CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY

Summary Report: CTI-CFF Monitoring & Evaluation Working Group Meeting – Review of Regional State of the Coral Triangle Report and Monitoring & Evaluation Indicators

Jakarta, Indonesia October 22-25, 2012

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Coral Triangle Support Partnership

PRIMEX

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Jakarta, Indonesia October 22-25, 2012

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CONTENTS

ACRONYMS

ADB	Asian Development Bank
CCA	Climate change adaptation
cpue	catch per unit effort
CT	Coral Triangle
CT6	CT Countries (Indonesia, Malaysia, Philippines, Papua New Guinea, Solomon Islands, and Timor-Leste)
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
CTMPAS	Coral Triangle Marine Protected Area System
DPSIR	Driving Forces-Pressure-State-Impact-Response (framework for state of environment reporting)
EAFM	ecosystem approach to fisheries management
FAO	United Nations Food and Agriculture Organization
GCRMN	Global Coral Reef Monitoring Network
IUCN	International Union for Conservation of Nature
KM	knowledge management
M&E	monitoring and evaluation
MEWG	Monitoring and Evaluation Working Group (CTI-CFF)
MOU	memorandum of understanding
MPA	marine protected area
MyNODC	Malaysia National Oceanographic Data Centre
NCC	National Coordinating Committee
NPOA	National Plan of Action
NTA	no-take area
PARD	Pacific Regional Development
PNG	Papua New Guinea
RPOA	Regional Plan of Action
rSCTR	Regional State of the Coral Triangle Report
SCTR	State of the Coral Triangle Report
SOM	Senior Officials Meeting
TNC	The Nature Conservancy
TOR	terms of reference
TWG	thematic working group
UPMSI	University of the Philippines Marine Science Institute
USCTI	United States Support to the Coral Triangle Initiative
WRI	World Resources Institute

ACTIVITY REPORT

INTRODUCTION

On 22-25 October 2012, the Monitoring and Evaluation Working Group (MEWG) of the Coral Triangle Initiative for Coral Reefs, Fisheries and Food Security (CTI-CFF) met for the second time this year to tackle two important mechanisms for tracking the implementation of the CTI-CFF Regional Plan of Action (RPOA), namely, the Regional State of the Coral Triangle Report (rSCTR) and the CTI-CFF Monitoring and Evaluation (M&E) indicators.

Adopted in 2009, the RPOA is a 10-year (2010-2020) plan, which, while not legally binding, sets goals and a timeframe for the six CTI-CFF member-countries to address growing threats to the region's coral reefs, fisheries, threatened species and other marine and coastal living resources. CTI-CFF includes Indonesia, Malaysia, Papua New Guinea (PNG), Philippines, Solomon Islands and Timor-Leste, often collectively called "CT6."

The RPOA is organized around the following five goals, each supported by a thematic working group (TWG) chaired by one of the CT6:

- Goal 1 – Priority seascapes designated and effectively managed (Chair: Indonesia)
- Goal 2 – Ecosystem approach to management of fisheries (EAFM) and other marine resources fully applied (Chair: Malaysia)
- Goal 3 -- Marine protected areas (MPAs) established and effectively managed (Chair: Philippines)
- Goal 4 – Climate change adaptation (CCA) measures achieved (Co-chairs: Indonesia and Solomon Islands)
- Goal 5 – Threatened species status improving (Chair: Philippines)

The MEWG was formed in 2008 and has been working on an ad hoc basis to develop the CTI-CFF M&E system. It has produced a set of indicators that have been presented to the CTI-CFF Senior Officials Meeting (SOM) and continue to be developed according to the SOM's recommendations. These draft indicators were recently reviewed in an informal meeting of the MEWG in Manila, Philippines, on 25 April this year. On 28 April, at their organizational and first formal meeting, the MEWG agreed to formally endorse the indicators to the concerned TWGs for further review.

This Jakarta meeting included a three-day workshop to incorporate feedback from the TWGs into the M&E indicators and further refine the indicators preparatory to their presentation to the upcoming 8th SOM (SOM8) and 4th Ministerial Meeting in Kuala Lumpur in November. Also up for another once-over at this workshop was the expert-reviewed rSCTR, which was developed in Manila on 26-27 April 2012 based on inputs from the State of the Coral Triangle Report (SCTR) submitted by each of the CT6.

Participants at the MEWG Meeting on October 22-25, 2012, in Jakarta, Indonesia. (Photo: US CTI PI/A Sia)

The workshop was evenly divided into the two main agenda items, with the first half focused on the rSCTR review and the second half on discussions on the M&E indicators. It was attended by a total of 49 participants, including 22 official delegates from the CT6 and representatives from CTI development partners. (Annex **A1**)

On 25 October, members of the MEWG convened for their 2nd formal meeting to deliberate and decide on the outputs of the three-day workshop. This meeting was attended by 15 MEWG members and country representatives, and 13 development partners and observers.

The four-day event was hosted by the Government of Indonesia through its National Coordinating Committee (NCC), with assistance from the Asian Development Bank (ADB), US Coral Triangle Initiative Support Program (USCTI), and the CTI-CFF Regional Secretariat.

OBJECTIVES & EXPECTED OUTPUTS

This MEWG meeting was called to:

1) Review and finalize the set of indicators to measure progress towards achieving the RPOA goals, targets, and higher level outcomes;
2) Develop CTI Index;
3) Review the rSCTR;
4) Develop Drivers-Pressure-State-Impact-Response (DPSIR) as a framework for the CTI-CFF M&E system;
5) Conduct the CTI-CFF MEWG 2nd formal meeting to review and decide on workshop outputs; and
6) Finalize decision memo for SOM8 review and endorsement.

The meeting was expected to produce the following key outputs:

1) CTI-CFF outcome statements agreed and endorsed;
2) Indicators reviewed and endorsed;
3) System of tracking and reporting determined;
4) Decision memo for SOM8 endorsed; and
5) Next steps agreed.

OVERVIEW OF PROCEEDINGS

1) ***Workshop*** – The three-day workshop consisted mostly of breakout and plenary discussions guided by expert presentations. There were two main inputs to the discussions: (1) expert reviews of the rSCTR, and (2) M&E indicators that came out of last April's MEWG meeting and subsequently reviewed by concerned TWGs.
    a. Day 1 consisted of eight presentations that provided a discussion framework for the three-day workshop. These presentations covered the full range of topics in the workshop agenda (Annex **A2**), including the M&E indicators, a proposed CTI index, the rSCTR and expert comments on the rSCTR (Annex **A3**), an overview of results-based M&E and the DPSIR framework used in the rSCTR and proposed for the CTI-CFF M&E system, and highlights of the World Resources Institute's (WRI) 2012 publication *Reefs at Risk Revisited in the Coral Triangle*. Generally, the presentations underscored the importance of M&E based on reliable and defensible information and a framework that links lower level indicators to high level outcomes. This pointed up the need to more clearly define the high level outcomes for coral reefs, fisheries and food security that are expected from the implementation of the RPOA and the indicators that measure them. A plenary brainstorming session on how to

best address this concern capped Day 1. In particular, the group agreed to review the indicators for each of the five RPOA goals and work up from there to develop the high level outcome statements and indicators.

b. Days 2 and 3 were largely devoted to developing the high level outcome statements, reviewing the M&E indicators to determine their "fitness" as measures of progress toward the desired CTI-CFF outcomes, identifying data sources, determining frequency of reporting and the possible flow of M&E information from source to the regional level, and identifying "Next Steps" for the MEWG, particularly those related to preparations for SOM8. A presentation on the CT Atlas provided some important inputs to the discussion on Day 3. Workshop results are summarized in the next section below.

2) ***CTI-CFF MEWG 2nd formal meeting*** – This meeting reviewed and formally endorsed the workshop outputs, a large part of which is summarized in a decision memo to be presented for consideration by SOM8. The full minutes of the meeting are included in this report as Annex **A4**; shown in the section below are highlights of the meeting.

RESULTS

1) ***CTI Index.*** The Knowledge Management (KM) Team of ADB is developing a CTI Index that can be used to measure progress in the implementation of the CTI National Plans of Action (NPOA) and RPOA. The index was presented (by Ms Abbie Trinidad, ADB KM Team) and discussed at a plenary session on Day 1 but not taken up further during the workshop. Key points raised:

   - The proposed CTI Index uses a simple scoring system that considers implementation level of programs and activities under each of the five RPOA goals and their contribution to the desired high level outcomes for coral reefs, fisheries and food security.
   - The CTI Index taps expert opinion and is mostly perceptual and intuitive, i.e. based on what the respondents know about RPOA and NPOA and how they are being implemented.
   - An initial test run involving a small group of 15 regional and national scorers indicated that as a regional initiative that includes both country level and regional level activities, CTI-CFF has achieved 42.58 percent implementation rate with respect to maintaining ecosystem services of coral reefs; 41.65 percent relative to achieving sustainable fisheries; and 42.44 percent in terms of improving food security, based on an unofficial articulation of the CTI-CFF high level outcomes.
   - Because of the very small sample size used, these results cannot be considered in any way representative of what is happening in the region and were calculated as a test for the scoring system.
   - In its current form, the method is rather crude and needs to be developed further.
   - Other limitations include: (1) Percentages are arbitrary; (2) Method cannot measure CFF interventions that are not specifically included in the CTI-CFF plans of action; (3) It is possible for the index and high level outcome indicators to diverge; and (4) Implementation of some activities cannot be measured using the scoring system prescribed.
   - While the index is admittedly arbitrary, what can be inferred from the index is more important than the index itself. To make it more meaningful, the index can be linked to a qualitative scale (e.g., low, medium, high; or poor, satisfactory, very good, excellent)
   - Proposed next steps: *Immediate* – (1) Increase confidence in the index by increasing sample size; and (2) report results to SOM as is or with improvements. *Medium-term* – (1) MEWG to adapt the method and adjust when the indicators are completed;

and (2) Develop a tracking system to ensure that the index can be compared with outcome indicators.

- One concern raised about the CTI index was that for the method to work, it would require "a few hundred or even a few thousand respondents." Is there a need to develop a CTI index when there is already an ocean health index?

2) ***rSCTR review.*** The rSCTR review was discussed in a plenary session that included four expert presentations: a presentation by Dr. Perry Aliño (University of the Philippines Marine Science Institute, UPMSI) on the highlights of the rSCTR and three presentations detailing the reviewers' comments on the draft and their recommendations for improving it. Related to this, another plenary session provided updates on the status of the country SCTRs.

    - rSCTR highlights:
        - The rSCTR aims to (1) benchmark the regional status of the CT6; (2) identify information gaps; (3) discuss the relationship of governance, ecological and social conditions in the CT6; and (4) link the national plans of action (NPOA) and RPOA to desired CTI-CFF high level outcomes.
        - The high level outcomes in the rSCTR are defined as: (1) sustained coral reef ecosystem and its services; (2) sustainable fisheries established; (3) improved food security
        - DPSIR analysis is used to inter-relate the social and ecological conditions of the Coral Triangle; to identify data gaps, reliable and accessible social and ecological indicators; and develop an effective KM system.
        - The report shows the importance of the high biodiversity of the region, how it relates to ecosystem productivity, and how it contributes to fisheries and food security.
        - It highlights existing connectivities prevalent in the Coral Triangle, including larval exchange and dispersal and migratory routes, and notes that the Coral Triangle is crucial to the life cycle of many threatened and endangered species.
        - It observes that while the importance of coral reefs is widely acknowledged in the region, the management of coral reefs is weak, with only about one percent of MPAs rated effective.
        - It links resource condition in the CT6 to food consumption and notes that the Philippines, Solomon Islands and PNG show indications of decline in fish protein consumption and that these three countries, along with Indonesia, fall below the 10-12% dietary energy requirement recommended by the United Nations Food and Agriculture Organization (FAO).
        - It assesses the urgency of local threats in the CT6, using the integrated local threats defined in the *Reefs at Risk Revisited in the Coral Triangle* as reference.
        - The report suggests that improving governance will help reduce the threats, improve resource conditions, decrease poverty and hunger in the CT6, and thus contribute to the desired CTI-CFF high level outcomes.
        - Regional cooperation can help accelerate the implementation of country plans of action and perhaps result in synergistic effects that will benefit the countries as well as the entire region.
    - Reviewers' comments and recommendations – Three experts presented their reviews, namely, Dr. Angel Alcala (Silliman University), Dr. Alan White (The Nature Conservancy, TNC), and Dr. Terry Hughes (James Cook University). Below are some highlights of their presentations; the more detailed reviews are included here as Annex **A3**.

- Dr. Alcala noted that the rSCTR describes population as an important driver but it does not discuss population issues. He said the report must address population issues because "the link between population, coastal degradation and poverty is very obvious." He spoke at length about MPA and its benefits, based on his nearly four decades of experience working in MPAs in the Philippines. He recommended that the CT6, particularly the Philippines, Indonesia and Malaysia which are listed among the countries most vulnerable to climate change, should implement programs using "current methodologies in determining resiliency to climate change for various coral reefs in their jurisdiction". He agreed that socioeconomic studies on coral reef use are needed "to emphasize the economic and social significance of coral reefs and inspire people to protect them."
- Dr, White's presentation highlighted the need for the rSCTR to connect to the M&E system and indicators being developed for the 5 RPOA goals as a foundation for tracking CTI progress leading to the higher level outcome indicators being formulated in this workshop. In addition he detailed specific recommendations to improve the executive summary, content, mechanics and referencing, and organization of the rSCTR. He suggested that the Executive Summary should more clearly "tell the story in two or three pages for a broad audience." He said the report can be used as a marketing tool "so we might think of having a summary version that is easy [for laypeople] to understand because we're aiming for a broad audience and not everyone will be experts in this field."
- Dr. Hughes said that there are three main drivers that impact reefs, namely, climate change, pollution mainly from land, and overfishing. The report talks extensively about overfishing but tends to be silent on the other issues, he noted. "From a governance perspective, the report dealt mainly about institutions and the policies and laws that relate specifically to coral reefs, but it does not talk about laws for runoff, land clearing, or coastal development. If you're going to tackle regional scale fisheries related to coral reefs, you can't just ignore those issues," he said. Dr. Hughes's presentation focused on three issues central to the rSCTR: (1) evaluating the status of coral reefs and the need to establish a link between the monitoring process and policy implementation so policy can be adaptive; (2) MPA design and the need to take into account connectivities and the importance of managing not only the MPAs but also the surrounding seascapes; and (3) role of MPA for fisheries management and for building resilient ecosystems and the need for management measures that deal directly with climate change and pollution (runoff).

- Status of the country SCTRs – Dr. Ed Gomez (UPMSI) reported on the development of the country SCTRs. Highlights:
  - It was decided at the outset that the SCTR were going to be country reports and not consultant reports. The experts' role was not to write the reports but to guide the countries in the preparation of their reports. This helps promote buy-ins from the countries.
  - Science panelists have commented on the country reports. The science panel's suggestions and comments were collected and forwarded to country NCCs/writers.
  - Table of basic country characteristics was updated and sent to the country teams for consideration. The updated table, which will serve as input to the rSCTR, contains some new values suggested by the experts, but it will be the countries' decision to use the new values or stick to their original figures. The use of the table was recommended as a way to achieve some semblance of

uniformity in reporting across the CT6. The summary country tables are shown in Annex A5.
    - The Philippine report is ready for publication; Indonesia is almost done; the Pacific Island Country reports still have to be reviewed by the Pacific Regional Development (PARD); PNG said they expected to finish their report by the end of the week; and Malaysia hoped to finish before SOM8. Specifically, Timor-Leste needed to work on Chapter 6 of their report; they promised to "organize a meeting with our partners so we can complete the draft and send it to the Regional Secretariat."
    - The body agreed to discuss what frequency of reporting would work best at country and regional levels. This concern was tackled in subsequent discussions and discussed further during the MEWG formal meeting.

