and stakeholders from around the world:

- Ministry of the Environment, Government of Japan
- The Philippines Government
- United Nations Environment Programme (UNEP), through the Blue Solutions project and the UNEP-Regional Seas Global Coral Reef Partnership
- National Oceanic and Atmospheric Administration (NOAA)
- Blue Ventures
- The Reef-World Foundation

**CONTENTS**

## 1. OUTLINE

Duration: 25th -28th February, 2016

Venue: Henann Resort, Bohol, Philippines

Participants: 53 participants from 19 countries (See APPENDIX)

Facilitators: 19 facilitators

| Session1. Resilience-based Management |
|---|
| Jerker Tamelander (UNEP)<br>Britt Parker (NOAA)<br>Jeff Maynard (SymbioSeas)<br>Elizabeth McLeod (The Nature Conservancy)<br>Scott Heron (NOAA Coral Reef Watch) |
| Session2. Marine Spatial Planning in Practice |
| Ole Vestergaard (UNEP)<br>Richard Kenchington (University of Wollongong)<br>Steve Fletcher (UNEP-WCMC)<br>Meena Arivanathan (Panache Facilitation) |
| Session3. Reducing impacts of reef tourism through Green Fins Approach |
| Chloe Harvey (The Reef-World Foundation)<br>James Harvey (The Reef-World Foundation)<br>Alan Kavanagh (The Reef-World Foundation)<br>Charlotte Wiseman (The Reef-World Foundation)<br>Juliana Corrales (The Reef-World Foundation)<br>Samantha Craven (The Reef-World Foundation) |
| Session 4. Incorporating Coral Ecological Services and Functions Valuation into Compensatory Mitigation for Reef Damage |
| David Gulko (ICRI Ad Hoc Committee on Enforcement and Investigation) |
| Session 5. Ecosystem services and sustainable financing of MPAs |
| Nicolas Pascal (Blue Finance)<br>Angelique Brathwaite (Blue Finance) * |
| Session 6. Use of periodic coral reef fisheries closures as management catalysts to build local level engagement in conservation |
| Steve Rocliffe (Blue Ventures) |

*also participant for other sessions

Organizers:

| Overall in-charge |
| --- |
| Makiko YANAGIYA (Ministry of the Environment, Japan)<br>Jerker Tamelander (Coral Reef Unit, UNEP) ** |
| Logistics in-charge |
| Katrina Apaya (DENR, Philippines)<br>James Santiago (DENR, Philippines)<br>Tadashi Kimura (Japan Wildlife Research Center (JWRC))<br>Kumiko Suzuki (Japan Wildlife Research Center (JWRC))<br>Noriko Kamada (Japan Wildlife Research Center (JWRC)) |
| Documentation of ITMEMS 5 |
| Meena Arivananthan (Panache Facilitation) *** |

** also facilitator of Session 1

*** also facilitator of Session 2

## 2. PROGRAMME

| | Day 1: 25 Feb. | Day 2: 26 Feb. | Day 3: 27 Feb. | Day 4: 28 Feb. |
|---|---|---|---|---|
| 9:00 | **Opening Ceremony**<br>MC: Katrina Apaya (DENR, Philippines) | **Marine Spatial Planning in Practice (Part I)**<br><br>By Ole Vestergaard, Richard Kenchington, Steve Fletcher | **Reducing impacts of reef tourism through public-private partnerships using the Green Fins approach (theory session)**<br><br>By Chloe Harvey and JJ Harvey | **Ecosystem services and sustainable financing of MPAs**<br><br>By Nicolas Pascal and Angelique Brathwaite<br>OR<br><br>**Incorporating Coral Ecological Services and Functions Valuation into Compensatory Mitigation for Reef Damage**<br><br>By David Gulko |
| 10:00 | 10:05 coffee break | | | |
| | 10:15 **Resilience-based Management (Part I)**<br><br>By Elizabeth McLeod, Scott Heron, Britt Parker, Jeff Maynard, Jerker Tamelander | | | |
| 11:00 | | | | |
| 12:00 | | | | |
| 13:00 | Lunch | Lunch | Lunch | Lunch |
| 14:00 | **Resilience-based Management (Part II)**<br><br>By Elizabeth McLeod, Scott Heron, Britt Parker, Jeff Maynard, Jerker Tamelander | **Marine Spatial Planning in Practice (Part II)**<br><br>By Ole Vestergaard, Richard Kenchington, Steve Fletcher | **Reducing impacts of reef tourism through public-private partnerships using the Green Fins approach (practical session)**<br><br>By Chloe Harvey, JJ Harvey, Alan Kavanagh, Charlotte Wiseman, Juliana Corrales, Samantha Craven<br><br>1. dive center-->snorkelling<br>2. dive center--> scuba diving<br>3. selection of dive centers | **Use of periodic coral reef fisheries closures as management catalysts to build local level engagement in conservation**<br><br>By Steve Rocliffe |
| 15:00 | | | | |
| 16:00 | | | | coffee break |
| | | | | 16:30 Summary Session |
| 17:00 | | | | |
| 18:00 | Reflection of the Day | Reflection of the Day | Reflection of the Day | **18:30 Closing Ceremony** |
| 19:00 | welcome dinner | dinner | Dinner | dinner |

## 3. SESSION DESCRIPTION

| Session 1 | Resilience-based Management: Application of coral reef resilience assessments to support policy and management |
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Facilitators: Jerker Tamelander (UNEP), Britt Parker (NOAA), Jeff Maynard (SymbioSeas), Elizabeth McLeod (The Nature Conservancy), Scott Heron (NOAA Coral Reef Watch)

Duration of session: 7 hours

By the end of the session participants will:

- understand the concept of resilience-based management, and be able to communicate it to different audiences;
- be familiar with the guidance Resilience Assessment of Coral Reefs for Decision-support;
- be able to integrate resilience assessment and climate change exposure data (projections and downscaled climate models) to support prioritization in reef management;
- be able to integrate resilience assessment findings into management and policy decisions.