3) ***DPSIR framework***. The DPSIR framework is an integrated approach for organizing information and reporting on the state of the environment. It was used in the development of the rSCTR and has been proposed to also serve as the framework for the CTI-CFF M&E system. Dr. Perry Aliño (UPMSI) shared in a presentation some insights on how DPSIR can apply to the M&E system, based on his team's experience in using the framework for the rSCTR. Although implied to be the guiding framework for succeeding discussions on the CTI-CFF M&E systems, the framework was not explicitly discussed further during the workshop. Some highlights:
    - DPSIR provides an analytical approach for linking the various governance imperatives (i.e., interventions/responses) to the desired outcomes and enabling macroeconomic drivers. It can integrate different levels of M&E and outcomes.
    - Iterative application of the DPSIR to the CTI-CFF allows for an objective evaluation of the link between inputs and outcomes and provides the CTI-CFF with a tool not only for evaluating impact of responses but, more importantly, for adjusting responses to contribute to the CTI-CFF outcomes.
    - DPSIR links inputs to outputs, i.e., direct attribution of the responses or interventions (e.g. MPA, EAFM & CCA actions in the NPOA and RPOA) to improvement in CFF. For example, it can be shown that acting "on time" (enforcement) increases the chance of recovery and improvement of trophic levels, even in situations where biomass is low.
    - There is a need to determine the benchmark states, and some validation of the drivers and threats needs to be undertaken.
    - It would be useful to link catch monitoring or quality of life surveys being done by national government agencies, if available, to areas of intervention of CTI-CFF.

4) ***CTI-CFF high level outcome statements***
    - It has been noted that while the RPOA clearly defines its five goals and the targets and priority actions under each goal, it does not define any high level outcomes relating to coral reefs, fisheries and food security, the CTI-CFF's primary concerns. It was agreed that in order for the goals, targets and actions defined in the RPOA to contribute to some overall CTI-CFF outcomes, such outcomes must be clearly articulated.
    - Working in three small groups, the body came up with and agreed on the following outcome statements, which are "not final but something to start with":
        - Coral reef ecosystem integrity and services stabilized / maintained
        - Fish stocks improved and sustained (coastal and pelagic fisheries)

- Improvement in the affordability, availability and quality and safety of food coming from coastal and marine

- There was general agreement that the "coral reef ecosystem" referred to in the second outcome statement above includes not only coral reefs but also mangroves and seagrasses.
- The small group discussions also produced a set of indicators for each of the three proposed high-level outcome statements. These indicators are included in this report as Annex **A6**.
- The body agreed that the third outcome statement above should be elevated to a top-level impact statement and should include "community resiliency and social well-being." The discussion on this impact statement centered on how to measure food security, community resiliency and social well-being.
    - There was some concern about the transactional cost of pursuing the high level outcomes and what the countries would be willing to commit to achieve these outcomes.
    - A number of questions were raised related to the scope of food security: Does it refer to food security of a specific group of stakeholders, or does it cover the whole country or the entire CT region? Does it mean marine food security or does it also include terrestrial?
    - The group agreed that the MEWG should bring in the expertise of a social economist to help determine the appropriate scope of the impact statement and develop suitable indicators.
    - Other questions raised related to the high-level outcome indicators are included in this report as table annotations in Annex **A6.**

5) ***Review of M&E indicators and system of tracking and reporting***

- The indicators review covered all five goals of the RPOA and looked at how the low-level indicators link to high-level outcomes.
- As part of the review, the workshop identified possible information sources and institutions responsible for measuring and reporting indicator data and ways to verify data. How all these will be integrated into one system that tracks both high-level and low-level indicators has yet to be determined.
- Dr. Aliño suggested that the M&E system should include thresholds that are acceptable to all countries.
- The indicators tables that came out of the workshop are shown in Annex **A7**. All tables are annotated and also include information relevant to tracking and reporting, including a qualitative estimate of the cost of monitoring and reporting, frequency of reporting, and baseline years.
- There were several questions about the indicators for Goal 1 (on priority seascapes). The body agreed to note the questions down for the Seascapes TWG to discuss further. These questions are included in this report as table annotations in Annex **A7.**
- To facilitate the discussion on how the indicators contribute to the high-level outcomes, a schematic table of the output and outcome indicators for each goal was presented during the workshop. Participants were requested to analyze the diagram and to inform the MEWG Secretariat of any gaps they might find. The diagram is included in this report as Annex **A4c**.

- The MEWG is operating on an ad hoc basis and may or may not become a permanent group. Under the CTI-CFF setup, it is the Regional Secretariat that is responsible for M&E, but it is not clear yet when it will be officially established or when it is going reach full capacity. In the meantime, M&E is expected to work under the assumption that the countries (NCCs) will support the TWGs in the collection, collation, storage, retrieval and analysis of data and the preparation of reports.

6) ***MEWG 2nd formal meeting.*** The meeting resulted in the following two major outputs:

- Decision on the CTI-CFF M&E System – The MEWG agreed to endorse a decision memo on the MEWG Terms of Reference (TOR), the CTI-CFF M&E System, and data sharing through the CT Atlas. The memo, as endorsed by the MEWG, is shown in Annex **A4a**. The MEWG Secretariat was tasked to draft the introductory section ("Background") of the memo, which will be presented to SOM8 in November 2012.
- MEWG roadmap for the period November 2012-May 2013 –The roadmap details immediate next steps leading up to SOM8 and outlines major activities to complete and operationalize the M&E system. The roadmap is shown in Annex **A4b**

7) ***Others: CT Atlas***

- Ms Annick Cros (TNC) presented on and raised several questions about data sharing issues under the CT Atlas (http://ctatlas.reefbase.org) for the group's consideration. These issues included (1) national data validation (how to validate national data layers); (2) process of adoption of common regional data layer (who to talk to); (3) information flow (how to get data to do analysis and sharing back); (4) how to keep track of progress (spatial and non-spatial); and (5) additional support required by countries (is there a need for training?).
- Ms Cros also pointed to issues with data variances among data sets and comparability across different data collection methods, and the challenges faced on data sharing of countries. One solution that has been put forward is to have each country input data directly into the database.
- Noting efforts at the country level to refine data collection, Dr. Gomez suggested that maps should have a footnote qualifying the information it provides. The Philippines, for example, is planning to remap the whole country using remote sensing data. "It's an evolving process and we're continuing to improve," he said.
- Malaysia said oceanographic data from the country intended for sharing with the international community pass through the Malaysia National Oceanographic Data Centre (MyNODC). Data provided by the MyNODC are the "correct data."
- Dr. Aliño said the countries may want to consider setting some minimum standards of data acceptability.
- Dr. Darmawan (Regional Secretariat) maintained that as a rule of thumb in the CTI-CFF context, the NCCs have the responsibility for data collection and collation at the country level and for data sharing at the regional level. "There are responsibilities for data sharing related to national security," he pointed out. "We don't want to give the impression that CTI-CFF is pushing the countries to share data they don't want to share."
- The CT Atlas is in the process of developing memorandums of understanding (MOUs) to facilitate data sharing, and all countries have designated a person to work with the CT Atlas on the MPA dataset. As a result, the CT Atlas now has the most updated MPA dataset for the Coral Triangle, Ms Cros said. She suggested if the

countries might want to do the same for the other RPOA thematic areas of concern.

- Ms Lauretta Burke (WRI) said it may be useful for the CT Atlas to add a new dataset on destructive fishing.

UPCOMING KEY MILESTONE ACTIVITIES

The rSCTR and CTI-CFF M&E indicators will be presented to SOM8 in November 2012.

ANNEXES

A1: LIST OF PARTICIPANTS AND RESOURCE PERSONS

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A2: AGENDA (as published, does not reflect changes during actual workshop)

Day 1: Monday, 22 October 2012. Set of Indicators and Frameworks to Measure RPOA		**Hotel Borobudur, Jakarta, Indonesia**
8:00-8:30	**Registration**	*Workshop Secretariat*
8:30-9:15	**SESSION 1.1. Opening and Introductions** Message ▫ NCC-Indonesia ▫ NCC-Philippines and MEWG ▫ CTI-CFF Interim Regional Secretariat ▫ Asian Development Bank ▫ USCTI Support Program Introduction of participants Workshop overview, objectives and agenda	*Content: MEWG, KM Project/rSCTR* *(please add names on who delivered message for the NCC Indonesia and Reg Sec* *Ms. Lynette Laroya* *Mr. Pavit Ramachandran* *Mr. Alan White* *Mr. William Jatulan*
9:15-9:30	**SESSION 1.2. MEWG Framework for the CTI; SCTRs, Atlas, Index** A presentation that gives an overview of the entire MEWG system for CTI-CFF and shows the various contributing elements	*Dr. Darmawan*
9:30-10:30	**SESSION 1.3. (Latest) Set of RPOA Indicators** A presentation on output indicators based on the five goals of RPOA and resulting from discussions of the thematic working groups	*Ms Luz Baskiñas*
10:30-10:45	**BREAK**	
10:45-11:00	**SESSION 1.4. The CTI Index** A presentation of scores given by countries and regional experts	*Ms. Abbie Trinidad/Mr. Reniel Cabral*
11:00-12:30	**SESSION 1.5. The Regional State of the Coral Triangle Report (rSCTR)** A presentation of scores given by countries and regional experts	*Dr. Perry Aliño (presenter)* *Dr. Angel Alcala* *Dr. Alan White* *Dr. Terry Hughes*
12:30-13:30	**LUNCH**	
13:30-14:00	**SESSION 1.6. Overview of the national State of Coral Triangle Reports** A presentation on basic level of indicators found in the national SCTRs and relate these to DPSIR framework	*Dr. Ed Gomez*
14:00-14:45	**SESSION 1.7. Pressures and Threats to Coral Reefs, Fisheries and Food Security** Using *Reefs at Risk* threat maps, summarize the current rankings of threats across CTI; discussion on possible future validation and relevance to M&E	*Dr. Lauretta Burke*
14.45-15:00	**OPEN FORUM** Clarifications on MEWG and national SCTR indicators	*Facilitator*

Day 1: Monday, 22 October 2012. Set of Indicators and Frameworks to Measure RPOA		Hotel Borobudur, Jakarta, Indonesia
15:00-15:15	**BREAK**	
15:15-16:00	**SESSION 1.8. DPSIR as a Framework for M&E CTI-CFF** A presentation on a framework for anchoring the various levels of indicators developed by the country SCTR, rSCTR, and MEWG. The presentation introduces the DPSIR and the DPSIR with specific use of the framework in the CTI-CFF	*Dr. Perry Aliño*
16:00-17:00	**SESSION 1.9. Proposed Outcomes of the CTI-CFF** Presentation/discussion on outcomes and outcome indicators	*Dr. Perry Aliño*

Day 2: Tuesday, 23 October 2012. Developing System to Collect Data and Information		Hotel Borobudur, Jakarta, Indonesia
9:00-9:30	**SESSION 2.1. CTI-CFF outcome statements and indicators** Discussion on flows for response tracking & impact evaluation to gauge benefits derived from M&E	*Dr. Perry Alino*
9:30-10:30	**SESSION 2.2. Breakout workshop: CTI CFF impact indicators** Participants are grouped into 3 depending on interest/area of expertise – for CFF Analysis of Higher Level outcomes	
10:30-10:45	**BREAK**	
10:45-12:00	**SESSION 2.3. Presentation, discussion and recap of breakout workshop outputs** Agreement on outcome indicators and impact indicators; Discussion on processes for data collection, capacity building requirements	
12:30-13:30	**LUNCH**	
13:30-14:30	**SESSION 2.4. Review and finalize the RPOA Indicators on Goal 3. Marine Protected Areas including needed information and process to track indicators** Discussion on indicators, data collection on these indicators and links to outcome indicators	*Dr. Alan White/ MPA TWG*
14:30-15:30	**SESSION 2.5. Review and finalize the RPOA Indicators on Goal 4. Climate Change Adaptation including needed information and process to track indicators** Discussion on indicators, data collection on these indicators and links to outcome indicators	*Ms. Agnetha Vave-Karamui* *CCA TWG*
15:30-15:45	**BREAK**	

Day 2: Tuesday, 23 October 2012. Developing System to Collect Data and Information		Hotel Borobudur, Jakarta, Indonesia
15:45-17:00	**SESSION 2.6. Review and finalize the RPOA Indicators on Goal 1. Seascapes including needed information and process to track indicators** Discussion on indicators, data collection on these indicators and links to outcome indicators	*Ms. Luz Baskinas MEWG TWG*

Day 3, Wednesday, 24 October 2012: Developing System to Collect, Store and Retrieve M&E Data and Information		Hotel Borobudur, Jakarta, Indonesia
9:00-10:30	**SESSION 3.1. Review of the RPOA Indicators on Goal 2 (Ecosystem Approach to Fisheries Management) and Goal 5 (Threatened Species)** Discussion on indicators, data collection on these indicators and links to outcome indicators	*Breakout Group Workshop*
10:30-10:45	**BREAK**	
10:45-11:15	**SESSION 3.2. Report back to Plenary** Presentation	*Presenters from the Breakout Groups*
11:15-12:30	**SESSION 3.3. Data Storage, Retrieval and Reporting of CTI Indicators** Discussion on Data Storage and Retrieval on CTI Indicators Discussion on Reporting Schemes on CTI Indicators	*Ms. Annick Cros* *CTATLAS; MEWG TWG*
12:30-13:30	**LUNCH**	
13:30-14:30	**SESSION 3.6. Implementation Arrangements to include coordination and communication modalities** Discussion	*Dr. Alan White* *MEWG TWG*
14:30-15:00	**SESSION 3.4. Synthesis of Workshop Outputs and Process** Presentation/ Discussion	*Ms. Luz Baskinas* *MEWG TWG*
15:00-15:30	**SESSION 3.5. MEWG Report/Presentation and Decisions to be Requested in SOM (November 2012)** Discussion	*Dr. Alan White* *MEWG TWG*
15:30-16:30	**SESSION 3.6. MEWG Roadmap and Resources Needed** Discussion	*Mr. William Jatulan* *MEWG TWG*
16:30 17:00	**SESSION 3.7. Closing of Workshop** Discussion	*Mr. Mar Guidote* *USCTI Support Program*

Day 4, Thursday, 25 October 2012: CTI-CFF MEWG 2nd Formal Meeting		Hotel Borobudur, Jakarta, Indonesia
9:00-12:00	1. Approval of the Agenda 2. Approval of the Minutes of Meeting held last April 2012 3. Matters Arising from the Minutes 4. Preparations for the SOM and Decisionsto be requested: a. Endorsement of the outputs of the ME workshop and the CTI-CFF M&E Systemas endorsed by MEWG with provisions for modifications by the respective thematic working going forward b. Full endorsement of the MPA and CCA indicators c. Review and endorsement from TWGs of its respective indicators d. Endorsement of the national and regional SCTRs and frequency of reporting e. Enjoining countries for data inputs on the baselines and subsequent reporting through the CT Atlas f. Prepare memo to SOM for endorsement detailing relationship of CTI Secretariat, the CT6 and CT Atlas managed through the World Fish Center 5. Roadmap to finalize the rSCTR and M&E System 6. Other Business	

A3: EXPERT REVIEWS OF THE CTI-CFF REGIONAL STATE OF THE CORAL TRIANGLE REPORT (RSCTR)

1) Reviewer: Dr. A.C. Alcala, Silliman University, Dumaguete City, Philippines

Note: This is the full text of Dr. Alcala's review of the rSCTR, parts of which were presented at the MEWG Meeting on 22 October 2025 in Jakarta, Indonesia

The document consists of 87 pages, of text, tables, figures and bibliography. (Some more data need to be entered in tables). There are 8 sections. The first section (Introduction) sets the four objectives of the Regional State of the Coral Triangle Report, namely, benchmarking of the CT6 region, gap identification, ecological and social relationships of the six countries, and the linked actions of coral reef conservation, sustainable fisheries, and food security. The introduction presents the five main goals of the CTI (namely, seascapes management, ecosystem approach to fisheries, MPA establishment and management, climate change adaptation, and conservation of threatened species) as agreed by the leaders of the CT6 countries in 2009, as well as the four objectives of the Regional State of the Coral Triangle Report, which are benchmarking the CT6 region; identifying information gaps, relationships of ecological and social relations of the CT6 countries; and linking national and regional plans to desired outcomes for (1) coral reef conservation, functions and services, (2) establishing sustainable fisheries, and (3) attaining food security. The timeline for the attainment of these five CTI goals through the three desired outcomes appears to be 2020, eight years (or 10 years?) from 2012, according to the document.

The second, third, fourth and fifth sections deal with the various characteristics including the threats and vulnerabilities of the CT region and the individual CT6 countries that set the stage for the sixth section on National Plans of Action (NPOA). The actions of the six countries appear to be directed to achieving the first three goals (seascapes, ecosystem approach to fisheries, and MP As). It would be nice if all six countries could implement actions to address all five goals at about the same time to allow comparison of results over the whole CTI region. For example, valuable lessons can be learned on adaptation to climate change. In fact, the document recommends joint research and monitoring on effects of climate change to be participated in by the six CT countries (Fig. 7.10).