Human activities have led to widespread reef degradation around the world, but dependence on the ecosystem services provided by coral reefs remains high. Managing coral reefs at a time when changing sea temperatures, levels and chemistry are already negatively affecting the capacity of corals to settle, grow, calcify and persist, presents a unique set of challenges. In many reef areas, increasingly frequent environmental disturbances combined with anthropogenic stressors are challenging the natural resilience of reef systems and those that depend on them. Adaptively managing coral reefs to support their resilience requires a dynamic understanding of the processes that influence their condition and the pressures that affect their future health. Resilience-based management builds on current management approaches by helping to optimize established ecosystem-based management practices to strategically address current and future pressures. In this session, we will explore assessment tools and methods to gather information on potential reef resilience, what data are available, how to fill gaps, and how to incorporate climate change exposure data to inform management decisions. The session will share best practices for conducting resilience assessments, identification and prioritization of data, analysis and interpretation. Emphasis will be placed on practical application through a guided exercise using real data. A field exercise will be included if possible. Management and policy implications of the results will be highlighted as we step through the resilience-based management process. Specifically, case studies demonstrating how assessments have been used to inform management and policy decisions will be shared with specific examples to guide future application.

| Session 2 | Marine spatial planning in practice—Practical approaches and experiences on spatial planning and integrated management for sustainable use of tropical marine and coastal ecosystems |
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Facilitators: Ole Vestergaard (UNEP), Richard Kenchington (University of Wollongong), Steve Fletcher (UNEP-WCMC), Meena Arivananthan (Panache Facilitation)

Duration of session: 8 hours

By the end of the session participants will:

- understand how ecosystem-based spatial planning and integrated management can support sustainable and resilient tropical coastal development and resource use;
- be familiar with common challenges or constraints faced by managers that hinder implementation of coastal and marine spatial planning initiatives, including which enabling conditions are considered critical to ensuring implementation;
- have an overview of MSP tools and their application in different situations;
- have a common pool of practical planning and implementation experiences from the field;
- have formed professional relations and initiated a peer-network among tropical coastal spatial planners and managers.

Tropical marine and coastal ecosystems and the services they provide to growing coastal populations are currently declining due to increasing human activities. The trend is amplified by a range of direct and indirect drivers due to uncoordinated, often competing, sector policies and management. Trade-offs exists between the benefits of activities for human well-being and their cumulative impacts on marine and coastal ecosystems, their biodiversity and productivity. Integrated, ecosystem-based approaches to policy and management across sectors is therefore regarded essential for sustainable and resilient coastal development. Yet, effective ecosystem-based planning and management is often limited by lack of practical tools, guidance and lessons from the field. This session will bring together national and local coastal planners and managers to introduce and discuss practical spatial planning approaches; share practical experiences from applying spatial planning tools in different context; and help identify practical solutions and enabling conditions that can facilitate more integrated management planning and plan implementation.

| Session 3 | Reducing impacts of reef tourism through public-private partnerships using the Green Fins approach |
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Facilitators: Chloe Harvey, James Harvey, Alan Kavanagh, Charlotte Wiseman, Juliana Corrales, Samantha Craven (The Reef-World Foundation)

Duration of session: 8 hours

By the end of the session participants will:

- understand the environmental threats associated with the dive and snorkel industry;
- recognize the opportunity of engaging reef tourism stakeholders in local environmental initiatives;
- be familiar with the Green Fins approach to promoting environmental best practice within reef tourism activities;
- be able to provide guidance on industry best practice through local workshops and dissemination of education and outreach materials.

Environmental threats posed by reef tourism activities are well documented and management measures to address these are needed. Green Fins is a public private partnership for environmental stewardship in the reef tourism industry, focusing on diving and snorkeling. The approach encompasses three main elements: certification of dive center operations based on a code of conduct and a robust assessment system; support towards developing or strengthening implementation of relevant regulatory frameworks; and strategic outreach to dive centers and their customers as well as government partners. This session will draw on the decade-long experiences of Green Fins to enable resource managers to conduct strategic outreach activities tailored to local needs, and to promote best environmental practice in line with the Green Fins Code of Conduct. The session will encourage participants to consider threats currently posed by the reef tourism industry in their areas, and propose solutions to those threats using the Green Fins approach. If possible, the session will include a field trip to a snorkel site to apply, on a trial basis, the approaches in working with dive shops and their customers and observe Green Fins trained snorkel guides above and under the water. Each participant will receive a Green Fins outreach toolkit (including educational posters, guidelines to best practice and PowerPoint presentations) and guidance on its use. Participants will also be given an opportunity to consider if the full Green Fins approach, including the assessments and regulatory reform, could strengthen coastal ecosystem management in their areas.

Additional info on session:
Target audience - Anyone who is involved in coastal / marine resource management, from the national to the local levels, and is interested in applying an integrated approach to manage environmental impacts associated with diving / snorkelling tourism activities.
Participants would be expected to dive / snorkel as part of the field session - but we will also prepare land based activities for those who would rather not.

| Session 4 | Incorporating Coral Ecological Services and Functions Valuation into Compensatory Mitigation for Reef Damage |
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Facilitator: David Gulko (ICRI Ad Hoc Committee on Enforcement and Investigation)

Duration of session: 4 hours

By the end of the session participants will:

- understand how lost ecological services and functions for corals can be used to determine specific levels of compensatory mitigation and restoration for both planned (coastal development, dredging, etc.) and unplanned (vessel groundings, oil spills, etc.) human-caused impact events;
- be familiar with, and will have practiced using, the new ICRI Global Coral Ecological Services and Functions Assessment Tool;
- have provided feedback to the organizers about the tool and its applicability;
- have received a copy of the tool to take back and share with their professional colleagues involved in coral reef resource management in their home country;
- have formed professional relations and initiated a peer-network among marine resource professionals regarding ecological valuation for lost services and functions from impact events.

Each participant will receive a working version of the new ICRI Global Coral Ecological Services and Functions Assessment tool (MS-Excel version) and have practiced using it during the workshop. The tool can be used with all coral species within the 15 recognized stony coral families worldwide and is easily adapted for any coral reef jurisdiction. Participants can then take the tool back to their home country and incorporate it into their natural resource trustee activities for evaluating impacts from human activities, and for establishing both restoration and compensatory mitigation targets.

The ICRI Global Coral Ecological Services and Functions Assessment tool itself is very simple and does not require extensive knowledge beyond inputting a few variables:

- The species of coral impacted for each colony along with its dominant form and level of rarity in your area.
- The size of each colony impacted (measured by its longest diameter and within established size categories).
- The type of sub-habitat (substrate) each coral colony occurs on.
- Each of these is selected from pre-provided lists of choices. The tool itself is transparent and provides guidance along each step as to what it is doing.

Additional info on session:

Target audience - any participant interested in evaluating lost ecological services and functions associated with corals damaged through various human activities.