The seventh section is the longest and most important section of the Report and is composed of 39 pages, about half of the Report, and contains extensive discussion of the main substance of the Report. This section justifies the need for the CTI in terms of achieving synergies under cooperative governance mechanisms that integrate social and ecological conditions and objectives, considering the existence of biophysical, - economic and institutional connectivities. The section deals with the drivers of the pressures and responses and their impacts in the CTI region, gap analysis for achieving higher level outcomes, linkages between national and regional plans of action, linkages among governance, ecological and socioeconomic conditions, linkages between national and regional plans of action and the three higher level outcomes, and linkages between governance capacity and threats and vulnerabilities – looks complicated, but overall seems to be a logical approach.

The eighth section of three pages gives the summary and the six good recommendations with 13 suggested actions designed to ensure good linkage between the regional and national plans of action and among the regional plans including the achievement of the three higher level outcomes, namely, (1) sustained coral reef (and associated ecosystems and [I assume] includes communities such as mangroves, seagrass, soft bottom, estuaries), ecosystem functions and provision of goods, services, recreation amenities

and cultural values, (2) sustainable coral reef [and pelagic?] fisheries, and (3) attainment of food security. The Report has suggested that because of the rich marine resources of the CTI region, the Report's provision that transaction cost of running the CT6 program should be much smaller than the projected 3 billion USD fishery income. It has also included recommendation on capability building to overcome the differences in governance and research and adaptive network to address emergent challenges such as the negative effects of the changing climate that is becoming evident in the CTI region. Governance especially should be given top priority for all six countries because these countries differ in governance. For example, nothing can be accomplished in the Philippines if local governments and local communities are not convinced of the effectiveness of proposed governance mechanisms, giving rise to co-management schemes. Whereas in Malaysia, governance is from top to bottom and in Indonesia, both community-based management approaches and strong central government initiatives seem to work, in the other countries, traditional approaches seem to predominate in which community groups make the crucial decisions (e.g. marine protected areas are established for specific purposes and are completely fished during celebrations and special occasions in contrast to permanently established marine reserves of the Philippines). Such temporary closures to fishing do not lead to full recovery of fished areas and export of fishery and biodiversity as well as the basic understanding of the dynamics of marine protected areas. One basic requirement for success of MP As is a governance system acceptable to the dependent stakeholders and relevant government agencies. We have learned that to encourage acceptance of large MPAs by the people, social scientists are needed for activities collectively referred to as community organizing. (Philippine MPAs are generally less than 100 ha probably because only small areas can be adequately protected by stakeholders under a community-based management system. In seascapes, the community-based strategy probably needs to be complemented by other management strategies because of the larger areas of the MPAs.)

The document proposes three higher level, desirable outcomes or Impacts (in the DPISR framework). These outcomes are related or linked to the five goals that are articulated in the National Plans of Action for implementation during the next ten years. Outcomes are evaluated by using appropriate indicators (Section 7.3, pp. 55-71). Section 7.3 discusses the linkages of outcomes to goals. In this connection, it might be useful to use techniques, such as case studies and on-going research programs, where possible, to illustrate certain points for better understanding. For example, research on larval connectivity among individual marine protected areas in networked MP As would serve as relevant examples for sustainability of MP As. By doing this, it becomes easier to track specific developments related to Goal 1 and Goal 3 in each of the six countries.

An important Driver is population. But it is not discussed in the document. This silence is I think due to the controversy surrounding the important role of population in the management of natural resources, but it cannot be ignored. The Population-Health-Environment approach being implemented by the PATH Foundation in the Philippines has been shown to play an important role in the conservation of marine resources and in coastal resource management through the reduction of human pressures on coastal ecosystems and the management and protection of coastal ecosystems.

Another Driver, unsustainable agricultural practices, negatively affects coral reefs through pollution by silt and sediments that are carried down by river systems. These are common observations in the Philippines and probably in other countries of the CT region as well, although the extent of damage to coastal ecosystems by land-based pollution has not yet been determined. It is advised that recommended actions include touching base with agencies concerned with land-based pollution.

The actions that are related to the three outcomes at the national, seascape and regional levels are summarized in Tables 7.10, 7.11 and 7.12. It can be seen that information gaps exist and much needs to be done to complete these tables. My comments on these three tables and succeeding sections follow:

Table 7.10 dealing with sustained coral reef systems and services shows many actions and activities have been made in the past, there are aspects of sustainable coral reefs that have not been accomplished so far. These are the requisite percentage of the total reef system that must be protected in order to be sustainable in terms of reef integrity (biodiversity conservation) and reef ecosystem services (fisheries, nutrient cycling, aesthetic values, recreation, etc.). This percentage of reef is 20-30%. I do not know how much of the reef ecosystems in the six countries are fully protected. For the Philippines only 4 % have varying levels of protection from fishing and other destructive human-related activities since the 1970s. There is a need to upscale reef protection by 16% to reach the minimum 20% standard. It is not known how many of the existing 1000+ marine reserves in the Philippines are fully functional in terms of contributing to the country's fisheries as well as conserving biodiversity outside of marine reserves. We have an idea for a subset of more than 500 marine reserves in the Visayas – only 36% of this number is most likely exporting adult fish and biodiversity to outside fished areas. Our concern is not only adult fish individuals but also fish larvae produced in no-take marine reserves · that will replenish the overfished reefs. This would require networks of fully protected marine reserves, such as that in the Bohol Sea. But this requires that government (national and local) as well as local communities is fully committed to good management of marine protected areas. Good governance where local communities actively participate is essential for success. As far as I know what I have said above remains a gap.

Another requirement for sustainable coral reef sustainability is the duration of time needed for a degraded reef to become a sustainable fishery source. It takes 20 to 40 years in our experience in the Philippines. This period of time will allow the recovery of fish species belonging to all trophic levels normally found on coral reefs. It is assumed that other coral reef species shall have recovered by that time.

It is of interest to note that Great Barrier reefs have increased the fish biomass after only a couple of years of protection from fishing. This is probably because, to begin with, the coral reefs were not degraded and depleted like Philippine coral reefs, so recovery was fast. Our Philippine experience shows this recovery takes a much longer time.

In the Philippines and probably in other CT countries as well, the usual standing biomass of harvestable fish (with low diversity) in coastal areas is very low – about 5-10 and rarely 15-20 tons per km^2. Under this condition one cannot expect substantial catch rates of fishers. By extrapolating based on biomass in excellent reefs with minimal fishing in the past, it is estimated that the fish biomass in near pristine reefs in the 1930s and 1940s was about 100 to 150 tons per km^2. This is about the same amount of fish biomass reported in the Great Barrier Reef prior to the 1970s and by coincidence in the reefs of Kenya.

The biomass of 100-150 tons per km^2 is reached after at least 10 years of full protection, although the full complement of top carnivores requires a longer time – more than 20 years. In summary, it takes decades before coral reefs can recover their biodiversity and fisheries following their degradation. There is evidence that dynamite-blasted reefs also require decades to recover. So plans for coral recovery should take into account the fact that recovery of coral reefs takes decades to fully recover their biodiversity including fishery species, especially the four or five families of top carnivores, which appear to be targeted by fishers because of their high value.

Table 7.10 also recommends that gaps should be closed by monitoring for climate change and for socioeconomics for the CT region. I think all six countries should now implement research programs using current methodologies to determine the resiliency to climate change of various coral reefs in their jurisdictions as a basis for priority in protection as no-take marine reserves. This is especially needed by the Philippines, Indonesia (Sumatra, Java, West Papua) and Malaysia (Sabah), all of which have been identified as the most vulnerable countries in the CT region. Monitoring for socioeconomics has also been recommended. This is especially necessary to determine the potential, sustainable yields of reefs, which in the Philippines has been shown to be between 15 and 20 tons per km^2 per year. For coral reefs used for tourism, the carrying capacity in terms of the number of users allowed per unit time has to be determined empirically with the use of appropriate indicators. Socioeconomic studies of coral reefs used are indeed needed to emphasize the economic and social significance of coral reefs and inspire people to protect them. For example, one reef with an area of 106 hectares attracts some 20,000 visitors per year and earns about 5-6 million pesos annually. Four other less outstanding reefs serving as MPAs in the Philippines also earn smaller amounts from tourism, including the best reef that we have in Tubbataha. The figures I have quoted above pertain to a Philippine marine reserve. I think they can also apply to other coral reefs in the CT region.

Table 7.11 lists actions at the levels of country, seascapes and region but points out a number of gaps at the seascapes and the regional levels. One outstanding action at the seascape level is the protection of marine turtles in the Sulu Sea by Malaysia, Indonesia and the Philippines. This joint protection goes back several decades ago. Beginning in the mid-2000s, marine turtles have been coming back to various southern Philippine islands after their almost complete disappearance in the 1970s. Their coming back was probably due to the national campaign for turtle conservation in the 1980s and 1990s and is a welcome result of advocacy for turtle protection. The mature turtles now seen in beaches, especially marine protected areas, are probably the ones laid as eggs in the 1970s and 1980s and are now returning to their natal sites. The various national actions on sustainable fisheries are the most comprehensive, involving all six countries. The PAWB [Protected Areas and Wildlife Bureau] intervention through integrated coastal resource management directed at fishery species and marine biodiversity in five regions of the Philippines is one of the national actions.

Table 7.12 lists actions directed to attaining food security. Only actions at the national level have been done as of now. Gaps exist at the levels of the seascapes and the whole CT region, and much remains to be done. Food security can only happen if at least 15-20% of coral reefs are fully protected and monitored by both government and local communities. (In the Philippines protection of 15% of coastal areas has been mandated by the Fisheries Code.) A few days ago, the Philippine Department of Agriculture-Bureau of Fisheries announced the setting up of eight areas in the country for the implementation of the Ecosystem Approach to Fisheries. What remains to be done is the strict implementation of the policy.

The number 6 recommendation calls for managing databases. Such databases can provide new baselines, which are necessary these days because of phenomenon of shifting baselines. Baselines in the 1930s and 1940s no longer hold today. Current baselines are needed for monitoring and evaluation of the outcomes and outputs of actions and interventions as well as for determining trends. Baselines should include marine species that have become extinct, such as the *Nautilus pompilius* population in the Tañon Strait between Negros and Cebu, which became extinct in the mid-1980s due to overfishing. There are probably other species that have become extinct in 1999-2000, such as a rare species of cowry and a rare species of

cone shell in the vicinity of Aligway Island in the Bohol Sea, off Zamboanga del Norte because of overexploitation. Some charismatic species such as the whale shark have been subjected to abuse in the name of tourism in southern Cebu in 2012. Some exotic, invasive fish species brought into the Philippines through the aquarium trade have invaded rivers and lakes in the Philippines and are suspected to compete with common freshwater species utilized by people as food. It may be just a matter of time when they will succeed in invading the marine environment. Some baselines and standards for Philippine coral reefs and fisheries are available but more need to be developed.

In general, the recommendations and actions suggested by the document seem reasonable and appropriate for the six countries, and could result in the attainment of the five goals of the CTI region. It is further suggested that they be implemented seriously, for which commitment of the six countries is crucial. As earlier mentioned, many recommendations for the Philippines in the past with regard to marine protected areas and coral reef rehabilitation have not been fully implemented, for example, full protection and scaling up of no-take MP As to reach the minimum 20% (30% is the ideal) of the total area of coral reefs. Since 1974, when the first no-take marine reserve was established, hardly 4% of Philippine coral reefs have been protected despite recent efforts, the most recent initiative being the ICRMP operating in five Philippine regions. Under Philippine conditions, this will require the active collaboration of coastal · communities and local governments, both of which are expected to monitor protected areas for periodic evaluation of expected results of actions and interventions, such as those discussed today. The CTI Regional State Report could well be the final stimulus/inspiration to improve the status of marine protected areas in the CTI region. But the challenge, I think, is in the implementation of the regional plan of action. I hope that the region, because of the efforts that all of us are doing now, will become a shining example of how we can protect coral resources and make our lives better.

2) **Reviewers: Dr. Alan White, TNC; Dr. Catherine Courtney, US CTI; Annick Cros, TNC; and Lauretta Burke, WRI**

Note: This review includes the full text and commentary from Dr. White's presentation at the MEWG Meeting on 22 October 2025 in Jakarta, Indonesia

Contents:

- One of our overriding concerns for the regional report is that we would like to see a better integration of the basic indicators that contribute to the RPOA, so that we can see how the indicators contribute as a major foundation for how we generate the higher level outcomes. The rSCTR needs to firmly integrate the M&E indicators from the RPOA and the M&E system for the CTI. This will provide a solid foundation for tracking progress against the baselines in the CT countries and for devising the CTI index and tracking progress toward the higher level outcomes.
- Each CTI goal description could better reference the M&E indicators that will be used to track progress toward that goal. For example: The indicators set out in the M&E system for the MPA Goal will track establishment of the CTMPAS, area of critical habitats protected within MPAs, areas of critical habitats within no-take areas of MPAs, and level of overall effectiveness of MPAs using an accepted evaluation system.
- The higher level outcomes need to be carefully stated and connected to activities and the 5 goals of the CTI.

More specific comments on Contents:

- Wording on "integrated local threats remain dominant" (not clear) to "Climate is a compounding threat in addition to the immediate severe local threats throughout the region."
- Species maps – There should be some descriptive text to introduce these and explain why they are important. What are the units for species diversity – total species or species per unit area?
- Aquaculture is described as a threat, which to some extent is true, but at the same time, it is probably the biggest source of food security in the region. We need to balance this by talking about aquaculture in relation to food security and, at the same time, talking about minimizing environmental impacts. Aquaculture should be seen as an opportunity to provide food security. Aquaculture as a source of protein is increasing faster than any other source. The costs and benefits of aquaculture must be weighed and environmental impacts minimized.
- Quantification on the existing reefs and their condition can be added as a baseline.
- Economic values could be assigned to attract the attention of policy makers – we have some good values for reefs.
- For food security, the most CTI can do is to improve or stabilize food security derived from marine resources, not "attain food security" – may be changed to "enhance food security."
- It is not clear how the spider diagram points were derived – a bit more explanation will be useful.
- Breakdown into ecological, social and governance in the document is not well connected to earlier analysis,
- EEZ—does this include territorial sea? If so, we could call it "maritime area." The *Reefs at Risk* report has data on maritime data, some data are available on the CT Atlas as well.

Executive Summary – The executive summary should tell the story in two to three pages for a broad audience. Some ideas to do that:

- What are the main messages of the report? This should be clearly presented in the Executive Summary.
- There should be findings and statistics in the Executive Summary.
- Adding basic headings would help.
- A summary needs more structure.
- Does *Reefs at Risk-Coral Triangle* actually say that "50 million poor people are vulnerable"? Since we don't know who is poor, we need to check this against references.
- Decide on categories and then add the key findings.

Mechanics and referencing:

- Referencing is weak in that many current references for the Coral Triangle are not cited (check to see how they can be included).
- References need to be checked, e.g. "Burke, et al in prep," should be "Burke et al 2012," etc.
- Need a few good references on fisheries that could add some statistics and credibility – FISHBASE is a source for species, distribution, etc.
- Show biomass declines to illustrate drastic change in 50 years.
- Need reference for 120 million people getting food and livelihood – this number is often used but without verification, it is suspect.
- Is counting coastal communities along shoreline possible? You may want to do GIS analysis on the number of people living in coastal zone.

Organization – The report is not clearly communicated in terms of order and flow of information. Some suggestions for improvement:

- Prepare a presentation that follows the main messages, key points and findings for each section – this will help with improving the report structure.
- Add some key findings in bold or bullets at the start of section.
- Add more headings and tighten the overall outline.
- Consider using the proposed new outline submitted.
- The report lays out the objectives at the bottom of page 11 and needs to benchmark all of these categories of information.
- The report objectives need to be achieved or changed.

The final point is that the report can be used as a marketing tool that can go to a broad audience so we might think about having, in addition to the larger report, a summary version that is really easy for laypeople to understand because we're aiming for a broad audience and not everyone will be experts in this field. You may want to consider how we are going to do that. The idea is for this report to serve as a sort of a first stage or baseline attempt, to show where we're at and where we can take CTI-CFF forward. It needs to be a clearly communicated document to do that.