This session is interactive and will require participants to bring their own laptop (or share one with a colleague), with a version of Microsoft Excel already loaded onto it. Laptops should have the capability to use either a flash drive or CD, which will be provided with the ICRI Global Coral Ecological Services and Functions Assessment Tool pre-loaded on it for downloading onto your laptop. Participants will spend a portion of the session running the tool themselves with either their own data or a sample set provided by the organizers.

| Session 5 | Ecosystem services and sustainable financing of MPAs |
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Facilitator: Nicolas Pascal and Angelique Brathwaite (Blue Finance)

Duration of session: 4 hours

By the end of the session participants will:

- understand the role of ecosystem services valuation and how it can be used to gain political support;
- understand why simply using an economic value of reefs is inadequate for compensation, and the importance of habitat compensation schemes
- know the different financing mechanisms currently used for conservation and be able to determine those most suitable for their particular circumstances

The session will be directed to MPA managers and other stakeholders. It will be divided into 4 sessions of conceptual presentations (1.5h) and 1 working group activity (2.5h). The first session (20') will be an introduction to the concepts of ecosystem services (ES) and economic valuation.
The second session (20'+10' Q&A) will present results of economic valuations of ES with a clear identification of the beneficiaries and the spatial distribution of the ES. Case studies of economic valuations of coral reef ecosystem services and MPAs in Fiji, St Martin, Bonaire Honduras and Mayotte will be used for illustration.
The third session (15'+10' Q&A) will present different financing mechanisms, including regional/national solutions (e.g., trust funds, fiscality and tourism fees) as well as more local methods (e.g., user fees, payment for ES and private management of MPAs).
The fourth session (15'+10' Q&A) will be dedicated to loss of ecosystem services, and presenting habitat compensation schemes for reef damage.

Training (2.5 hours)
The fifth session (2.5 hours) will be dedicated to working group sessions. Each group will deal with a real policy question to be addressed in one country (e.g. damage claims, demonstrating the importance of herbivores, analysis of expansion of cruise tourism, sustainable financing of MPAs, etc.). The group will clearly identify the policy question, mind map on ES, actions, key messages, targets and communication supports.

Additional info on session:
Target audience - Coastal Zone Managers, NGOs, anyone who has to communicate the importance of coastal ecosystems, persons involved in compensation for damage to reefs.
What to bring: Laptop, tablet or just paper and pen
Be prepared to: Communicate

| Session 6 | Use of periodic coral reef fisheries closures as management catalysts to build local level engagement in conservation |
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Facilitator: Steve Rocliffe (Blue Ventures)

Duration of session: 2 hours

Through sharing experiences from coral reef management in the western Indian Ocean, by the end of the session the participants will:

- understand the use of short term closures of gleaning fisheries for key species to demonstrate economic returns from fisheries management;
- understand how to build local support for community-based management within locally-managed marine areas (LMMAs).

Periodic fishery closures are designated intervals where fishermen refrain from harvesting in specific areas. This allows for recruitment and growth in a particular area, optimistically leading to increased catch post closure. Successful closures are those that increase economic benefit without losses during the closure period.

The use of periodic, temporary fishery closures targeted at rapidly growing species can have positive economic benefits for low income fishing communities and can be a promising option for the coastal management portfolio in less developed nations. The use of this approach to community based coral reef fisheries management has expanded dramatically in the Indian Ocean over the past decade. Analysis of one regime in Madagascar suggests that the returns from periodic closures of reef octopus fisheries are substantial, rapid, and recurring. The history of management in the region also suggests that short-term interventions that demonstrate tangible management benefits may aid in the development of broader community and co-management efforts. By building better conditions for cooperation, the management of an effective periodic closure regime may help build grassroots support for other, broader marine management and conservation. This session will present the latest science from 10 years of monitoring the impacts of periodic fisheries closures in Madagascar, along with filmed interviews with fishers and community members. The session will focus on sharing experiences from three different tropical coastal states that are in different stages of adopting this approach to community-based fisheries management and conservation: Madagascar, Mauritius, and Mexico.

**4. ACTIVITIES**

| Session 1 | Resilience-based Management: Application of coral reef resilience assessments to support policy and management |
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Introduction

Participants were asked to write two or three words to describe what resilience meant to them. Responses were compiled into a table and a word cloud was generated using wordle (see below). Within our resilience cloud, the words participants most frequently associated with resilience appear the largest. For many participants, adapting to change is central to the concept of resilience.


Word cloud: Words describing resilience

*The letter size shows the frequency of responses by participants. The word participants most frequently wrote was "adaptation".

There are several steps to consider when undertaking a resilience assessment including: 1) deciding whether to undertake an assessment, 2) selecting indicators, 3) collecting data, 4) analyzing data, 5) interpreting the results to inform management. During all of these steps, it is important to maintain communication and consultation with managers and stakeholders. Participants were divided into five groups with delegates from the same country grouped together.

**Overview of resilience-based management**

Participants were introduced to the concept of resilience-based management (RBM) and how it differs from ecosystem-based management. RBM is a management approach that is flexible to allow for adaptive management and can be applied through existing tools and planning frameworks. RBM differs from ecosystem-based management because it is forward-looking and addresses current as well as future climate and non-climate threats. Alvin Chelliah, Reef Check Program Manager from Malaysia who works with coral reef managers in SE Asia to build resilience concepts into management, noted that managers have great interest in resilience once the concepts were made easy to understand.

Activity: Participants completed a worksheet on Step 2 of the resilience assessment process: selecting

indicators. The goal of the activity was to: *Identify indicators to use in undertaking a resilience assessment and identify human-related activities that stress reefs in your area.* Participants started with a list of 7 indicators recommended for use in resilience assessments in McClanahan *et al.* (2012). These included: resistant coral species, temperature variability, coral diversity, herbivore biomass, coral disease, macroalgae cover, coral recruitment. Participants selected up to five other resilience indicators from the list of 31 that they perceived to be important for resilience in their country and feasible to assess. Participants then listed human activities that stress reefs in their area. In both cases – resilience indicators and anthropogenic stressors – participants took notes on whether they have recent data and what data collection methods to use. The key finding from the activity was that almost all countries already have recent data that could be used to undertake a resilience assessment.

**Activity: Develop capacity to undertake ecological resilience assessments**

A brief presentation was shared on the process for undertaking ecological resilience assessments and the tools available (e.g., TNC's Reef Resilience Toolkit: www.reefresilience.org).

Participants reviewed an Excel tutorial that explained the steps required to analyse the data for a resilience assessment and interpret the results to inform management. Each spreadsheet within the tutorial explained the purpose of each step, provided notes, shared data tables, and a list of detailed steps required to replicate the analysis. The data tables were set up in the tutorial with a complete 'answers' table to the left, and another table to the right with blank columns. Participants could learn the math and formulas required for analysis and check their answers. The key finding from the activity was that many participants felt that analyzing the data was easier than they anticipated.

**Plenary session:**

Following group activities, participants filled out a survey containing 6 questions. Survey questions included the challenges in undertaking resilience assessments or in using the results to inform management, barriers that prevented them from completing an assessment, the tools/guidance/support they needed, etc. The results were used to generate some of the key outcomes/recommendations (See page 17).

**Activity: Understand NOAA's Coral Reef Watch tools and value of bleaching monitoring**

Participants were introduced to NOAA's Coral Reef Watch tool suite and given an update on the current global-scale coral bleaching event, as well as the rationale behind contributing data to an ongoing effort to document the current bleaching event. Participants were shown a recent project that produced downscaled (4 km resolution) climate model projections of future coral bleaching conditions and learnt how these projections can inform conservation planning.