3) **Reviewer: Dr. Terry Hughes, James Cook University**

Note: This is an edited transcript of Dr. Hughes's presentation at the MEWG Meeting on 22 October 2025 in Jakarta, Indonesia

The report deals mainly from a governance perspective with institutions, and policies and laws that relate specifically to coral reefs, e.g. laws for the establishment of MPAs and marine parks, but it does not talk about laws for runoff, or land clearing, or fully regulated coastal development. And if you're going to be tackling regional scale fisheries related to coral reefs, you cannot just ignore those issues. So my first point is that although it is widely recognized that there are three drivers that impact reefs, namely, climate change, pollution mainly from land, and overfishing, the report talks extensively only about overfishing, and tends to be quite silent on the other issues. (On a side note, we need to be careful about using words like "threats" or "stresses," because, while NGOs view overfishing as a "stress," other people rely on it for their livelihood.)

I will focus on three different issues that are central to the report, the drivers of change and the regional decline of reefs that are the motivation for new initiatives, as exemplified by the CTI. These issues are:

- *Evaluating the status of coral reefs* – This is critically important because, in order to know how effective our policies and management are, we have to know the trajectory of reefs and the ecosystem services they provide, such as fisheries. We need to get a link between the monitoring process and policy implementation so policy can be adaptive.
- *Design of MPAs* – The report only talks briefly about connectivity – I want to make a couple of points about that.
- *Effectiveness of MPA in fisheries management and building resilient ecosystems* -- The main point I want to make is that MPAs address directly only one of the three drivers that impact coral reefs, that is, the issue of harvested species. They do not deal directly with runoff or climate change.

Evaluating the status of coral reefs. Many of the coral status matrices that we see, like the Global Coral Reef Monitoring Network (GCRMN) that categorizes reefs under different categories, are based on very different types of data that have been amalgamated, but virtually all of the data are fairly recent. Modern monitoring of coral reefs in the Great

Barrier Reef (GBR), for example, began only in 1985, so we have actually missed a lot of the degradation that has occurred historically on our reefs.

A major source of information about coral reef degradation is peer-reviewed scientific literature. The disadvantage of such information source is that the literature are incredibly scattered and most of the studies are for specific locations and for specific short time periods, so you need to read about 1,000 papers published on the Coral Triangle (CT) region to get an overall picture of what is happening there.

Another approach is to undertake systematic monitoring programs, such as Reef Check, which is a volunteer program, or the GBR reef monitoring program.

The *Reefs at Risk* reports and maps, which are cited many times in the rSCTR, can be regarded as yet another type of reef monitoring. A quite different approach is exemplified by the GCRMN – they produce reports every 3-4 years that provide a fairly qualitative accounting on the status of coral reefs in different regions around the world. The information they use comes from a variety of sources ranging from scientific literature and monitoring programs to public opinion and surveys and conversations with tourism operators and other stakeholders. The downside of this approach is that there are many places in the world where the quality of information is not very high and the amount of information is very low.

Based on the most recent GCRMN global report (2008), the GBR has now moved into the "critical" category, with more than 50% coral loss. Such coral loss was recorded only in the last 30-40 years, and it happened in an area that is 33% no-take (the GBR accounts for half of the world's no-take areas, or NTAs). The GCRMN report estimates that 46% of coral reefs globally are at low risk from pollution and overfishing, but even relatively remote reefs are threatened by climate change, coral bleaching and ocean acidification. For example, we looked at Chinese literature published between the 1960s and 1980s for information on the status of coral reefs along the mainland coast of China and the highly disputed territories in South China Sea, an area with big problems in terms of stresses on coral reefs and governance, especially trans-boundary governance. This information has been virtually invisible to the global scientific community because it is published in Mandarin in the gray literature, but we managed to gain access to it through a Chinese connection. What most of the reports tell us is that the Chinese coastline is heavily impacted, as one would expect from the huge number of people that live there, and the Spratly Islands in the fairly remote offshore atolls in the highly disputed territories in South China Sea are generally in the low or medium categories of human impact. But you know that if you go out and collect real data on those reefs, you will find that the reports are not exactly accurate.

The figures reported in global and regional reports are very rubbery, and the reports admit that. They are very open about their figures being guesstimates, because for many locations, even whole countries, there is very little available information that can be compiled to estimate coral reef status at regional and global scales. We have to accept that desktop exercises are really not good substitutes for on-the-ground information at a more local scale. So if I was a reef manager in charge of Spratly Islands, rather than relying on an ocean health index, I would prefer to initiate a coral reef monitoring program that can tell me more directly what management options will effectively give me the results I am looking for.

Almost all of the global and regional reports quantify the trajectory of coral reefs based on coral cover, and this is a real weakness because corals are only one part of the ecosystem. If we are interested in managing reef fisheries, we also need information on the trajectory of the fish. There is really no regional information on fish biomass, which is information on the abundance of fish that is independent of the fisheries. This is a critical issue, because what we

catch is not the same as what is available to catch. A big concern for coral reefs is the phenomenon of fishing down the food chain. As fishing goes down the food chain and start removing herbivores, it can have a big effect on the overall ecosystem by triggering seaweed blooms that can overrun coral reefs. My point is that there is a lot of work to be done in terms of developing national and regional scale monitoring programs that effectively track the status of an ecosystem and allow us to quantify the efficacy of our policy and management options.

Design of MPAs. Citing two studies on connectivity within the Coral Triangle, the rSCTR describes connectivity as an important process and the key reason to manage and govern coral reefs at the regional scale (because larval dispersal is very important biologically). A word of caution I would have is that it is very easy to model connectivity based generally on where the water flows. We have a pretty good handle on hydrodynamics and we know where the currents go at a regional scale, but translating that to where larvae go is another matter altogether. Bear in mind that fish larvae have very different dispersal capabilities from coral larvae. Even corals show different dispersal capabilities – some corals have much shorter dispersal distances than other types of corals. I would be careful about being overly reliant on untested models that make predictions on where the larvae go. I would hesitate to rely solely on these models for making decisions on where to place NTAs. Connectivity is an important consideration in the design of MPA networks, because you want the different components of the network to talk to each other and swap larvae, but we are still a long way from knowing the connectivities for a suite of common species.

It would be useful in the rSCTR to also acknowledge that MPAs mean a lot of different things to different people. The most effective MPAs are the fully protected MPAs, or the NTAs. An MPA that is not an NTA has a very limited capacity to regulate or change the trajectory of an ecosystem. There are many studies that demonstrate the efficacy of NTAs in rebuilding depleted fish stocks but NTAs also offer benefits to the broader seascape, the surrounding area outside the NTAs. In an NTA, fish are able to reach larger sizes and attain their full reproductive potential. The relationship between fish size and reproductive output is not linear but exponential, so a large fish produces disproportionately more offspring than a small fish. And because of the larval duration of fish (about a month), most of the larvae produced inside the NTA are dispersed out, thus benefiting the fishery outside. There is also a flux of adults from the NTA to surrounding areas – this is why fishers can often be seen fishing along the borders of the NTA, where they have a good chance of catching large fish.

One thing that must not be ignored is the dispersal of larvae from the broader seascape into the NTA. Larval dispersal is a two-way flow. Dr. Alcala noted in his review that fish populations in Philippine NTAs take 20-40 years to recover. I think this is because of the extent of resource depletion outside the NTA, which greatly diminishes the supply of larvae for the NTA. On the GBR, the recovery is much faster, with a doubling of fish biomass within three years, and I think this is because the areas surrounding the NTAs are not nearly as degraded.

The point I want to make here is that while proponents of NTAs talk a lot about the export of larvae from NTAs to the surrounding seascape, we need to be careful not to put all our management eggs into one basket by creating networks of NTAs but ignoring the rest of the seascape. If the NTAs are small and they are a long way apart, the vast majority of the seascape is going to be the predominant habitat where people get their livelihood from. So as well as establishing networks of NTAs, we need to also manage the rest of the seascape because the connectivities we consider so important are not just between an NTA and other NTAs in a network but also between the NTA and the fished areas.

Remember also that there are other larvae being dispersed around the seascape in addition to fish larvae. Some of the larvae are good, like fish or coral, but other larvae are not. If the surrounding seascape is degraded, we can expect that the import of larvae into the NTA will include coral diseases, or crown of thorn starfish (COTS), or introduced species that can increase at the expense of protected areas.

A lot of the report talks about status of coral reefs, but if we are broadening our focus from fisheries management to EAFM, we need to consider all the other components of the ecosystem and not just the corals. To my mind, when a coral reef is degraded, not only do we have less corals but we might have more seaweed, less fish, more coral disease, and more COTS outbreaks. We must recognize the connections between the coral habitat and reef-associated fisheries and think more broadly about managing the ecosystem and not just about maintaining high levels of coral cover.

One general comment I have on the report is that the report generally talks about coral reefs as one issue, and fisheries as a separate issue, maybe because in the RPOA, they are stated as separate goals. Also I am often confused by the amalgamation of reef-based fisheries with pelagic fisheries. I think it would make the report clearer if these two fisheries are separated because clearly they are not managed as a single entity – in many parts of the CT, reef-associated fisheries are subsistence fisheries and in contrast, tuna fisheries are generally more industrialized and more offshore, and have a different economic context.

Effectiveness of MPA in fisheries management and building resilient ecosystems. To my mind the role of MPAs is to restore the marine food chain so that reef-associated fisheries can be made sustainable. But MPAs are not a panacea: They cannot solve problems associated with runoff and climate change. This is not as clearly articulated in the rSCTR as perhaps it should be.

To sum up, there are research and information gaps in the rSCTR related to the following issues:

- Developing adaptive monitoring programs aimed at evaluating local management success (or failure) that provides a feedback loop between the management action and monitoring program.
- Understanding how MPAs or MPA networks and non-MPAs interact, bearing in mind that the broader seascape is going to be the predominant area where people get their livelihoods.
- Recognizing that MPAs are not a panacea and that while MPAs are incredibly effective at rebuilding depleted areas and exporting larvae into surrounding fish areas, they do not deal with runoff or climate change.

A4: MINUTES OF THE CTI-CFF MEWG 2ND FORMAL MEETING
Bali Room, Hotel Borobudur, Jakarta, Indonesia, 24 October 2013

TWG members and partners present

Dr. Dirhamsyah (Indonesia)
Ms Ida Devi P.S. (Indonesia)
Mr. Johannes Subijanto (Indonesia)
Mr. Permana Yudiarso (Indonesia)
Mr. Yunanto, R. Rizki Andhitya (Indonesia)
Dr. Connie Fay Komilus (Malaysia)
Dr. Mohamed Zaini Abdul Rahman (Malaysia)
Dr. Norasma Dacho (Malaysia)
Ms Robecca Jomin (Malaysia)
Ms Jasmin Saad (Malaysia)
Ms Luz Teresa Baskinas (Philippines)
Mr. Francisco Torres, Jr. (Philippines)
Ms Lynette Laroya (Philippines)
Ms Agnetha Vave-Karamui (Solomon Islands)
Mr. Fidelino Sousa Marques (Timor-Leste)
Dr. Darmawan (CTI-CFF Regional Secretariat)
Mr. Hendra Yusran Siry (Seascapes WG Regional Secretariat)
Dr. Suseno Sukoyono (CTI-CFF Regional Secretariat)
Mr. Maurice Knight (CTSP)
Dr. Alan T. White (TNC)
Ms Annick Cros (TNC)
Ms Celly Catharina (USAID)
Mr. Renerio Acosta (USAID)
Dr. Catherine Courtney (USCTI-PI)
Ms Nives Mattich (USCTI-PI)
Mr. Peter Collier (USCTI-PI)
Mr. William Jatulan (USCTI-PI)
Ms Lauretta Burke (WRI)

Proceedings

The meeting of the CTI-CFF Monitoring and Evaluation Working Group (MEWG) was hosted by the Philippines and presided by Ms Lynette Laroya, representing the Philippines as MEWG Chair, with Dr. Mohamed Zaini Abdul Rahman representing Malaysiaas co-chair. . The meeting was called to order at 9:15a.m. All six member countries of CTI-CFF were represented.

1. **Background**

This meeting was the 2nd formal meeting of the CTI-CFF MEWG since its formation in 2008. It followed a three-day informal MEWG workshop meeting that was called primarily to prepare for the upcoming 8th CTI-CFF Senior Officials Meeting (SOM8). The workshop did a final review of the Monitoring and Evaluation (M&E) Indicators that the MEWG has developed with inputs from the CTI-CFF thematic working groups (TWG) corresponding to the five goals of CTI-CFF under its 2010-2020 Regional Plan of Action (RPOA). The review was focused on determining how the M&E Indicators link or contribute to the CTI-CFF's desired high level outcomes for coral reefs, fisheries and food security. As well as revising some indicators, the review resulted in the formulation of three draft high level outcome statements that would form part of the CTI-CFF M&E system. These and other outputs, including the national and regional State of the Coral Triangle Reports (SCTR) that were also taken up during the workshop, were the main topics for this meeting.

a. Opening and introductions

The Chair opened the meeting with a short welcome statement, expressing hope that the MEWG would reach an agreement or consensus on "what to report to the forthcoming Senior Officials Meeting." All country representatives introduced themselves.

b. Agenda

The Chair presented the meeting agenda, which was adopted by the body with no opposition. The agenda is shown below as it was presented during the meeting, with some explanatory notes (shown in italics) where appropriate:

1) Approval of the agenda
"Agenda" refers to the agenda for this meeting.

2) Approval of minutes of meeting last April 2012
This agenda item specifically refers to the minutes of the MEWG organizational and 1st formal meeting held in Manila, Philippines on 28 April 2012.

3) Matters arising from the minutes
This agenda item covered any new concerns that may emerge from the consideration of the last meeting's minutes.

4) Preparations for the SOM and decisions to be requested
The main agenda item, this included specific concerns that the MEWG plans to present at SOM8. These were presented to the body as follows:

(i) Endorsement of the outputs of the ME workshop and the CTI-CFF M&E System with provisions for modifications by the respective thematic working going forward
(ii) Full endorsement of the MPA and CCA indicators
(iii) Review and endorsement from TWGs of their respective indicators
(iv) Endorsement of the national and regional SCTRs and frequency of reporting
(v) Enjoining countries for data inputs on the baselines and subsequent reporting through the CT Atlas
(vi) Prepare memo to SOM for endorsement detailing relationship of CTI Secretariat, the CT6 and CT Atlas managed through the WorldFish Center.

5) Roadmap to finalize the rSCTR and M&E System
The roadmap, an output of this week's three-day workshop, includes important tasks that need to be completed before SOM8, as well as actions toward finalizing the rSCTR and operationalizing the M&E System.

6) Other business
This agenda item covered all other concerns that may be brought up during the meeting.

2. **Discussion**

a. Approval of minutes of the last MEWG meeting

On motion by Malaysia, the body approved the minutes with the following amendments:

1) On request by the MEWG Secretariat (Ms Baskiñas), the second sentence under Item 3, "Proposed set of indicators" under "b. Agenda" was amended to read as follows: "The draft indicators were prepared and presented in the SOMs 6 and 7."

2) On Malaysia's (Dr. Dacho) request, Item b, "Election of CTI MEWG Chair and Vice Chair," under "2. Discussion", was amended to read as follows: "The Philippines was elected MEWG Chair and Malaysia as Vice Chair."

The full text of the minutes as amended is shown in Annex **A4a**.

b. Matters arising from the minutes of the last MEWG meeting

1) ***MEWG focal points.*** The Chair reported that, as agreed in the April 2012 MEWG formal meeting in Manila, Malaysia, PNG, the Philippines and Solomon Islands have submitted the names of their focal points for the MEWG. She proposed that official country delegates attending this Jakarta meeting should be considered as the MEWG focal points of their respective countries and that "when we circulate documents, we will address them to you." Her proposal was accepted without opposition.
2) ***Distribution of minutes of MEWG organizational and 1st formal meeting.*** Noting that the minutes of the last MEWG meeting was released as part of the proceedings report on the two-day MEWG workshop meeting held last April 2012, the MEWG Secretariat (Ms Baskiñas) requested that the minutes be distributed as a standalone document. The body concurred, and USCTI PI agreed to facilitate the distribution of a version of the document in the format requested.
3) ***Financing for M&E.*** Malaysia (Dr. Abdul Rahman) requested the Regional Secretariat to approach ADB on behalf of the MEWG about "embedding" M&E in its financing for CTI.

c. Preparations for SOM8 and decisions to be requested

1) ***Memo to SOM8.*** The MEWG Secretariat presented a draft memo to SOM8 for the body's consideration and review. The memo, as approved by the MEWG, is shown in Annex **A4b**. Related to this, the MEWG:
   (i) Tasked the MEWG Secretariat to write the first section of the memo. This section will include background information relevant to the recommendations contained in the memo, including information on the RPOA, previous activities leading to the formulation of the set of indicators, previous meetings and workshops, and SOM decisions related to M&E concerns.
   (ii) Agreed that the rSCTR will be published every four years.
   (iii) Agreed that frequency of publication of the national SCTRs will be decided by the respective countries.
   (iv) Noted the expressed need of Timor-Leste for capacity development assistance in the preparation of their SCTR and contributions to the rSCTR. The Regional Secretariat (Dr. Suseno) said they will "talk to Timor-Leste" on how to address their concerns.
2) ***CTI-CFF M&E system.*** The MEWG Secretariat presented in a schematic table (see Annex **A4c**) the M&E indicators and high-level outcome statements that came out of the three-day MEWG workshop meeting on 22-24 October 2012:
   (i) Noting that the top level outcome (impact) statement needed improvement, the body tasked the MEWG Secretariat (Philippines) to tap the expertise of a social economist to improve the wording of the statement and develop appropriate top level outcome (impact) indicators.
   (ii) The body endorsed the indicators for Goal 2 (ecosystem approach to fisheries management), Goal 3 (climate change

adaptation), and Goal 4 (marine protected areas) for presentation "as final" at SOM8.

(iii) The body agreed to set a deadline (28 February 2013) for the Seascapes and Threatened Species working groups to finish their review of the indicators and submit their comments to the MEWG Secretariat.

3) ***MEWG presentation at SOM8***. The body noted the Regional Secretariat's announcement that the MEWG will be given two hours to do their presentation at SOM8. They agreed that:

(i) The Terms of Reference (TOR) that the MEWG endorsed during their 28 April formal meeting would form part of the MEWG presentation at SOM8.

(ii) The MEWG Secretariat will work with the Regional Secretariat on their presentation at SOM8.

d. Roadmap to finalize the rSCTR and M&E System

The roadmap that was developed during the 22-24 October MEWG workshop meeting was adopted by the body with amendments. The roadmap, as amended at this MEWG formal meeting, is shown in Annex **A4d**.

3. **Other business**

a. Assessment of countries' readiness to use M&E system

The body agreed that:

1) The countries needed to do a self-assessment of their capacity to use the M&E system.

2) The assessment should be done during a workshop to develop the M&E operations manual, which is planned for 31 March 2013.

3) The MEWG will work with the Regional Secretariat, with external assistance if needed, to develop the self-assessment instrument.

b. CTI Partners' Coordination Meeting

The body endorsed the participation of the MEWG Chair at the CTI partners' coordination meeting set for 16-17 January 2013.

4. **Adjournment**

There being no other business, the meeting was adjourned at 11:54pm.

A4a: Minutes of CTI MEWG Organizational and 1st Formal Meeting, 28 April 2012, ADB, Philippines

(As amended and approved by the MEWG at their 2nd formal meeting in Jakarta, Indonesia on 24 October 2012.)

TWG members and partners present

Dr. Dirhamsyah (Indonesia)
Dr. Connie Fay Komilus (Malaysia)
Dr. Norasma Dacho (Malaysia)
Ms Nurul Ainy binti Yahya (Malaysia)
Ms Luz Teresa Baskinas (Philippines/MEWG Secretariat)
Mr. Jacob F. Meiban (Philippines/Chair)
Ms Lynette Laroya (Philippines)
Ms Agnetha Vave-Karamui (Solomon Islands)
Ms RosalieMasu (Solomon Islands)
Mr. Aleixo Leonito Amaral (Timor-Leste)
Dr. Darmawan (CTI Regional Secretariat)
Dr. Alan T. White (TNC)
Mr. Egide Cantin (TNC)
Ms Annabelle Trinidad (ADB/KM)
Ms Jackie Thomas (WWF)
Mr. Patrick Co(WWF)
Ms Dolores Ariadne D. Fabunan (GIZ)
Dr. Maria Beger (UQ)
Mr. John Erick Avelino (DENR-Philippines)
Ms Nora Rombano (DENR-Philippines
Mr. Nygiel Armada (PI)
Mr. William Jatulan (PI)

Proceedings

The meeting of the CTI Monitoring and Evaluation Working Group (MEWG)was hosted by the Philippines and presided by Mr Jacob Meiban, representing the Philippines as *ad hoc* MEWG Chair, with Dr. Darmawan of the CTI Interim Regional Secretariat co-chairing. The six member countries of CTI, except PNG, were represented. The meeting was called to order at 9:19a.m.

1. **Background**

This meeting would be the 1st formal meeting of the CTI MEWG since its formation in 2008. With MEWG members serving on *ad hoc* basis up to this point, it would also serve as an organizational meeting to formalize the group's structure and membership. In addition, it would review the outputs of the 25 March 2012 MEWG informal workshop meeting.

a. **Opening**
The Chair opened the meeting with a short welcome statement, and requested those present to introduce themselves.

b. **Agenda**
The Chair presented the following meeting agenda, which was adopted by the body with no opposition.

1) Review and adoption of draft TOR

(i) Proposed scope, roles and functions of the MEWG. This would cover *Section 1.0.* ***Purpose and Tasks of the MEWG*** **of the draft TOR.**

(ii) Proposed membership and structure. This agenda item was to review *Section 2.0. Membership and Structure* of the draft TOR.

(iii) Proposed operational procedures, requirements and communication protocols of the MEWG. This agenda item referred to the following sections of the draft TOR:

Section 3.0. Program Planning and Coordination
Section 4.0. Administrative Support to the MEWG
Section 5.0. Financial Arrangements

2) ***Election of CTI MEWG Chair and Vice Chair.*** This would formalize the designation of the Chair and Vice Chair.

3) ***Proposed* set *of indicators.*** This included a formal review of a set of draft indicators toward their adoption for endorsement to the SOM by the MEWG acting in their official capacity as a technical working group. The draft indicators were prepared and presented in the SOMs 6 and 7. They were previously revised and updated by the*ad hoc* MEWG and MEWG Resource Team during their informal meeting on 25 April 2012, and then again during a workshop session on 27 April 2012 at the Regional State of the Coral Triangle Workshop (SCTR).

4) ***Proposed list of MEWG-related activities, tasks and roadmap***. A list of proposed activities and tasks toward developing the full CTI M&E system, along with a roadmap for accomplishing them, would be presented for the MEWG's approval.

5) ***Other matters.*** This agenda item covered all other matters that might be brought up by members of the body, including the schedule and agenda of the next MEWG meeting.

2. **Discussion**

a. Review and adoption of draft TOR
Led by the Chair and MEWG Secretariat, the body reviewed and revised section by section the draft TOR from the M&E workshop meeting on 25 April. The full text of the TOR, as amended by the MEWG during this meeting, is shown in Annex 3.3.On motion by Malaysia (Dr. Dacho), the MEWG adopted the TOR, as amended, for endorsement to SOM8.

b. Election of CTI MEWG Chair and Vice Chair
The Philippines was elected MEWG Chair and Malaysia as Vice Chair.

c. Review of proposed set of indicators
The body reviewed and revised the indicators and agreed to (1) officially endorse the indicators, as amended and annotated, to the five thematic working groups of CTI-CFF, and (2) formally request the respective thematic working groups and resource teams to provide the appropriate description for each indicator. The full text of the draft indicators, as amended and annotated by the MEWG during this meeting, is shown in Annex 3.4.

d. **Proposed list of MEWG-related activities and tasks and roadmap**
The proposed activity/task list was adopted by the body, as amended (revisions are shown below in red text – additions are bolded, deletions are shown crossed-out; annotations are highlighted in yellow):

MEWG Activity/Task List

April 2012 – Present MEWGConcept Proposal to the CTI-CFF High Level Financial Roundtable to be hosted by Asian Development Bank (ADB) on May 2-5, 2012

May 2012 – Present Goal 2 indicators at the EAFM Regional Exchange in Malaysia

June 2012 – Formulate mechanism to complete M&E system (Note: USCTI to provide technical assistance)

July 2012 – Finalize list of indicators and descriptions and submit to CTI Interim Regional Secretariat for dissemination to the CT6, possibly at the launching of the SCTR at the ICRS (Cairns, Australia)

Sep 2012 – Prepare MEWG annual work plan and financial plan for presentation to SOM8

3. **Other Matters**

a. Next MEWG meeting

The body agreed to meet again in September 2012 to prepare for their presentation of the full CTI M&E system and final list of indicators to SOM8. No decision was made on whether the meeting would be virtual or face-to-face, although the Secretariat pointed out that the MEWG planned for only one face-to-face meeting every year.

i. ***Host.*** The Solomon Islands (Ms. Vave-Karamui) formally requested the Philippines, as MEWG Chair, to host the meeting; the Chair noted the request and asked the Secretariat to coordinate on the matter with NCC-Philippines.

ii. ***Agenda.*** USCTI Lead for MEWG Dr. White suggested that the MEWG might consider, as a discussion point in their correspondence leading up to their proposed September 2012 meeting, the possible role of the MEWG in the management of M&E information system. He recommended that this additional role should be spelled out in the MEWG TOR and could be officially taken up in the next meeting. The Regional Secretariat concurred.

b. MEWG country focal points

The Co-Chair reminded the countries to submit the names of their respective focal points to the MEWG; the MEWG Secretariat will follow up on this request. The Solomon Islands (Ms Vave-Karamui) indicated that their previously named focal points are still current.

c. MEWG Concept Proposal to the HLFR

The Philippines presented a concept proposal for the CTI-CFF High Level Financial Roundtable hosted by the Asian Development Bank (ADB) on 3 May 2012. The proposal was for USD550,000 funding to support the development of the CTI M&E system, specifically: (1) Technical assistance to the MEWG in developing the M&E system; (2) Regional workshop to validate/ enhance the M&E system and process framework and developing communication messages; and (3) Development and production of IEC materials.

i. The Chair instructed the MEWG Secretariat to note down, for consideration in future discussions with donors, Indonesia's (Dr. Dirhamsyah) suggestion that the proposal should include country allocations to enable each country to collect primary data for the M&E system.

ii. The MEWG Secretariat pointed out that the technical assistance requested under concept proposal for the HLFR included a needs-and-resources assessment to guide priorities for subsequent technical assistance proposals.

4. **Adjournment**

There being no other business, the meeting was adjourned at 12:10pm.

A4b: Decision Memo to SOM8

(As endorsed by the MEWG at their 2nd formal meeting in Jakarta, Indonesia on 24 October 2012)

Decision on the CTI-CFF Monitoring and Evaluation (M&E) System

Background

- RPOA
- Previous activities leading to the formulation of the set of indicators
- Previous meetings and workshops
- SOM decisions related to M&E concerns

Recommendations

Based on the outputs of the MEWG from two regional workshops held in April and October 2012, in collaboration with the CT6 countries and thematic working groups, the MEWG recommends the following to the SOM 8 Senior Officials for consideration:

1. To note that the MEWG has developed its Terms of Reference and further noted the Philippines is the current MEWG Chair and Malaysia is the Vice-Chair

2. To note the significant progress of the Monitoring and Evaluation Working Group (MEWG) in developing the CTI-CFF M&E System;

3. To endorse the outputs of the M&E workshops and adoption of the CTI-CFF M&E System as presented by MEWG with provisions for modifications by the respective thematic working going forward as needed;

4. To recognize the CT ATLAS as integral to the implementation of the CTI-CFF M&E System and as such enjoined countries to submit data to the CT ATLAS. The countries are encouraged to finalize its MOUs for sharing data with CT Atlas.

5. To note the National SCTRs and endorse the publication of the 2012 Regional State of the Coral Triangle Report. The next publication of Regional SCTR will be in 2016

6. To request the development partners' assistance to the MEWG through the CTI-CFF Secretariat to develop the M&E Information System and provide capacity-building support to the CT6 to use and mainstream the system.

A4c: Schematic table of CTI-CFF Monitoring & evaluation indicators

(as presented at the Jakarta MEWG formal meeting on 24 October 2012 and endorsed by the MEWG "with provisions for modifications by the respective thematic working groups going forward as needed")

IMPACT: Improvement in the affordability, availability and quality and safety of food coming from coastal and marine

availability: food sufficiency of fishing household; food consumption of coastal communities
quality and safety: contribution of fish to protein requirement, health of fishing communities
affordability: income of fishers, price *(note: add community resiliency or social well-being element)*

OUTCOME: Coral reef ecosystem integrity and services stabilized / maintained *(add social component)*		**OUTCOME: Fish stocks improved and sustained *(add social component)***		
Condition of coral reef Extent of mangroves and seagrass Fish biomass Extent of coral reef and associated habitats in full protected areas		Change in conservation status (international) of commercially important fish species (coastal and pelagic) Change in catch per unit effort (CPUE) by gear Change in species composition relative to trophic level Change in size distribution by fish species Change in exploitation status for pelagic and other species		
Number/area (in sq km) of priority seascapes under continuous improved management	Percent change in average income (fishing and non-fishing) of coastal households by profession compared to baseline Percent change in poverty and food threshold of coastal households by livelihood compared to baseline Percent change in poverty and food threshold of coastal households by livelihood compared to baseline Stable price of fish Percent contribution of fish to protein requirements Change in conservation status of tuna and live reef fish Number and area (sq km) of locally managed areas for live reef fish trade	Percent/Area of total marine habitat area in CT region in marine protected or managed areas Percent/area of each major marine and coastal habitat type in strictly protected "no-take replenishment zones" Percent/Area (in sq km) of marine protected areas under "effective" management	Percentage of local governments that have integrated climate adaptation into local governance (plans and actions) ~~Area Hectares of mangrove restored, protected or managed~~	Number of threatened species with improved status (to be decided by CTI as a body or by a forum designated by the CT6 according to IUCN-red list criteria assessment or other criteria to be determined by CTI)
Number of priority seascapes designated with investment plans Value (in US$) of funding secured from per type of fund source Coordinating body for each "priority seascape" established to guide, monitor and track efforts in the seascape/s	Number of policies and regulations promoting EAFM at regional and national levels with regulatory framework and budget allocated for their operationalization Number of projects and programs addressing EAFM Number of policies and agreements by CT6 countries for management of tuna Number of countries adhering to markets/certification standards of tuna fisheries agreed upon by CT6 countries Number of policies and agreements /legislation adopted on live reef fish trade among CT6 to decrease level of destructive fishing practices linked to the trade Number of countries adhering to markets/certification (live reef fish and ornamental fisheries) agreed by CT6	CTMPAS Framework developed and adopted by CT6 Percent/Area of marine protected/ managed areas included in CTMPAS	Number of new policies or agreements adopted at the regional, national and local levels that are in compliance with the international agreements on threatened species Area of protected marine habitat that contributes to conservation of threatened and endangered species protected	Number of new policies or agreements adopted at the regional, national and local levels that are in compliance with the international agreements on threatened species Area of protected marine habitat that contributes to conservation of threatened and endangered species protected
Priority Seascapes Designated and Effectively Managed "Priority Seascapes" designated, with investment plans complemented/ sequenced Marine and coastal resources within all "Priority Seascapes" are being sustainably managed	Ecosystem approach to management of fisheries and other marine resources is fully applied Strong legislative, policy and regulatory frameworks in place for achieving an ecosystem approach to fisheries management Improved income, livelihoods and food security of people in coastal communities across the region Effective measures in place to help ensure exploitation of shared tuna stocks is sustainable, with tuna spawning areas and juvenile growth stages adequately protected A more effective management and more sustainable trade in live-reef fish and reef-based ornaments achieved	Marine Protected Areas (MPAs) Established and Effectively Managed Region-Wide Coral Triangle MPA System (CTMPAS) in place and fully functional	Climate Change Adaptation Measures Achieved Region-wide early action for climate adaptation plan for the near-shore marine and coastal environment developed and implemented Networked national centers of excellence on climate change adaptation for marine and coastal environments are established and in full operation	Threatened Species Status Improving Improved status of sharks, sea turtles, marine mammals and other identified threatened species

A4d: MEWG Roadmap, November 2012-May 2013

(As approved by the MEWG at their 2nd formal meeting in Jakarta, Indonesia on 24 October 2012)