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| Session 2 | Marine spatial planning in practice—Practical approaches and experiences on spatial planning and integrated management for sustainable use of tropical marine and coastal ecosystems |

**Introduction:**

Facilitators introduced the concept of Ecosystem-based Management (EBM) and its principles and application. They discussed the rationale and evolution of Marine Spatial Planning (MSP). They also discussed the role of surveys in MSP and briefly shared how the information obtained through these surveys were now being used by decision makers and politicians in the UK.

**Sharing MSP experiences**

Participants from 7 countries (Indonesia; Belize; India; Grenada; Phil; Antigua; Vietnam) shared MSP experiences in their regions.

**Group activity: World Café**

In order to encourage participants to think about MSP in a comprehensive manner, a World Café session was organized in which people were divided into 5 groups and each group asked to discuss the question laid out in front of them (see table below). After 30 minutes, the entire group would move to the next table to discuss the next question. Three rounds later, participants were able to understand the concept of MSP better and also appreciate the value implementing it in their respective regions.

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|---|---|
| Q 1 | From your experience, what are key challenges in establishing and conducting effective processes for marine spatial planning? |
| Q 2 | What practical lessons can be learned about stakeholder engagement in MSP and its implementation? |
| Q 3 | Are there practical lessons that can be learned about key enabling factors to assist effective spatial planning processes? |
| Q 4 | Are there practical lessons that can be learned about key enabling factors to assist effective plan implementation? |
| Q 5 | Other than grant funding -What type of advice or support would be helpful in your future work on marine spatial planning and plan implementation? |

**MSP Study: Presentation of survey**

Prior to attending the symposium, participants were asked to fill out a survey on MSP in countries. The survey results were shared in plenary. Discussions focused on the benefits of MSP in that it goes beyond economics. Management of marine environments if done well, provides institutional governance while ensuring ecological benefits.

The Blue Oceans Programme supports regional seas and countries to develop marine policy framework to support marine development goals. This helps address the need for multi-sectoral marine and coastal policy; deliver / monitor progress of SDGs.

**Summary:**

Richard Kenchington wrapped up the session with a brief summary. He noted the similarities in how marine management was still mired in problems of succession. Projects were all successful. But when looking to follow up, the people involved were no more there. This may be how the project cycle works and it may be dependent on funding. So we may have problems in designing projects on varying scale.

With Blue Oceans as a example of good practice, we could possibly have an active mentoring system.

| Session 3 | Reducing impacts of reef tourism through public-private partnerships using the Green Fins approach |
|---|---|

**Plenary session**

Chloe Harvey gave an overview of issues associated with marine tourism activities, the Green Fins approach as a solution, and shared a case study from Malaysia. Green Fins National representatives shared lessons learned from implementing Green Fins in their home countries to the group.

**Group Activity**

Participants were ushered into 5 groups. For each group a Reef-World representative acted as a facilitator, supported by a Green Fins National representative. The national team representative was encouraged to share their own experiences of Green Fins, and enabled others to bring experiences from their countries into the discussion.

The threats associated with diving and snorkelling activities in the participant's home countries were also discussed.

Tools like the Green Fins Toolkit, Manual for producing member packs and Green Fins Awareness Raising presentation for dive staff was circulated to all participants in softcopy. Facilitators discussed the tools, explaining their uses and application. An example hard copy of a member pack was also presented for discussion.

Groups discussed a list of actions and activities associated with the diving and snorkelling industry, identified associated environmental threats for each, and ranked the threats in order of severity. Each group then discussed solutions to address the top 3 threats depending on what was feasible in their countries. They also discussed the opportunities associated with engaging reef tourism stakeholders in local environmental initiatives. Results were shared in plenary.

Participants were given a summary of the Green Fins Tools that were available for immediate action and those that required further investment / capacity development.

**Practical Session**

Participants were given a choice of one of 3 practical activities depending on interest and availability of spaces.

Group 1: Visit dive centre followed by dive trip (24 pax) – led by JJ and Charlie with SeaQuest

Group 2: Visit dive centre followed by snorkelling trip (28 pax) – led by Sam and Jula with SeaExplorers

Group 3: Visit selection of dive centres, no diving /snorkelling (16 pax) – led by Alan and Chloe to Sierra Madre and Equation plus LGU discussion

Participants identified the threats, solutions and potential environmental benefits while at the dive centres, on the water and under the water. Green Fins assessment criteria was introduced.

**Summary:**

Chloe Harvey and Jerker Tamelander gave a brief summary of the day. Key takeaway messages from each of the practical sessions were shared including that Green Fins clearly provides the diving industry with the tools they need to tackle environmental challenges where they see fit and that it brings the public and private sectors together to act. Jerker identified a number of national and international financing opportunities in response to questions from those participants who were keen to start implementation.

| Session 4 | Incorporating Coral Ecological Services and Functions Valuation into Compensatory Mitigation for Reef Damage |
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**Introduction**

Each participant was given an electronic folder containing a draft version of the new ICRI Coral Ecological Services and Functions Characterization Tool, a sample data set, a reference paper on Indo-Pacific growth rates and a sample run through the Tool.

Participants were provided a brief overview of the development of the tool, including its earlier form as a primary component of the Hawaii Department of Land and Natural Resources' Coral Reef Mitigation Program, along with how the tool was modified for wider use for ICRI members.

Discussions included short-term, human-caused impacts and the role of Natural Resource Trustees versus the Responsible Party and their representatives, a introduction to the concept of ecological services and functions associated with corals, issues associated with both planned and unplanned human-caused impact events, how to assess coral impacts, and basic assumptions behind each of the variables involved with the Tool.

The Ecological Services and Functions Characterization Tool was discussed in detail, running through how to use it, its transparency and mechanisms for analysis, and how the tool was designed to be used by any jurisdiction.

Focus was on the different input elements and sections which focused on definitions, justifications (i.e. the scoring of different tool elements), and how the tool could be used to break down the characterization scores into different elements (Regulatory Functions, Habitat Functions, Production Services, Information Services, and Temporal Loss).

**Discussion**

Discussions focused on how the tool can be used to assess impact from either planned or unplanned events, evaluate proposed or implemented mitigation/restoration projects, balance impacts to proposed mitigation, and to balance alternative coral sizes / coral forms / coral rarity / habitats against what was impacted.

**Activity**

Participants were given a working version of the tool to download onto their own laptops and a sample data set to try out. Each participant uploaded data into the tool themselves and explored the resulting valuation and its interpretation in detail.

**Summary**

Next steps were discussed and participants committed to trying out the tool within their own jurisdictions over the next month or two and providing feedback via email regarding the draft tool before May 1, 2016. Based upon this feedback, the draft shall be modified to produce a final version which will be made available for member use on the ICRI Forum website (http://www.icriforum.org).

| Session 5 | Ecosystem services and sustainable financing of MPAs |
|---|---|

**Introduction**

The session was directed to MPA managers and other stakeholders, and divided into 4 sessions of conceptual presentations (1.5h) and 1 group activity (2.5h).

**Presentation**

- An introduction to the concepts of ecosystem services (ES) and economic valuation. Case studies of economic valuations of coral reef ecosystem services and MPAs in Bonaire were used for illustration.
- Different financing mechanisms, including regional/national solutions (e.g., trust funds, fiscality and tourism fees) as well as local methods (e.g., user fees, payment for ES and private management of MPAs).
- Case study of sustainable financing via a PPP was presented for Barbados.

**Group Activity**

The participants were ushered into two working groups:

***Group 1***: looking at a specific policy question, that could be answered using economic valuation

***Group 2:*** Sustainable Financing Mechanisms for MPAs

**Discussion**

The following questions were discussed:

- *What ecosystems are threatened?*
- *What ecosystem services are threatened?*
- *What are the important ES values and who are the beneficiaries?*
- *What are appropriate measures to address the problem?*
- *What are the costs?*
- *Who do we target?*
- *What are the key messages?*
- *How do we convey these messages?*

| Session 6 | Use of periodic coral reef fisheries closures as management catalysts to build local level engagement in conservation |
|---|---|

**Introduction**

The facilitator presented an overview of some of his organisation's work in the Western Indian Ocean on engaging coastal communities in locally centred fisheries management and building sustained support for marine conservation.

The session was split into two, with the first part focusing on the use of short term closures of gleaning fisheries for key species to demonstrate economic returns from fisheries management and build support for community-led marine protection initiatives, and the second using practical demonstrations to explore the growing role of information and communications technology in resource monitoring projects.

In the first part of the session participants learned that in 2004, Blue Venture supported a village in southwest Madagascar to close a small part of its octopus fishing area for a few months, to see whether this might boost catches and improve food security. When the closed site was reopened to fishing, the community saw a dramatic increase in both octopus landings and fisher incomes. The idea was copied by neighbouring communities and today, a decade on, more than 250 closures have taken place in Madagascar and in several other countries. During this session the facilitator also presented recent research into the effectiveness of the closures. This study, an analysis of eight years of data from more than 30 sites, found that octopus landings increased by more than 700% in the month following the lifting of a closure, boosting the catch per fisher per day by almost 90% over the same period, and enhancing incomes. Participants learned that the closures have also inspired more ambitious marine management initiatives, with fishing communities grouping together to establish more than 60 Locally Managed Marine Areas (LMMAs) that ban destructive fishing practices, many of them incorporating community-enforced marine reserves permanently off limits to fishing.

**Discussion**

The facilitator fielded several questions from the audience during his session. He was asked about the extent to which Blue Ventures was involved in LMMA management, why he thought that local villagers respected the closures, and whether alternative livelihood programmes were established to help fishers during closures. He responded that: i) Blue Ventures remains closely involved in supporting the fishery and broader conservation efforts in certain LMMAs, but has been taking steps to ensure that the funding remains sustainable, transitioning towards a "lighter-touch approach", with some villages managing closures without direct support; ii) Fishers recognised that if they left an area even for a small period then there would be a personal economic benefit; and iii) That part of the design of the approach was that fishers could continue to fish, since only a portion (approx. 20%) of the fishing grounds are closed at any given period.

**Activity**

In the second part of the session, participants learned about the potential to use a freely available software package called ODK to accelerate and improve resource monitoring. In this practical exercise, participants were split into five groups and sent to "landing sites" within the grounds of the conference centre to measure and monitor sea turtles. On returning to the auditorium, participants used the ODK software to enter and upload data they had collected using smartphones, which was then analyzed in real time.

## 5. OUTCOMES

| Session 1 | Resilience-based Management: Application of coral reef resilience assessments to support policy and management |
|---|---|

1. Improved guidance on implementing ecological resilience assessments is required, with emphasis on: selecting and weighting indicators, analysis steps and methods, timing (i.e., when resilience assessments should be implemented and how frequently); field methods to include field datasheets, compiling existing data and using citizen scientists, integrating socio-economic and citizen science data with ecological data , methods/proxies to assess human pressures; inter-species differences in bleaching susceptibility, identifying and prioritizing management actions, and consulting with stakeholders.

2. More training required to support applying resilience-based management (e.g., TNC's regional trainings) to help managers understand the value of resilience assessments and to build capacity to implement the assessments and use the results to inform management. Such training will need to be supported by long-term access to expertise and support to analyze data, interpret and present the results.

3. The greatest barriers participants identified in preventing people from undertaking a resilience assessment were funding and capacity to conduct the assessment. Other barriers included challenges with data (existence, access, accuracy) and lack of support for resilience-based management (e.g., decision-makers or community members not seeing the value (yet)).

4. Raising support for resilience-based management and resilience assessments is likely to benefit from development of a high-level summary document explaining how both contribute to global and regional policy commitments (e.g., Aichi agreement and COP21 targets).

5. There is an increasing need to articulate how ecological resilience assessments can feed into and support social resilience assessments or underpin efforts to build social resilience, and guidance on such integration is required.

6. Participants highlighted the importance of and challenges with using resilience-based management to inform policies and management decisions – specifically, the need to demonstrate the value of resilience-based management to decision makers and communities, the need to engage.

7. We need to conceive, plan and implement the resilience assessment process from management planning and/or policy direction.

8. Access to physical data layers that inform resilience assessments and marine spatial planning must be improved. Data layers describing historic and projected future exposure to coral bleaching conditions need to be in one location, simply explained, provided in data formats people use (namely, ArcGIS), with guidance on how they can be integrated into existing planning processes.

9. There is an increasing need to integrate social and ecological resilience assessments. Access to

socio-economic data to inform resilience assessments and guidance on how it can be integrated into ecological data are needed.

10. Participants discussed the challenges of communicating results to local stakeholders/ communities/ decision-makers in a way that is appropriate and meaningful to the audience.

11. An inventory needs to be developed of locations where resilience assessments have been conducted. The database needs to capture whether the assessments conducted have informed management and in what ways. The effort to compile the database should be shared in a peer-reviewed paper that reviews the challenges experienced and lessons learned.

12. Participants requested clear articulation of resilience-based management and how it builds on and differs from and reinforces existing management efforts.

13. A collaborative high-profile peer-reviewed publication is needed that brings the scientific community and key management partners together to articulate resilience-based management and how it differs from current management practices.

| | |
|---|---|
| Session 2 | Marine spatial planning in practice—Practical approaches and experiences on spatial planning and integrated management for sustainable use of tropical marine and coastal ecosystems |

The assumption that generic 'good practice' in marine and coastal management can be identified through the transfer of lessons from one place to another contrasts with the emergent findings that 'one size does not fit all' and that effective management needs to be tailored to specific prevailing social, economic and ecological contexts.