Tasks	Next Steps/Activities	Timeframe	Responsible Entities
A. Completion of rSCTR	1. External reviewers to send comments[1]	End of Oct	Terry, Angel
	2. Team to incorporate comments	Nov 15	KM team
	3. Presentation to the SOM of SCTR highlights	Nov 19-23	KM team
	4. Send to countries for final review	Nov 30	KM team
	5. Copy editing	Dec 25	ADB
	6. Publication	Jan 31	ADB
B. Completion of M&E System (minus the TWGs which have not endorsed its indicators)	1. Finalize the workshop report (short version)	Nov 6	Ciony
	2. Package workshop outputs and send to countries and TWGs	Nov 6	M&E WG Chair
	3. Review[2] by countries (country M&E focal points) and TWGs	Nov 16	Country M&E Focal Point
	4. Incorporate comments from countries and TWGs	Nov 20	M&E WG Chair
	5. Final document for presentation to SOM	Nov 20	M&E WG Chair
	6. Participate in the Partners' Coordination Meeting	Jan 16-17	M&E WG Chair
	7. Draft and circulate M&E operations manual to CT6 based on country's capacity and resources	Feb 1	M&E WG Chair
	8. TWGs (Seascapes and Threatened species) to review and refine its indicators	Feb 28	Respective TWGs
	9. Conduct a workshop to develop the M&E operations manual and implementation plan (including assessment of country's capacity)	Mar 31	M&E WG Chair
	10. Finalize the M&E operations manual	April 30	M&E WG Chair
	11. Conduct a regional training to operationalize the M&E system using the operations manual	May 31	

[1] MEWG to provide the SCTR team with Outcome and Impact Indicators as input to the final Regional SCTR during the review

[2] Include scanning the country's capacity and resources to implement the CTI M&E System as basis for developing the M&E manual

A5: TABLES OF BASIC COUNTRY CHARACTERISTICS

INDONESIA

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters	0.3 million km^2	Total marine water area (including EEZ)	2.7 million km^2	Data from FAO country profile	ok
Exclusive economic zone	2.7 million km^2				ok
Land area	1.9 million km^2	Land area	1.9 million km^2	Data from FAO country profile	ok
Total coral reef area	51,000 km^2	Coral reef area	51,000 km^2	Spalding *et al.*, 2001	ok
Total mangrove area[a] Mangrove area under protection[b]	[a]35,337 km^2 [b]----------	Mangrove area	[a]42,600 km^2	Spalding *et al.*, 2001	Values are near. Please check.
Total seagrass area	30,000 km^2				ok
Total coastline	108,800 km	Length of coastline	81,000 km^2	FAO	please check
Total sea area	5,800,000 km^2				ok
Continental shelf area		Shelf area (to depth 200 m)	2,700,000 km^2	FAO	consider suggestion
Number of coral species	590	Number of coral species	574	Veron, 2009	ok
Number of mangrove species	101	Number of mangroves species	45	Spalding *et al.*, 2001	please check
Number of seagrass species	13	Number of seagrass species	13	Spalding *et al.*, 2001	ok
Number of fish species					add data
Number of coral reef fish and associated species	2,057	Number of coral reef fish and associated species	2,122	Allen, 2008	ok

INDONESIA

SOCIOECONOMIC					
Population	238 million (2010)	Population	234.2 million (2010)	ADB	ok
Fish consumption per capita	19 kg	Fish consumption (Average 2005-07)	23.36 kg/person/yr	Data from FAO	ok
Fish to protein consumption	60 %	Fish/Animal proteins (2007)	52.5 %	Data from FAO	ok
Total landed catch	5,384,740 tons (2010)	Fish production from marine areas	4,818,465 tons	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	ok
Mean annual population growth rate		Population growth rate	1.2 % (2010)	ADB	consider suggestion
Fisher population		Estimated employment - Primary sector (including aquaculture)	5 193 445 (2005 data)	FAO	Consider suggestion. Suggested data may be under-estimate.
		People employed in fishing and aquaculture (number)	5,118,571 (year 2000)	World Resources Institute	
Population at coastal areas (within 10 km)		Population living within 10 km of a coastline	65,327,100 (28%)	Center for International Earth Science Information Network (CIESIN) (2007)	consider suggestion
GDP per capita		GDP (PPP) per capita in international $ (2010)	4,411	ADB	consider suggestion

MALAYSIA

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters	63,666 km^2	Total marine water area (including EEZ)	418,000 km^2	Data from FAO country profile	ok
Exclusive economic zone	453,186 km^2				ok
Land area	329,847 km^2	Land area	329,758 km^2	Data from FAO country profile	ok
Total coral reef area	4,000 km^2	Coral reef area	3,600 km^2	Spalding *et al.*, 2001	ok
Total mangrove area[a] Mangrove area under protection[b]	[a]5,750 km^2 [b]----------	Mangrove area	[a]6,400 km^2	Spalding *et al.*, 2001	ok
Total seagrass area	3 km^2				Please check. Too small.
Total coastline	4,809 km	Length of coastline	4,810 km	FAO	ok
Total sea area	614,159 km^2				ok
Continental shelf area	476,762 km^2	Shelf area (to depth 200 m)	450,000 km^2	FAO	ok
Number of coral species	550	Number of coral species	540	Veron, 2009	ok
Number of mangrove species	41	Number of mangroves species	36	Spalding *et al.*, 2001	ok
Number of seagrass species	14	Number of seagrass species	12	Spalding *et al.*, 2001	ok
Number of fish species					Input a value
Number of coral reef fish and associated species	600+	Number of coral reef fish and associated species	1549	Allen, 2008	Please check

MALAYSIA

SOCIOECONOMIC					
Population	28.3 million (2010)	Population	28.3 million (2010)	ADB	ok
Fish consumption per capita	56 kg	Fish consumption (Average 2005-07)	51.1 kg/person/yr	Data from FAO	ok
Fish to protein consumption		Fish/Animal proteins (2007)	43.8 %	Data from FAO	consider suggestion
Total landed catch (tons)	1,428,881 tons (2010)	Fish production from marine areas	1,506,296 tons	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	ok
Mean annual population growth rate	2.0 % (2000-2010)	Population growth rate	1.3 %	ADB	
Fisher population	144,424 (2011)	Estimated employment - Primary sector (including aquaculture)	111 000 (2006 data)	FAO	OK. Close to FAO and WRI estimates
		People employed in fishing and aquaculture (number)	100,666 (year 2000)	World Resources Institute	
Population at coastal areas (within 10 km)		Population living within 10 km of a coastline	8,813,930 (32 %)	Center for International Earth Science Information Network (CIESIN) (2007)	consider suggestion
GDP per capita		GDP (PPP) per capita in international $ (2010)	14,771	ADB	consider suggestion

PAPUA NEW GUINEA

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters	3,120,000 km2 (incl. eez)	Total marine water area (including EEZ)	3,120,000 km2	Data from FAO country profile	ok
Exclusive economic zone					add value
Land area	460,000 km2	Land area	462,243 km2	Data from FAO country profile	ok
Total coral reef area	40,000 km2	Coral reef area	13,800 km2	Spalding *et al.*, 2001	please check
Total mangrove areaa Mangrove area under protection	a---------- b4,586 km2	Mangrove area	5,400 km2	Spalding *et al.*, 2001	consider suggestion
Total seagrass area					add data
Total coastline	17,110 km (Sowei et al. 2002) 20,197 (Earth Trends 2003)	Length of coastline	17,000 km2	FAO	Choose only 1. Sowei et al. 2002 estimate consistent with FAO
Total sea area	3,120,000 km2				ok
Continental shelf area		Shelf area (to depth 200 m) (km2)			add value
Number of coral species	600	Number of coral species	514	Veron, 2009	ok
Number of mangrove species	35	Number of mangroves species	44	Spalding *et al.*, 2001	please check
Number of seagrass species	7	Number of seagrass species	7	Spalding *et al.*, 2001	ok
Number of fish species	3,000				ok
Number of coral reef fish and associated species		Number of coral reef fish and associated species	1635	Allen, 2008	consider suggestion

PAPUA NEW GUINEA

SOCIOECONOMIC					
Population	6 million (2009)	Population	6.35 million (2009) 6.49 million (2010)	ADB	ok
Fish consumption per capita		Fish consumption (Average 2005-07)	13 kg/person/yr	Data from FAO. Data for PNG from Bell et al. (2009). *Fish consumption for Timor-Leste from Hoegh-Guldberg et al. (2009)	consider suggestion
Fish to protein consumption		Fish/Animal proteins (2007)	12.9 %	Data from FAO	consider suggestion
Total landed catch (tons)		Fish production from marine areas	216,361 tons	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	consider suggestion
Mean annual population growth rate	2.43% (2001)	Population growth rate	2.2 % (2010)	ADB	ok
Fisher population		People employed in fishing and aquaculture (number)	16,000 (year 2000)	World Resources Institute	WRI estimate is for year 2000 International fleets have higher fishing pressure
Population at coastal areas (within 10 km)		Population living within 10 km of a coastline	1,612,080 (23%)	Center for International Earth Science Information Network (CIESIN) (2007)	consider suggestion
GDP per capita		GDP (PPP) per capita in international $ (2010)	2,577	ADB	consider suggestion

PHILIPPINES

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters	2,000,000 km^2 (incl. eez)	Total marine water area (including EEZ)	2,200,000 km^2	Data from FAO country profile	ok
Exclusive economic zone					add value
Land area	300,000 km^2	Land area	301,000 km^2	Data from FAO country profile	ok
Total coral reef area	26,000 km^2	Coral reef area	25,800 km^2	Spalding *et al.*, 2001	ok
Total mangrove areaa Mangrove area under protection	2,472 km^2 (2005)	Mangrove area	1,600 km^2	Spalding *et al.*, 2001	please check
Total seagrass area	978 km^2				ok
Total coastline	37,008 km	Length of coastline	17,460 km		please check
Total sea area	2,000,000 km^2				ok
Continental shelf area		Shelf area (to depth 200 m)	184,600 km^2		consider suggestion
Total mangrove area under protection					add value
Number of coral species	~500	Number of coral species	533	Veron, 2009	ok
Number of mangrove species	42	Number of mangroves species	30	Spalding *et al.*, 2001	please check
Number of seagrass species	16	Number of seagrass species	19	Spalding *et al.*, 2001	ok
Number of fish species	3,053				ok
Number of coral reef fish and associated species	1,658	Number of coral reef fish and associated species	1790	Allen, 2008	ok

PHILIPPINES

SOCIOECONOMIC					
Population	92.1 million (2009)	Population	92.2 million (2009) 94 million (2010)	ADB	ok
Fish consumption per capita		Fish consumption (Average 2005-07)	32.49 kg/person/yr	Data from FAO. Data for PNG from Bell et al. (2009). *Fish consumption for Timor-Leste from Hoegh-Guldberg et al. (2009)	consider suggestion
Fish to protein consumption		Fish/Animal proteins (2007)	44.7 %	Data from FAO	consider suggestion
Total landed catch (tons)		Fish production from marine areas	2,539,328 tons	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	consider suggestion
Mean annual population growth rate	1.9% (2011)	Population growth rate	1.9 % (2010)	ADB	ok
Fisher population		Estimated employment - Primary sector (including aquaculture)	2 009 000 (2002 data)	FAO	Value from FAO is still for years 2002.
		People employed in fishing and aquaculture (number)	990,872 (year 2000)	World Resources Institute	
Population at coastal areas (within 10 km)	55.26 million (60%)	Population living within 10 km of a coastline	44,119,800 (47%)	Center for International Earth Science Information Network (CIESIN) (2007)	
GDP per capita		GDP (PPP) per capita in international $ (2010)	3,923	ADB	consider suggestion

SOLOMON ISLANDS

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters		Total marine water area (including EEZ)	1,340,000 km^2	Data from FAO country profile	
Exclusive economic zone					
Land area	28,000 km^2	Land area	28,370 km^2	Data from FAO country profile	ok
Total coral reef area	3,591 km^2 (NPOA 2010)	Coral reef area	5,800 km^2	Spalding *et al.*, 2001	please check
Total mangrove area[a] Mangrove area under protection[b]	[a]65,000 ha (650 km^2)	Mangrove area	600 km^2	Spalding *et al.*, 2001	ok
Total seagrass area	10,000 ha (100 km^2)				ok
Total coastline	4,000 km	Length of coastline	4,270 km		ok
Total sea area	1,340,000 km^2				ok
Continental shelf area		Shelf area (to depth 200 m)	0 km^2		consider suggestion
Number of coral species		Number of coral species	507	Veron, 2009	consider suggestion
Number of mangrove species	26	Number of mangroves species	22	Spalding *et al.*, 2001	ok
Number of seagrass species	10	Number of seagrass species	3	Spalding *et al.*, 2001	please check
Number of fish species					add value
Number of coral reef fish and associated species		Number of coral reef fish and associated species	1371	Allen, 2008	consider suggestion

SOLOMON ISLANDS

SOCIOECONOMIC					
Population	550,000 (2011)	Population	528,000 (2010)	ADB	ok
Fish consumption per capita	33 kg/year (90% fresh fish)	Fish consumption (kg/person/yr) (Average 2005-07)	31.03 (33 from Bell et al. 2009)	FAO	ok
Fish to protein consumption		Fish/Animal proteins (2007)	75.7 %	Data from FAO	consider suggestion
Total landed catch (tons)		Fish production from marine areas	27,956	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	consider suggestion
Mean annual population growth rate	2.3 % (2009)	Population growth rate	2.3 % (2010)	ADB	ok
Fisher population		Estimated employment - Primary sector (including aquaculture)	5,114 (2004 data)	FAO	consider suggestion Please check. Suggested values may be under-estimate.
		People employed in fishing and aquaculture (number)	11,000 (year 2000)	World Resources Institute	
Population at coastal areas (within 10 km)		Population living within 10 km of a coastline	452,329 (84 %)	Center for International Earth Science Information Network (CIESIN) (2007)	consider suggestion
GDP per capita		GDP (PPP) per capita in international $ (2010)	2,264	ADB	consider suggestion

TIMOR-LESTE

BIOPHYSICAL					
SCTR		SUGGESTED VALUES FROM OTHER SOURCES		NOTES	
Territorial waters		Total marine water area (including EEZ)	72,000 km^2	Data from FAO country profile	add value
Exclusive economic zone	77,256 km^2				Ok
Land area	14,874 km^2	Land area	14,919 km^2	Data from FAO country profile	Ok
Total coral reef area	146 km^2	Coral reef area	800 km^2	Spalding *et al.*, 2001	please check
Total mangrove area[a] Mangrove area under protection[b]	[a]18 km^2 [b]--------	Mangrove area	1,500 km^2	Spalding *et al.*, 2001	please check
Total seagrass area	22 km^2				Ok
Total coastline	706 km^2	Length of coastline	730 km^2		Ok
Total sea area					add value
Continental shelf area		Shelf area (to depth 200 m)	25,648 km^2	FAO	consider suggestion
Number of coral species		Number of coral species	514	Veron, 2009	consider suggestion
Number of mangrove species					add value
Number of seagrass species					add value
Number of fish species					add value
Number of coral reef fish and associated species		Number of coral reef fish and associated species	1500	Allen, 2008	consider suggestion

TIMOR-LESTE

SOCIOECONOMIC					
Population	1.1 million	Population	1.07 million (2010)	ADB	Ok
Fish consumption per capita		Fish consumption (kg/person/yr) (Average 2005-07)	10*	Hoegh-Guldberg et al. (2009)	consider suggestion
Fish to protein consumption or Fish/Animal proteins					add value
Total landed catch (tons)		Fish production from marine areas	3125 tons	2009 data from FAO. Excluded are aquatic plants and animals and fishes from inland waters.	consider suggestion
Mean annual population growth rate		Population growth rate	2.6 % (2010)	ADB	consider suggestion
Fisher population		Estimated employment - Primary sector (including aquaculture)	7600	FAO	add value Please check. FAO value may be an underestimate.
Population at coastal areas (within 10 km)		Population living within 10 km of a coastline	626,358 (53 %)	Center for International Earth Science Information Network (CIESIN) (2007)	consider suggestion
GDP per capita	US$469	GDP (PPP) per capita in international $	874 (2009 data)	ADB	please check

A6: PROPOSED HIGH-LEVEL OUTCOME STATEMENTS FOR THE CTI-CFF AND CORRESPONDING INDICATORS (outputs from the 23 October 2012 breakout sessions at the MEWG Workshop Meeting in Jakarta, Indonesia)

CORAL REEFS

Proposed outcome: Stabilize and maintain coral reef ecosystem integrity and services to ensure that reef-related fisheries and other economic and cultural benefits of coral reef systems contribute to the well-being of coastal communities and the larger society.