This undermines the view that there are 'models' or 'ideal' ocean and coastal management processes that can be applied universally and around which much existing guidance is formulated. An alternative approach is to recognize that effective management can only be generated when there is alignment between context-specific factors that derive from the relationship between people, biodiversity, natural resources and ecosystem services. These factors include social values, priorities and cultural norms, governance frameworks, ecosystem conditions, social and environmental change and the form and function of the ocean and coastal management approach.

Marine Spatial Planning and its implementation are component processes providing an umbrella or framework for conduct of a suite of processes of community engagement, ecosystem, activity and impact mapping and projection against targets such as relevant Sustainable Development Goals. This enables resource allocation, regulation, monitoring and performance evaluation in an adaptive management framework with well documented objectives and processes.

Through evaluation of the alignment between context and the management approach, the factors that either enable or constrain effective management performance can be identified. Through systematic assessment of enabling factors across multiple sites and contexts, it will be possible to identify the qualities of effective ocean and coastal management that promote alignment between management approach and the current and future context. The resultant guidance was applied across ocean and coastal management processes regardless of their form or design.

The MSP workshop provided the opportunity for identification and discussion of issues of importance for managers of coral reefs and related ecosystems and for providers of information and capacity support for marine Ecosystem Based Management. This provided valuable confirmatory and context specific information contributing to a broader evaluation of MSP through a consortium of partners, led by UNEP.

| Session 3 | Reducing impacts of reef tourism through public-private partnerships using the Green Fins approach |
|---|---|

All participants were easily able to identify threats posed from activities associated with their local marine tourism industry. Few were able to identify solutions at the beginning of the breakout group. Almost unanimous agreement that direct diver impacts posed highest threat to biodiversity (stress of marine life/ damage to live coral). Participants generally felt that the Green Fins toolkit provided effective solutions that allowed them to engage with the diving industry. It does not have to conflict with existing measures. Participants recognised the benefit of engaging with the diving industry, specifically for conflict reduction/ PPP.

There was a positive response both in the theory sessions and in the field about the potential management impact of the Green Fins approach and the clarity of awareness raising materials. Many of the managers and dive / snorkel industry stakeholders were seen to recognise the risks associated with marine tourism activities, but don't have the capacity or the tools to implement the changes they would like to see. Green Fins breaks down this initial barrier by providing the necessary materials to assist the stakeholders/managers to do this.

Green Fins was identified as a useful mechanism to open communication channels up between the public sector, private sector and the local communities/ tourists to raise awareness and share solutions to common challenges. It was commonly agreed that Green Fins presents a simple solution to a common challenge for local tropical coral reef managers. The success stories presented by national Green Fins representatives, the history of the approach and the replicability were all seen as characteristics which made the approach interesting for resource managers.

Carrying capacity is an issue managers are directed towards. While there are many examples of measures to manage diver / snorkeler numbers on specific sites, the group identified the need to promote best practice while longer term management plans are developed. Green Fins may help to build a case for implementing carrying capacity measures, where applicable.

Green Fins was recognized as a way to strengthen / measure compliance to national regulations. However, the voluntary participation of the marine tourism industry representatives was identified as one of the strengths of the model. Involving diver training organizations at the international level was suggested as a way of strengthening the impact of Green Fins. In response to participants interested in using Green Fins in their areas but concerned about costs, a case study was presented from the Maldives. Green Fins activities in the Maldives are sustained through finances secured from national funds, private sector sponsorships and a national conservation project. Meaningful management outputs were obtained, with relatively little resource input. UNEP also identified several funding sources available for potential national partners to secure finances to support the introductory costs. It was also noted that Green Fins activities clearly deliver on commitments towards a number of international conventions, goals and targets.

It was found that all participants appreciated that Green Fins would be a meaningful management approach to address the impacts associated with marine tourism activities in their areas. Strong expressions of interest were received for the introduction of Green Fins from representatives of Sri Lanka, Indonesia, Dominican Republic, Grenada and Palau. The need for Green Fins was also identified for Green Fins in Japan, Seychelles and Mexico.

| Session 4 | Incorporating Coral Ecological Services and Functions Valuation into Compensatory Mitigation for Reef Damage |
|---|---|

Participants expressed strong interest in further exploring the ICRI Coral Ecological Services and Functions Characterization Tool within their own jurisdictions and inquired about alternative uses that might be explored.

Discussions revealed the need for further formal training on data collection as evidence from short-term, human-caused events such as vessel groundings, vessel sinkings, oil spills, sewage spills, chemical spills, eutrophication events, sediment events, coastal development, harbor development, dredging events, destructive fishing events, illegal fishing events, etc.

Focus was on how the ICRI Coral Ecological Services and Functions Characterization Tool was but one component used in evaluating impacts to protected resources and could be integrated into both existing activities and more detailed impact investigations that might occur through trainings such as those provided by the Coral Reef CSI Field Training program.

Documentation of tool usage for legal proceedings, settlements, and agency actions was requested, but given the development nature of the Tool at this time such information is not currently available.

A number of participants requested details on constructing their own investigative gear and methodology.

All participants committed to trying the tool within their own jurisdicitions and providing feedback via email regarding the draft tool before May 1, 2016.

Modifications to the draft tool will be made based upon this feedback and a final version of the ICRI Coral Ecological Services and Functions Characterization Tool will be made available for member use on the ICRI Forum website (http://www.icriforum.org).

| Session 5 | Ecosystem services and sustainable financing of MPAs |
|---|---|

Two case studies of financing MPAs were chosen amongst the participants. It was decided that the Cebu outer islands (Mahanay group) and the Belize example (whole nation) would provide a good illustration of MPA with and without consolidated financing mechanisms. After presenting the context of the MPAs, the ecosystem services provided were assessed for both case studies. A first quantification of the main beneficiaries and their expectations were done. The financing needs of the MPA were assessed also.

The Belize system showed mechanisms (licenses fees, entrance fees,…) with most of the beneficiaries (fishers, end users, businesses) with the funds being managed through different channels (NGOs, Community-based organisations). Many partnerships were developed also with the private sector. In Cebu, the approach has identified that main beneficiaries with payment capabilities would be the hoteliers, day-tour businesses and visitors. Their business model relies more on beaches and food. Before proposing user fees and/or license fees with beneficiaries, it was identified that most of the businesses might not perceive their dependency to the health of ecosystems (visitors coming to the beach or doing a litlle of snorkeling). Therefore the communication should be centered on other benefits brought by the MPA (cleaning beach, reduce conflicts, …). Ways of transforming the MPA in a business partner to improve their financial benefits were also proposed (marketing, guided tours, etc..) in their approach with the private sector.