Proposed indicators (1)

	IND	MAL	PNG	PHL	SOL	TL	Total
*Extent of coral reefs (to provide context)							
Condition of coral reef (2)	5	5	5		5		20
Extent of mangroves and seagrass (3)	4	5	3		5		17
Fish biomass (4)	3	4	4		5		16
Extent of coral reef and associated habitats in full protected areas	4	3	5		3		15
Change in mangroves and seagrass cover	3	4	3		4		14
Tourism (5)	4	4	4		2		14
Protection services	4	5	2		3		14
Education services and research	4	4	3		3		14

Notes:

(1) Indicators were ranked according to feasibility and relevance, 1 being the least feasible/relevant and 5 the most feasible/relevant. From the 9 indicators, the group selected four indicators that should be given priority when collecting resource data to measure ecosystem and benefits. The priority indicators are shown in bold text. Fish biomass is a new indicator added to the initial list of indicators.

(2) "Condition of coral reef" is not necessarily an indicator but may be a baseline (specifically for hard corals and other benthic cover) to provide context to management. The measurements for this may be site-based and aggregated or provided as a range of values.

(3) Coral reef ecosystem is defined here as also including seagrass and mangrove areas, important habitats that are closely related to the coral reef ecosystem. Dr. Gomez (UPMSI) suggested that to avoid confusion about terminologies, an introductory statement should explain that unless otherwise specified, the term "coral reef ecosystem" in the CTI-CFF context includes coral reefs, mangroves and seagrass.

(4) Fish biomass specifically refers to biomass related to coral reefs. It should be calculated using fisheries-independent data that are collected through visual census or other methods.

(5) On tourism, the metric for economic benefits and impact can be (a) the number of tourists or resort operators that depend on the resource (coming up with the numbers e.g. in terms of jobs generated etc.) is very useful to convince politicians to protect the reef) and (b) alternative livelihoods (number of fishers involved in tourism).

(6) Other priorities not in the top 4 can be done by various agencies as part of their monitoring and will be dependent on capacity and data availability

FISHERIES

Proposed Outcome: Fish stocks improved and sustained (coastal and pelagic fisheries)

Proposed indicators

DPSIR	Spatial	Who Measures *Who Reports*	Means to Verify	Freq	Cost	Regional Baseline	National Baseline
Indicator 1. Change in conservation status (international) of commercially important fish species (coastal and pelagic)							
S	No	Fisheries Ministries *Fisheries Ministries to IUCN*	IUCN	Periodic	May need cost for countries not reporting yet	N/A	N/A
Indicator 2. Change in catch per unit effort (CPUE) by gear							
S	National and by fishery management unit	Fisheries Ministries *Fisheries Ministries*	National Stock Assessment Program	Annual	May cost for countries not reporting yet	N/A	2009
Indicator 3. Change in species composition relative to trophic level							
S	National and by fishery management unit	Fisheries Ministries *Fisheries Ministries*	National Stock Assessment Program	Annual	May cost for countries not reporting yet	N/A	2009
Indicator 4. Change in size distribution by fish species							
S	National and by fishery management unit	Fisheries Ministries *Fisheries Ministries*	National Stock Assessment Program	Annual	May cost for countries not reporting yet	N/A	2009
Indicator 5. Change in exploitation status for pelagic and other species (E = F/Z)							
P	National and by fishery management unit	Fisheries Ministries *Fisheries Ministries*	National Stock Assessment Program	Annual	May cost for countries not reporting yet	N/A	2009
Indicator 6. Change in number of reported illegal and unreported activities							
P	National	Fisheries Ministries *Fisheries Ministries*			Cost to all countries, not currently reported		

Notes:

1) The first column refers to the DPSIR framework for state of environment reporting.
2) "Species" as used in the table above refers to all species from coastal to oceanic, whether demersal or pelagic.
3) Because many countries are not using maximum sustainable yield (MSY), CPUE is suggested as a proxy measure of biomass "to give an indication of how the system is performing."
    a. Dr. Dirhamsyah (Indonesia) pointed out that using CPUE to measure biomass of a fishing area may not be accurate because fishers who live in the locality and are expected to fish there may actually be fishing in other areas (e.g. some fishers in Java get their fish from the Indian Ocean).

b. Dr. Alcala suggested that a good way to measure biomass through CPUE is to track the catch of fishers using hook-and-line. "We have observed in the Philippines that CPUE in areas far from MPAs is about 0.4kg-0.5kg per fisher per hour, and near MPAs, it is between 1.5kg and 2 kg, which is indicative of improved biomass around MPAs," he said.

4) All indicators except Indicator 1 are "new" indicators for measuring high-level outcomes for fisheries not previously listed in the table of indicators developed and endorsed by the MEWG at their meeting in Manila last April 25 and 28, 2012.

FOOD SECURITY

Proposed Outcome: Improvement in the affordability, availability and quality and safety of food coming from coastal and marine

Indicator	**Feasibility** (1)
Availability	
Food sufficiency of fishing households	Sol (H); PNG (M); PHI (H); TL(H); INO (L), MAL(M)
Food consumption of coastal communities	INO,(H); MAL (M), Sol, (M); PI(H); PNG (M), TL (L)
Biomass (2)	
Quality and safety	
Contribution of fish to protein requirement	
Health of fishing communities	
Affordability	
Income of fishers	
Price	

Notes:

1) Dr. Darmawan (Regional Secretariat) explained that the elements of food security listed above, namely availability, quality and safety, and affordability, are the elements common to all the CTI countries' otherwise different definitions of food security. The term "availability" refers to the availability of food from the primary food source (i.e. natural resource) found within each country and relates directly to the sustainability of that resource; it does not include availability in the market or other sources. "Affordability" has yet to be clearly defined, and other elements of food security, such as accessibility, were discussed but are not included for now. These terms need to be defined, ideally with the help of a social economist.
2) "Feasibility" refers to a country's capacity to track an indicator, rated here from "H" (high) to "L" (low).
3) "Biomass" as used in this table refers to reef-associated fish biomass. Mr Francisco Torres Jr. (Philippines) suggested that CPUE can be used as a proxy measure of biomass and may in fact be the appropriate measure in this case where the main concern is fish availability. CPUE directly measures fish catch and gives an indication of fish availability, as well as fishers' income and well-being. With CPUE, the fishing effort needed to generate a given volume of fish can also be tracked.

A7: ANNOTATED CTI-CFF M&E INDICATOR TABLES (as amended by the MEWG at their workshop meeting in Jakarta on 22-24 October 2012)

Goal 1 – Priority seascapes designated and effectively managed (1)

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports? (2)	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
1.1.1 Number of priority seascapes designated with investment plans (3)										
Output	1,2	Retain	no	Seascapes TWG	NCC	Copy of the management plan or other related document	bi-annual	1$	1	6 of 12-Indonesia; 2 of 6 -Philippines;
1.2.1 Number of priority seascapes under continuous improved management (4)										
Outcome	1,2,3,4	Retain	no	Reports	NCC	Copy of document	bi-annual	?$	1	6 of 12-Indonesia; 2 of 6 -Philippines;
1.2.2 Value (in US$) of funding secured per type of fund source										
Output	1,2,3.4	Retain	no	Seascapes TWG	NCC	copy of funding agreements specifying the value and the financial reports	bi-annual	1$	TBD	TBD
1.2.3 Coordinating body for each "priority seascape" established to guide, monitor and track efforts in the seascape/s										
Output	1,2,3,4	Retain	no	Seascapes TWG	NCC	Copy of document	bi-annual	1$	1	2 of 6-Indonesia;

Notes:

(1) These indicators will be referred to the Seascapes TWG for review and refinement.
(2) For seascapes that span two or more countries, will there be a coordinating body for seascapes that will report to the TWG?
(3) "Priority seascapes" needs to be defined.
(4) "Improved management" needs to be defined. Ms Lynette Laroya (Philippines) pointed out that while there is a definition for seascapes in the annotated text of the RPOA, "there is no methodology for measuring improved management at the seascape level that I'm aware of."
(5) Dr. Darmawan noted that there is no TWG yet for seascapes, but there is a move in Indonesia to revive CTI work in this area "so there is opportunity for to include in the agenda the development of guidelines for the delineation of seascapes. Seascape is defined in the RPOA, not its delineation. We need to review Conservation International's guidebook on seascapes."
(6) Dr. Gomez explained that marine eco-regions generally do not have boundaries, and that any definition CTI comes up with is going to be arbitrary. What is important, he said, is that the countries agree to one definition.

Goal 2 – Ecosystem approach to management of fisheries (EAFM) and other marine resources fully applied

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
2.1.1 Number of policies and regulations promoting EAFM at regional and national levels with regulatory framework and budget allocated for their operationalization										
Output	Need the document	Retain	no	Different state level and national level ministries; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	2 years (matching the SCTR reporting)	1$	Malaysia 1 (2009)	2009
2.1.2 Number of projects and programs to implement EAFM										
Output	Need the document	Retain	no	Government agencies; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	2 years (matching the SCTR reporting)	1$	2009	2009
2.1.3 Number of projects and programs implementing EAFM and components thereof										
Outcome (Process)	Need the document	Addition	no	Government agencies; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	2 years (matching the SCTR reporting)	1$	2009	2009
2.2.1 Percent change in average income (fishing and non-fishing) of coastal households by profession compared to baseline (1)										
Outcome	Need the document	Retain	no	Government agencies in partnership with universities and NGOs; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	TBD (before/after?)	3$	N/A	available but not for all (Timor-Leste?)

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
2.2.2 Percent change in poverty										
Outcome	Need the document	Retain	no	Government agencies in partnership with universities and NGOs; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	TBD (before/after?)	3$	N/A	available but not for all
2.2.2 Percent change in poverty and food threshold of coastal households by livelihood compared to baseline (3)										
Outcome	Need the document	Retain	no	Government agencies in partnership with universities and NGOs; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	TBD (before/after?)	3$	N/A	available but not for all
2.2.3 Stable price of fish										
Outcome	Need the document	Suggested	no	Government agencies; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	TBD (before/after?)	3$	N/A	available but not for all
2.2.4 Percent contribution of fish to protein requirements										
Outcome	Need the document	Suggested	no	Government agencies,(health), universities, NGOS; EAFM Working group in implementing agencies report to NCC	NCC	Policy documents and reports (official documents)	TBD (before/after?)	3$	FAO?	nnne

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
2.3.1 Number of policies and agreements by among CT6 countries for management of tuna (5)										
	1,2	Retain, but CT6 Forum on Tuna Governance is essential	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009
2.3.2 Change in conservation status of tuna (6)										
	1,2	Retain, but CT6 Forum on Tuna Governance is essential	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009
2.3.3 Number of countries adhering to markets/certification standards of tuna fisheries agreed upon by CT6 countries (7)										
	1,2	Retain, but CT6 Forum on Tuna Governance is essential	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009
2.4.1 Number of policies and agreements on live reef fish trade among CT6 to decrease level of destructive fishing practices linked to the trade (8)										
	1,2	Retain, but CT6 Forum on Tuna Governance is essential	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009
2.4.2 Number and area (sq km) of locally managed areas for live reef fish trade (9)										
	1,2	Retain	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Document, CT Atlas	Annual	4$	2009	2009
2.4.3 Number of countries adhering to markets/certification (live reef fish and ornamental fisheries) agreed by CT6 (7)										
	1,2	Retain, but CT6 Forum on LRFFT Governance is essential	yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
2.4.4 Change in conservation status of live reef fish species (to be decided by CTI as a body or by a fourm designated by the CT6 according to IUCN-red list criteria assessment or other criteria determined by CTI) (6)										
			yes	NCC	EAFM TWG (supported by informal CT6 Forum on Tuna Governance)	Documentation on agreements signed	Annual	4$	2009	2009

Notes

(1) Change in income must be measured by livelihood and gender.
(2) Activities or processes that lead to the success of Target 2.2 are not being tracked by any of these indicators; there is a need for activity/outcome indicators
(3) Does percent change in poverty threshold and food threshold capture equity consideration?
(4) MEWG needs to consult a social economist/food security expert to determine if these indicators are adequate. How much will measuring these indicators cost? Will it involve tracking efforts by organizations not involved in CTI?
(5) CT6 agreed upon policies; indicators 2.3.1 – 3 require a focused project to complete
(6) This was elevated to impact level indicator for fisheries; not about IUCN but about CT6 governance of tuna
(7) There is value on CT6 agreeing on common standards
(8) CT6 agreed upon policies; indicators 2.4.1 – 4 require a focused project to complete
(9) Need to define management unit for LRFT, not equivalent to MPA

Goal 3 -- Marine protected areas (MPAs) established and effectively managed

Type	Regional Action	Spatial	Who measures? *Who analyses?*	Who reports? *Who compiles and shares?*	Means to verify	Frequency of reporting	Baseline (year collected/reported)	
							Regional	National
3.1.1. CTMPAS Framework developed and adopted by CT6 (1)								
Output	1	no	CTI MPA TWG *N/A*	CTI NCC *CTI MPA TWG*	Copy of CTMPAS framework document; CTI MPA TWG Minutes of Meeting, SOM Decision Document	Once	Target by November 2012 during SOM	N/A
3.1.2. Percent/Area of total marine habitat area in CT region in marine protected or managed areas								
Outcome (Process)	2	yes	Lead MPA agency or other bodies *CT Atlas*	CTI NCC *CTI MPA TWG*	CTAtlas map; CTMPAS Framework Document and progress report	Every two years	Refer to CTMPAS Framework document, CTATLAS, and rSCTR	Refer to CT6 SCTR; national gap analysis
3.1.3. Percent/area of each major marine and coastal habitat type in strictly protected "no-take replenishment zones"								
Outcome (Process)	Target outcome	yes	Lead MPA agency or other bodies *CT Atlas*	CTI NCC *CTI MPA TWG*	CTAtlas map(?), CTMPAS progress reports	Every two years	Refer to CTMPAS Framework document, CTATLAS, and rSCTR	Refer to CT6 SCTR; national gap analysis
3.1.4. Percent/Area (in sq km) of marine protected areas under "effective" management								
Outcome (Process)	Target outcome	yes	Lead MPA agency or other bodies *CT Atlas*	CTI NCC *CTI MPA TWG*	MPA Management Assessment Ratings/ Report;	Every two years	Refer to CTMPAS Framework document, CTATLAS, and rSCTR	Refer to CT6 SCTR; national gap analysis
3.1.5. Percent/Area of marine protected/ managed areas included in CTMPAS								
Output	3, 4,5	Yes	Lead MPA agency or other bodies *CT Atlas*	CTI NCC *CTI MPA TWG*	CTATLAS maps/ database; CTMPAS progress reports	Every two years	Refer to CTMPAS Framework document, CTATLAS, and rSCTR	To be determined in 2013 during regional exchange on CTI MPA

Note:

(1) MPA TWG will define what constitutes a "system," which may include waters outside protected areas.

Goal 4 – Climate change adaptation (CCA) measures achieved

Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
						Frequency	Estimated Cost	Regional	National
4.1.1 Number of regional agreements/frameworks/plans (e.g. region-wide early action plan (REAP) developed and implemented									
1,2,3,4,5	Retain as revised	no	CCA TWG	CCA TWG	Copy of the document	once	1$	0	N/A
4.1.2 Number of national policies (including national CCA plans and frameworks), laws and regulations on climate change adaptation proposed, adopted, and implemented									
3,4,5	Retain as revised	no	Relevant or concerned national government agencies with the NCCs	CCA TWG	Copy of the document	annual	1$	N/A	0
4.1.4. Percentage of local governments that have integrated climate adaptation into local governance (plans and actions) (1)									
3,4,5	Retain as revised	no	Relevant or concerned national government agencies with the NCCs	CCA TWG	Documentation of the local CCA plans or its equivalent; database to track the local governments	annual	2$	N/A	Percentage of LGUs having CCA program in 2009
4.1.5 Area of mangrove restored, protected or managed. (REAP 1&2) (1)									
Target outcome	Retain; management of this resource for multiple purposes	yes	Relevant or concerned national government agencies with the NCCs	CCA TWG	CT Atlas	annual	200,000$	N/A	Area of mangrove restored, protected or managed in 2009???
4.2.1 A national institution within CT6 designated and networked to address climate change adaptation coordinated with national government support (3)									
1	Retain as revised	no	NCCs	CCA TWG	official document	annual	1$	N/A	o

Notes:

(1) Clarify subsequent updates e.g. investments after plan, actions etc is adopted
(2) "Restored" needs to be defined (when is a mangrove restored?). Clarify terms in the indicator description column in the master document

(3) Malaysia has identified a university to be nominated as a Center of Excellence for CCA; Timor Leste submitted at the CTI High Level Financial Roundtable (HLFR) a proposal on establishing a climate change information center.