In general, it was noted that MPA managers should improve communication efforts with the private sector and develop concrete partnerships to help them improve their activities.

**Key Messages that came from the General Session**

1. Start with policy questions
2. Identify your target audience
3. Tailor your communication to suit the target audience
4. Communicate Communicate Communicate

| Session 6 | Use of periodic coral reef fisheries closures as management catalysts to build local level engagement in conservation |
|---|---|

**Objective**

- Understand the use of short-term closures of gleaning fisheries for key species to demonstrate economic returns from fisheries management

**Outcome**

Participants learned

- That traditional fishers in southwest Madagascar had been using short term closures of part of their octopus fishing grounds to manage the species.
- That there have been more than 250 closures to date in Madagascar, Mauritius, Tanzania, Mexico and Mozambique, with more in progress
- That impacts on fishery catches from the closures, village fishery income, and net economic benefits from 36 periodic closures were significantly positive.
- That fisher learning exchanges – whereby communities visit each other's fisheries and exchange information – were a vital tool used to help build support for the closures in other communities

**Objective**

- Understand how to build local support for community-based management within locally-managed marine areas (LMMAs).

**Outcome**

Participants learned

- That the returns that the communities have enjoyed from the closures have inspired them to establish more ambitious marine management efforts including Locally Managed Marine Areas (LMMA) that ban destructive fishing and often incorporate no-take marine reserves.
- That LMMAs are increasing rapidly in Madagascar, with more than 6000km2 of marine resource managed at more than 60 sites
- That LMMAs are championed at the highest levels of government, with the Madagascar president recently committing to tripling the country's protected area coverage, with a focus on locally managed approaches

**Objective**

- Explore the growing role and effective use of information and communications technology in monitoring projects

**Outcome**

Participants learned

- That free and open source software can be used to accelerate and improve monitoring of marine resources, and build community support
- That the software, ODK, is easy to use and works on any Android smartphone
- That ODK is simple to use but that requires training in order to develop the forms on which the data collection depends

## 6. SYMPOSIUM CONCLUSION

Sessions provided the theories and practical tools for:

1. Resilience-based management,
2. Marine spatial planning,
3. Public-private partnerships for reducing impacts of reef tourism, and
4. Compensatory mitigation for reef damage.

The sessions also shared useful case studies and good practices on:

5. Sustainable financing of MPAs, and
6. Fisheries management for local level conservation.

At the conclusion of the symposium, discussions covered several points:

- Many things can be applied to local level managers working in MPA in the Philippines. Scientists should continue as they do; managers however are different, since it is political. We focus on polls and that is our concern. It will have to be a compromise. It is important not to be frustrated with the politicians and government officials (Philippines)
- Marine ecosystems are diverse and we focus on coral reefs. We have to extend our focus to other tropical marine ecosystems. Future ITMEMS should consider including it. (Sri Lanka)
- The tools we were exposed to at the symposium are relevant to NGO work supporting the management of the ecosystems by the government. To help achieve the goal of ITMEMS, the facilitators should help implement the application of these tools so that they are effectively instituted in places so we are ready for it. We hope to see them get launched in Palau – dive industry stakeholder and managers would be very excited to see it (Palau),
- One of the main outputs was the tools- the excel sheets we could use right away. Everything was placed in our hands ready for use. We can now go back and share it with our colleagues, similarly with Green Fins and the other web links (Malaysia),
- Learnt a lot about communicating to managers, for managers. Engaging the Spatial Planning, we've learnt to speak the language of our stakeholders. We can also use this to communicate with the Public sector and step out of our conservation bubble. (Thailand),
- As a scientist, it was a great example to merge between theoretical/ practical. We could develop a network – share experiences; a knowledge management system (Indonesia),
- Echoing the Indonesian suggestion for a network (Maldives),
- Continuous networking comes with challenges, but it requires some thought (UNEP),
- It was highlighted that a coral reef event had not been organized in South Asia for a while now (India),
- We obtained global exposure, with practical experience (Vietnam).

Participants, facilitators and organizers unanimously agreed the symposium was a great success, and reiterated the need to continue ITMEMS for managers and decision makers as a major ICRI activity.

## APPENDIX: List of participants

**[Participants]**

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 1 | Agustina | Kirana | Regional Secretariat CTI-CFF (Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security) | Assistant to TWG Coordinator | Indonesia |
| 2 | Damar | Ario | Centre for Coastal and Marine Resources Studies – Bogor Agricultural University (PKSPL-IPB) | Program Director | Indonesia |
| 3 | Fajariyanto | Yusuf | The Nature Conservancy-Indonesia Coastal and Ocean Program | Conservation and Marine Spatial Planning Coordinator | Indonesia |
| 4 | Prihatinningsih | Puji | Karimunjawa National Park Ministry of Environment and Forestry Indonesia | Conservation Staff | Indonesia |
| 5 | Tutus | Wijanarko | WWF-Indonesia | Community Right Based Management Officer for Lesser Sunda | Indonesia |
| 6 | Asaad | Irawan | Ministry of Environment and Forestry / University of Auckland | Conservation Officer / PhD Student | Indonesia /New Zealand |
| 7 | Chelliah | Alvin Jeyanathan | Reef Check Malaysia | Programme Manager | Malaysia |
| 8 | Chen | Sue Yee | Reef Check Malaysia | Programme Manager | Malaysia |
| 9 | Guntabid | Justinus | Sabah Parks | Park Manager | Malaysia |
| 10 | Sukpong | Petchrung (Aey) | Greenfins – Thailand | Greenfins Thailand Coordinator (voluntary) | Thailand |
| 11 | Suwattano | Orapa | Department of Marine and Coastal Resources | Fishery Biologist officer, Practitioner Level | Thailand |
| 12 | Thongtham | Nalinee | Phuket Marine Biological Center (PMBC) | Senior Fisheries Officer | Thailand |
| 13 | Bui | Hoa Binh | GIZ – Integrated Coastal Management Programme | Senior Programme Officer | Vietnam |
| 14 | Chu Manh | Trinh | Cham Islands Marine Protected Area, Hoi An, Quang Nam | Deputy Head of Research and International Cooperation Division | Vietnam |
| 15 | Mai | Tra Ny | Center for Planning and Integrated coastal management | Head of Integrated coastal management Department | Vietnam |
| 16 | Pham | Van Hiep | Cham Islands Marine Protected Area, Hoian city | Expert | Vietnam |
| 17 | Arias | Myrtle | Zoological Society of London – Philippines | Biologist | Philippines |
| 18 | Avelino | John Erick | Department of Environment and Natural Resources | Ecosystems Management Specialist II | Philippines |
| 19 | Avilla | Lea | Biodiversity Management Bureau - DENR | Ecosystems Management Specialist II | Philippines |

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 20 | Coro | Alfredo II | Local Government Unit of Del Carmen, Siargao Islands | Municipal Mayor | Philippines |
| 21 | Daclan | Marion Antonette | GIZ | Senior Advisor | Philippines |
| 22 | Espana | Norievill B. | Marine Key Biodiversity Areas (MKBA) Project | MPA Conservation Officer | Philippines |
| 23 | Guevarra | Elmer | Local Government Unit of Caramoan, Camarines Sur | MAO-Coastal Resources Management Officer | Philippines |
| 24 | MAAÑO | Desiree Eve | Biodiversity Management Bureau - DENR | | Philippines |
| 25 | Mangantulao | Tito | Department of Environment and Natural Resources | Senior Ecosystem Management Specialist | Philippines |
| 26 | Maratas | Eufracio Jr. | Local Government Unit of the Municipality of Pilar | Municipal Councilor | Philippines |
| 27 | Mercado | Zarena | Conservation International Philippines Foundation Inc. | Technical Field Coordinator | Philippines |
| 28 | Ologuin | Joy | DENR Regional Office 12, Koronadal City | OIC-Chief Coastal Resource and Foreshore Management Services | Philippines |
| 29 | Pagliawan | Maria Retchie | Tubbataha Management Office | Research Officer | Philippines |
| 30 | Racelis | Cristina | Provincial Government of Sorsogon | Project Development Officer II | Philippines |
| 31 | Romero Jr | Fausto | Local Government Unit –SIRUMA | Municipal Planning & Development Coordinator/Conservation Fellow | Philippines |
| 32 | Rozaldo | Cynthia N. | DENR Region 4A-CALABARZON | Forester 1 | Philippines |
| 33 | Songco | Angelique | Tubbataha Reefs Natural Park and World Heritage Site | Protected Area Superintendent | Philippines |
| 34 | Lovell | Tricia Allison | Fisheries Division | Senior Fisheries Officer | Antigua and Barbuda |
| 35 | Brathwaite | Angelique | Blue Finance | | Barbados |
| 36 | Rosado | Samir K. | Coastal Zone Management Authority & Institute | Coastal Planner | Belize |
| 37 | Torres | Ruben | Reef Check Dominican Republic | President | Dominican Republic |
| 38 | Baldeo | Roland | Fisheries Division; Ministry of Agriculture, Lands, Forestry, Fisheries & the Environment | National Marine Protected Area Coordinator | Grenada |
| 39 | Constantine | Sherry | The Nature Conservancy | Program Manager, Southeastern Caribbean Program | Grenada |
| 40 | Jones | Loúreene | National Environment and Planning Agency | Coordinator | Jamaica |

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 41 | Carvajal | Maria de los Angeles | SuMar | Co-founder | Mexico |
| 42 | Nava | Gabriela | Oceanus, A.C. | Executive Director | Mexico |
| 43 | Bonanno | Vicki | Great Barrier Reef Marine Park Authority | Manager – Policy and Sustainable Development | Australia |
| 44 | Honchin | Carol | Great Barrier Reef Marine Park Authority | Project Manager - Environmental Health Best Management Practices | Australia |
| 45 | Jan H. | Steffen | German Agency for International Collaboration - GIZ | Project Manager, Marine and Costal Biodiversity Management in Pacific Island Countries – MACBIO | Fiji |
| 46 | Gibbons-Decherong | Lolita | Palau Conservation Society | Program Manager, Conservation and Protected Areas | Palau |
| 47 | Rengiil | Geraldine | Palau International Coral Reef Center | Department Head, Research & Aquarium | Palau |
| 48 | Hoon | Vineeta | Centre for Action Research on Environment Science and Society (CARESS) | Founder Trustee | India |
| 49 | Basheer | Ahmed | Greenfins Maldives (UNEP/Reef-World) | Greenfins Assessor | Maldives |
| 50 | Ibrahim | Nizam | Marine Research Center, Ministry of Fisheries and Agriculture | Senior Research Officer | Maldives |
| 51 | Naeem | Rifath | Environmental Protection Agency / Green Fins-Maldives | Senior Environmental Analyst | Maldives |
| 52 | Mohamed Farook | Mohamed Fairoz | Ocean University of Sri Lanka, Faculty of Fisheries and Marine Sciences | Academic Head | Sri Lanka |
| 53 | Sims | Helena | Ministry of Environment, Energy and Climate Change | Project Manager of the Seychelles Marine Spatial Planning initiative | Seychelles |

**[Facilitator]**

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 1 | Kenchington | Richard | Australian National Centre for Ocean resources and Security, University of Wollongong | Professor | Australia |
| 2 | Rocliffe | Steve | Blue Ventures | Outreach Manager | UK |
| 3 | Pascal | Nicolas | Blue Finance | | France |
| 4 | Gulko | David | ICRI Ad-Hoc Committee on Enforcement and Investigation | | USA |
| 5 | Parker | Britt | NOAA | | US |
| 6 | Heron | Scott | NOAA Coral Reef Watch | | Australia |

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 7 | Harvey | Chloe | Reef-World Foundation | | UK |
| 8 | Harvey | James | Reef-World Foundation | | UK |
| 9 | Wiseman | Charlotte | Reef-World Foundation | | UK |
| 10 | Kavanagh | Alan | Reef-World Foundation | | UK |
| 11 | Corrales | Juliana | Reef-World Foundation | | Costa Rica |
| 12 | Craven | Samantha | Reef-World Foundation | | Philippines |
| 13 | McLeod | Elizabeth | The Nature Conservancy | | US |
| 14 | Tamelander | Jerker | UNEP | Head, Coral Reef Unit | Finland |
| 15 | Vestergaard | Ole | UNEP | UNEP | |
| 16 | Maynard | Jeffrey | SymbioSeas | | US |
| 17 | Fletcher | Steve | UNEP-WCMC | | UK |

**[Organizer]**

| No. | Surname | Name | Affiliation | Position | Country |
|---|---|---|---|---|---|
| 1 | Santiago | James | BMB-DENR Coastal and Marine Division | Ecosystems Management Specialist II | Philippines |
| 2 | Apaya | Katrina | BMB-DENR Coastal and Marine Division | | Philippines |
| 3 | Yanagiya | Makiko | Ministry of the Environment | Deputy Director | Japan |
| 4 | Arivananthan | Meena | Panache Facilitation | Consultant | Malaysia |
| 5 | Kimura | Tadashi | Japan Wildlife Research Center | Research Scientist | Japan |
| 6 | Suzuki | Kumiko | Japan Wildlife Research Center | Research Scientist | Japan |
| 7 | Kamada | Noriko | Japan Wildlife Research Center | Researcher | Japan |