Goal 5 – Threatened species status improving

Type	Regional Action	Review Result	Spatial	Who Measures?	Who reports?	Means to Verify	Measuring/Reporting		Baseline (year collected/reported)	
							Frequency	Estimated Cost	Regional	National
5.1.1 Number of new policies or agreements adopted at the regional, national and local levels that are in compliance with the international agreements on threatened species										
Output	1 to 9	Retain as revised	no	focal agency	focal agency/NCC	copy of document/s	2 years	1$	RSCTR	SCTR
5.1.2 Area (in square kilometers) of protected marine habitat that contributes to conservation of threatened and endangered species protected (1)										
Output	1 to 9	Retain	yes	focal agency/ CT Atlas	focal agency/NCC	maps/copy of document/s	2 years	3$	RSCTR	SCTR
5.1.3 Number of threatened species with improved status (to be decided by CTI as a body or by a forum designated by the CT6 according to IUCN-red list criteria assessment or other criteria to be determined by CTI)										
Outcome	1 to 9	Retain	no	NCC/IUCN	management authorities authorized to report to IUCN	copy of document/s	2 years	1$	RSCTR	SCTR

Notes:
(1) Link to MPA indicator

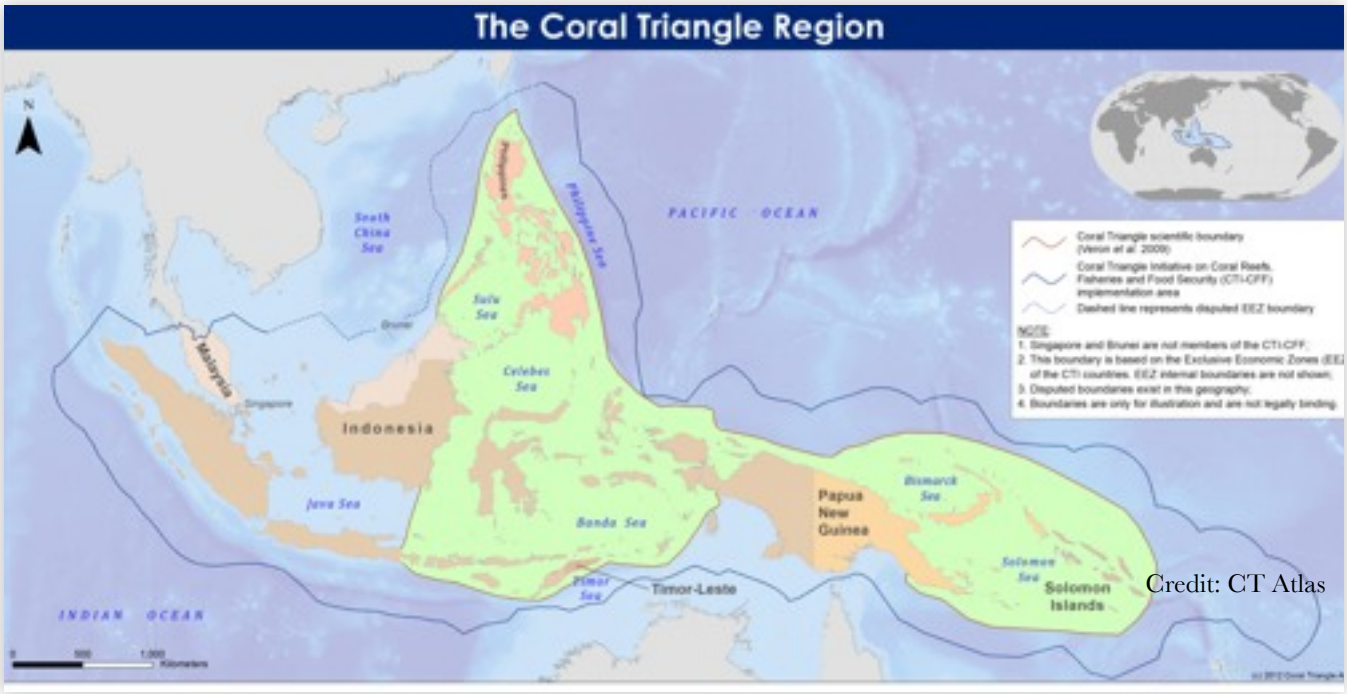
ANNEX 7: REGIONAL STATE OF THE CORAL TRIANGLE REPORT BROCHURE

Regional State of the Coral Triangle Report (RSCTR)

HIGHLIGHTS

October 2012

RSCTR & Monitoring and Evaluation Working Group Workshop
Hotel Borobudur, Jakarta, Indonesia



Objectives of the RSCTR

1. To benchmark and validate the status of the CT6 based on their biophysical, governance and socio-economic attributes; the threats, vulnerabilities and emerging issues they are facing; and the responses related to their NPOA/RPOA;
2. To identify information gaps and clarify the links of the RSCTR to the CTI's higher level outcomes, namely coral reefs conservation, sustainable fisheries, and better food security; and
3. To discuss the relationship between the ecological and social conditions of the CT6 to the challenges and opportunities at the national, seascape, and regional level.

Significance

The RSCTR identifies gaps in the CT countries' governance, ecological and socio-economic states based on information from the national SCTRs. The report translates these into opportunities to pursue the CTI higher level outcomes.

It also adds value to the national SCTRs by identifying areas of convergence (e.g. transboundary, seascape-wide, sub-regional and regional) and complementarities among the CT6. Regional collaboration is necessary to address the various forms of connectivity seen in the Coral Triangle. Examples of these connectivities are:

- **Natural connections**, including migration routes, larval dispersion and exchange, flow of currents, define the CT as an area of high ecological and commercial value. It is an important spawning ground for tuna and is crucial to the life cycle of threatened and endangered species such as the green turtle, the hawksbill, and the leatherback. The movement of tuna and shared stocks like the small pelagics, e.g. sardines and round scads, interact with the currents characteristic of the region.

- **Trade, socio-cultural, and economic arrangements -** These interact with ecological systems, for instance, fisheries agreements already exist between and among countries, and may be the foundation for a larger, unified vision for the region.
- **Shared experiences -** including common aims, and similar threats and issues, among countries can be the basis for unified action. Coordination among countries can overcome transactional costs, reduce conflicts and threats, and help in finding a shared direction forward.

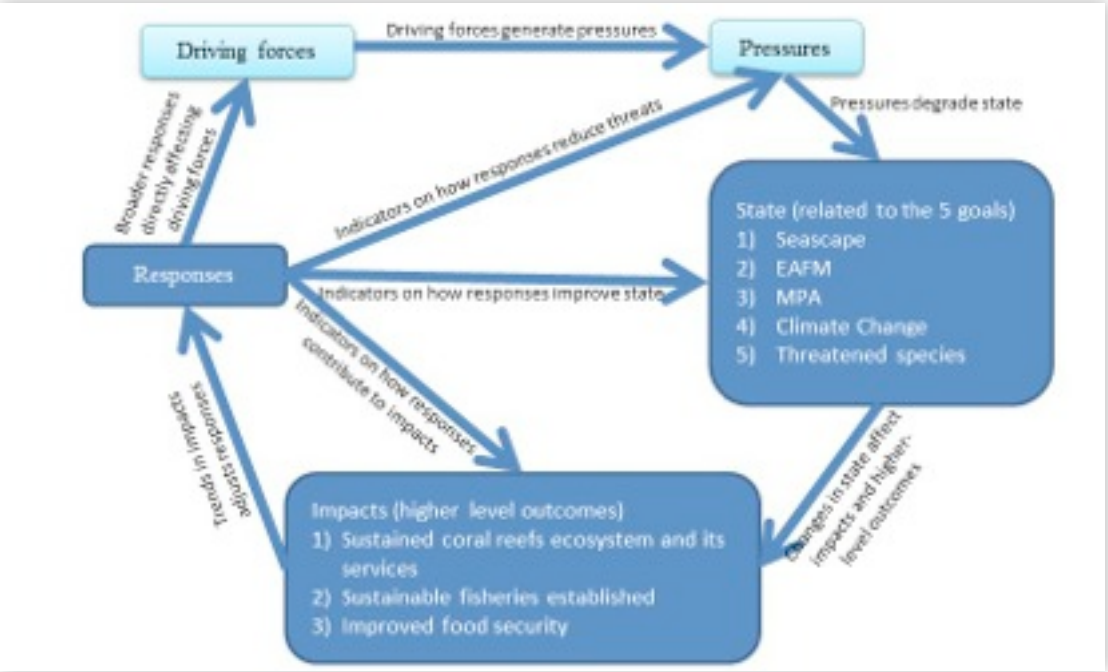
Further, the RSCTR should be able to contribute in:

- characterizing threats for reduction;
- identifying ecosystems for building resilience;
- determining gaps in fishing capacity and fish food accessibility and availability; and
- engaging knowledge integrators;
- costing actions needed to enjoin PPP (Public-Private Partnerships) and social enterprise development; and
- pursuing convergence opportunities at seascape and regional levels.

Approach for Analysis and Integration

- The national SCTRs provided the input for the RSCTR. The regional report followed the outline of the country SCTRs, but described the biophysical, socio-economic and governance states from a regional perspective.
- The RSCTR used the Driver – Pressure – State – Impact – Response (DPSIR) as the framework for analysis. It pooled cross-disciplinary knowledge concerning the socio-ecological health of the CT. Each CT6 country was described for each component of the DPSIR, and the results were integrated for a transboundary (e.g. seascape and regional levels) analysis. The DPSIR elicited data and research gaps, as well as opportunities for coordinated and complementary action among the CT6.
- On-going initiatives, like the CTMPAS and updates (Reefs at Risk series and the CT Atlas) and the regional SCTR workshop on 26-27 April 2012 also provided inputs for the report.

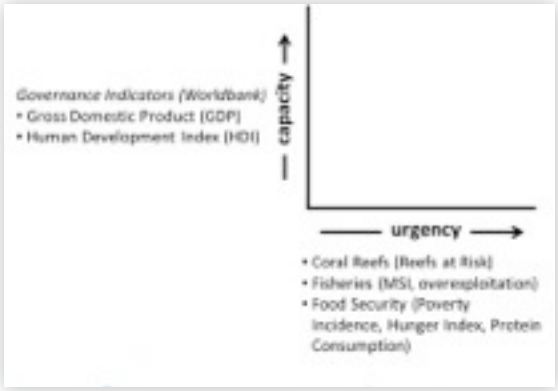
The DPSIR Framework and examples for each component



The socioeconomic and environmental governance capacity of the Coral Triangle countries utilizing gross domestic product (GDP) at purchasing power parity per capita and Human Development Index (HDI) as proxy to address coral reefs, fisheries, and food security issues vs. the urgency of the issues. Modified from Cabral et al. (2012).

Key Findings

Review of the interrelated governance, ecological and socio-economic conditions of the CT6 showed that the different capacities and urgencies to be addressed. For example, coral reef conservation for all six CT countries is highly urgent and important, but each country has its own level of capacity in achieving the desired sustainable development trajectory.



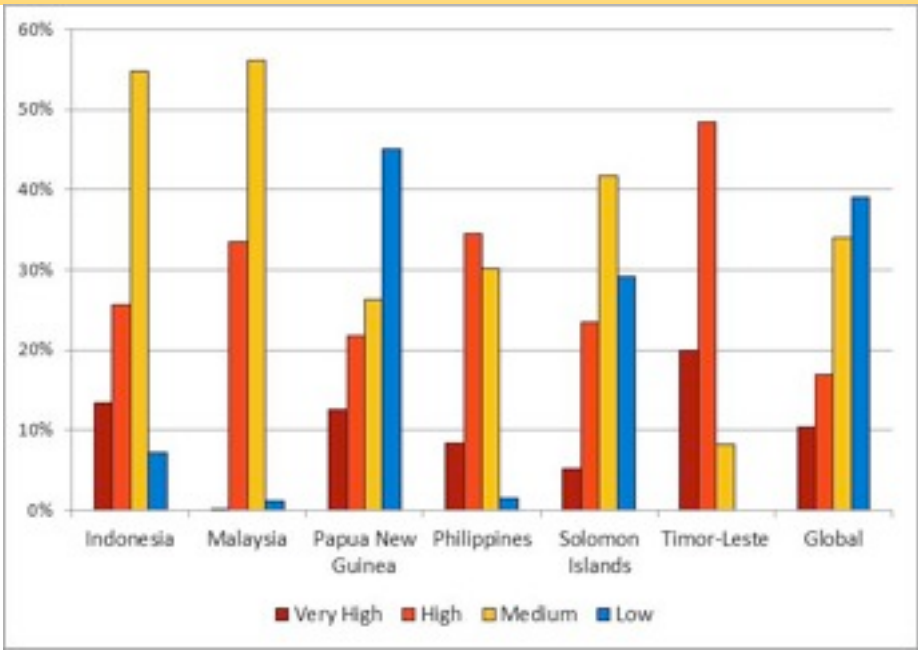
A. State, threats and drivers

1. Coral reef conditions in the CT continue to decline, with 44% or 37,892 km^2 of the total regional coral reef area subjected to high to very high levels of local integrated threats (Burke at al., 2012).
2. Fishing within high fisheries catch countries in the CT – the Philippines, Indonesia and Malaysia – are beyond standard MSY levels with high exploitation rates.
3. Global demand for marine products, seen in such practices as the coral trade and LRFFT, affect the livelihoods of coral reef-dependent populations whose socio-economic state have profound influences in the ecological state and ecosystem functions and services.
4. Overpopulation, market demand, unregulated urbanization and unwise economic development are the most common drivers of the threats or opportunities identified for the region.

All CT6 countries except Malaysia have moderate to high threat levels for all the dimensions of sustainability (governance, ecological and socio-economic states).

B. Linking national (NPOA) to regional (RPOA) actions towards achieving the higher-level outcomes

1. MPA networks, which appear at the national, seascape (SSME and BSSE) and regional (CT MPA System or CTMPAS) level, address four of the five NPOA goals directly and contribute to all three higher-level outcomes.
2. Initiatives on the the Local Early Adaptation Plans (LEAP) contribute to each country's National Adaptation Programme of Action (NAPA), which in turn supports Regional Early Action Plan (REAP). These adaptation goals build resilience in the CTMPAS.
3. Improving food security would require addressing fish availability (linked with the fisheries objective), accessibility (e.g. measures to make fish more affordable), and food consumption through behavioral change/interventions.



Reefs at Risk from Integrated Local Threats for the Countries of the Coral Triangle.

Note: Integrated local threats consist of the four local threats—overfishing and destructive fishing, marine pollution and damage, coastal development, and watershed-based pollution Source: Burke et al., 2012

C. Response and impact

1. The responses to the threats and drivers vary per country, but the Philippines, Indonesia and Malaysia have made progress in establishing and strengthening marine protected areas; and initiated an ecosystem-based approach to fisheries management.
2. Existing cooperation among countries, such as that among Malaysia, Indonesia and the Philippines for the management of the Sulu-Sulawesi Seascape, provides traction for NPOA-related activities.
3. Management of the Sulu-Sulawesi Marine Ecoregion (SSME) and the Bismarck – Solomon Seas Ecoregion (BSSE) prior to the CTI provide lessons on what worked and what didn't work in seascape.
4. The Coral Triangle Initiative is an opportunity to synchronize and integrate existing bi- and multi-lateral agreements, taking advantage of the already strong ties among Malaysia, Indonesia and the Philippines and between the Solomon Islands, Papua New Guinea, and Timor-Leste.

Recommendations

Five major recommendations have been proposed to enhance the link of the NPOA and RPOA to the desired higher-level outcomes.

1. Seize opportunities in achieving synergies at pan-hierarchical governance scales to earn the value-added benefit of overcoming transactional costs
2. Invest in capacity-building and knowledge management to overcome the lack of governance capabilities in CTI systems, processes and standards
3. Exchange resources, engaging and empowering equitable partnerships
4. Commit towards harmonizing production targets with biodiversity conservation and food security needs
5. Reduce risks and threats through CT climate integration of LEAP and REAP

For this workshop the RSCTR aims to share the lessons derived from the report through:

1. Continue the initiative in the integration of a knowledge management system to the MEWG through the RSCTR-SCTR
2. Contribute to the agreements on the RPOA indicators and their link to the CFF outcomes
3. Initiate the integration of the RPOA-RSCTR-M&E processes, systems and standards for the CTI

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