CBD

UNEP

Convention on Biological Diversity

Distr.
GENERAL

UNEP/CBD/SOI/WS/2016/5/2
4 April 2017

ENGLISH ONLY

SUSTAINABLE OCEAN INITIATIVE NATIONAL CAPACITY DEVELOPMENT WORKSHOP FOR VANUATU
Port Vila, 23-25 November 2016

REPORT OF THE SUSTAINABLE OCEAN INITIATIVE NATIONAL CAPACITY DEVELOPMENT WORKSHOP FOR VANUATU

Note by the Executive Secretary

1. The Conference of the Parties, in various decisions, has requested training and capacity development for conservation and sustainable use of marine and coastal biodiversity in order to support Parties in achieving the Aichi Biodiversity Targets in marine and coastal areas.

2. Pursuant to these requests, the Sustainable Ocean Initiative (SOI) was born in the margins of the tenth meeting of the Conference of the Parties, with the support of Japan, and in collaboration with various partners that were willing to provide the necessary expertise, technical and financial resources and to serve as a global platform to build partnerships and enhance capacity to achieve the Aichi Biodiversity Targets in marine and coastal areas.

3. In line with the SOI Action Plan 2015-2020, the Executive Secretary convened the Sustainable Ocean Initiative National Capacity Development Workshop for Vanuatu, with financial support from the Government of the Republic of Korea (through the EXPO 2012 Yeosu Korea Foundation and Korea Maritime Institute), and in collaboration with the Commonwealth Scientific, Industrial Research Organisation of Australia (CSIRO/Australia) and the Government of Vanuatu, with additional technical input from the Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) project.

4. The workshop aimed to enhance cross-sectoral dialogue and coordination related to marine biodiversity to address capacity needs for Vanuatu to achieve national priorities as outlined in the National Ocean Policy of Vanuatu as well as global goals under the Aichi Biodiversity Targets and the Sustainable Development Goals. The workshop focused in particular on cross-sectoral dialogue and marine spatial planning as a tool to support effective conservation and sustainable use of marine biodiversity, balancing different uses and priorities for the marine environment and contributing to healthy ecosystems, sustainable economic growth and societal well-being.

5. The workshop report was developed in collaboration with the Commonwealth Scientific, Industrial Research Organisation of Australia (CSIRO/Australia). The model of the workshop is based on previous capacity development workshops implemented by CSIRO/Australia, in collaboration with various Governments and organizations, and, as such, the format of the workshop report is based on the reports of these previous workshops.

Sustainable Ocean Initiative National Capacity Development Workshop for Vanuatu

23 – 25 November 2016

Port Vila, Vanuatu

Foreword

This report provides a summary of the Sustainable Ocean Initiative (SOI) National Capacity Development Workshop for Vanuatu, which took place in Port Vila, Vanuatu from 23 to 25 November 2016.

This workshop was convened by the Secretariat of the Convention on Biological Diversity (CBD) and the Commonwealth Scientific, Industrial Research Organisation of Australia (CSIRO/Australia), together with the Government of Vanuatu, with additional technical input from the Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) project.

Financial support for the workshop was kindly provided by the Government of the Republic of Korea, through the EXPO 2012 Yeosu Korea Foundation and Korea Maritime Institute.

Background on the Sustainable Ocean Initiative

The Conference of the Parties (COP) to the Convention on Biological Diversity, at its tenth meeting, adopted the Strategic Plan for Biodiversity 2011-2020, with its Aichi Biodiversity Targets (see decision X/2). The mission of the Strategic Plan is to take effective and urgent action to halt the loss of biodiversity in order to ensure that, by 2020, ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being and poverty eradication.

The COP also emphasized the need for training and capacity-building for developing country Parties through regional workshops that contribute to sharing experiences and knowledge related to the conservation and sustainable use of marine and coastal biodiversity. Recognizing this urgent need, the Sustainable Ocean Initiative (SOI) was born in the margins of the tenth meeting of the COP, with the support of Japan, and in collaboration with various partners. The Sustainable Ocean Initiative (SOI) is a global capacity development partnership, coordinated by the Secretariat of the Convention on Biological Diversity (CBD), which is focused on addressing capacity needs to facilitate progress towards the Aichi Biodiversity Targets in marine and coastal areas. SOI focuses on achieving a balance between conservation and sustainable use of marine and coastal biodiversity by applying an action-oriented, holistic and integrated capacity-building framework. SOI is committed to building bridges between biodiversity conservation and resource management sectors.

SOI has evolved as a global platform to build partnerships and enhance capacity to achieve the Aichi Biodiversity Targets in marine and coastal areas by:

(a) Achieving a balance between conservation and sustainable use and the promotion of flexible and diverse approaches;

(b) Identifying best practices, facilitating information sharing, and learning from experiences;

(c) Creating partnerships that can provide for targeted capacity-building, training, technical assistance and learning exchange;

(d) Providing for two-way communication among policymakers, scientific communities and local stakeholders;

(e) Facilitating monitoring of progress towards achieving the Aichi Biodiversity Targets on marine and coastal biodiversity;

(f) Facilitating the provision of guidance and guidelines that will help their achievement; and

(g) Improving the scientific basis for implementation.

Purpose

The workshop aimed to enhance cross-sectoral dialogue and coordination related to marine biodiversity to address capacity needs for Vanuatu to achieve national priorities as outlined in Vanuatu's National Ocean Policy as well as global goals under the Aichi Biodiversity Targets and the Sustainable Development Goals. The workshop focused in particular on cross-sectoral dialogue and marine spatial planning as a tool to support effective conservation and sustainable use of marine biodiversity, balancing different uses and priorities for the marine environment and contributing to healthy ecosystems, sustainable economic growth and societal well-being.

This workshop provided an important opportunity for interactive discussions and coordination among different sectors and stakeholders in Vanuatu. Through the workshop, participants underwent an exercise on applying each step of the marine spatial planning process, in particular identifying:

- Main priorities of different stakeholders for the marine resources of Vanuatu;
- How different stakeholders value and use the marine resources of Vanuatu;
- How different pressures affect the marine resources of Vanuatu;
- What management options are available to address these pressures; and
- How an understanding of these different values, uses, pressures and management options can support the implementation of the National Ocean Policy in Vanuatu; and

Workshop Approach

Marine spatial planning (MSP) provides a framework and consultative process to gain a better understanding of how marine areas are used and valued by stakeholders to facilitate informed planning and decision making. MSP allows for effective stakeholder discussions on how marine and coastal areas can be used effectively and sustainably. The process considers the interactions among various marine resources and uses, and seeks to balance demands for development with the need to protect marine ecosystems, and to achieve social and economic objectives. As such, the MSP process recognizes that we can only plan and manage human activities in marine areas, not the marine ecosystems or components of ecosystems.

An effective marine spatial planning process will include at least the following key elements and principles[1]:

- Ecosystem-based, balancing ecological, economic, and social goals and objectives toward sustainable development;
- Integrated, across sectors and agencies, and among levels of government;
- Place-based or area-based;

[1] Ehler, C. and Douvere, F. (2009) Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. (English).

- Adaptive, capable of learning from experience;
- Strategic and anticipatory, focused on the long-term; and
- Participatory, stakeholders actively involved in the process

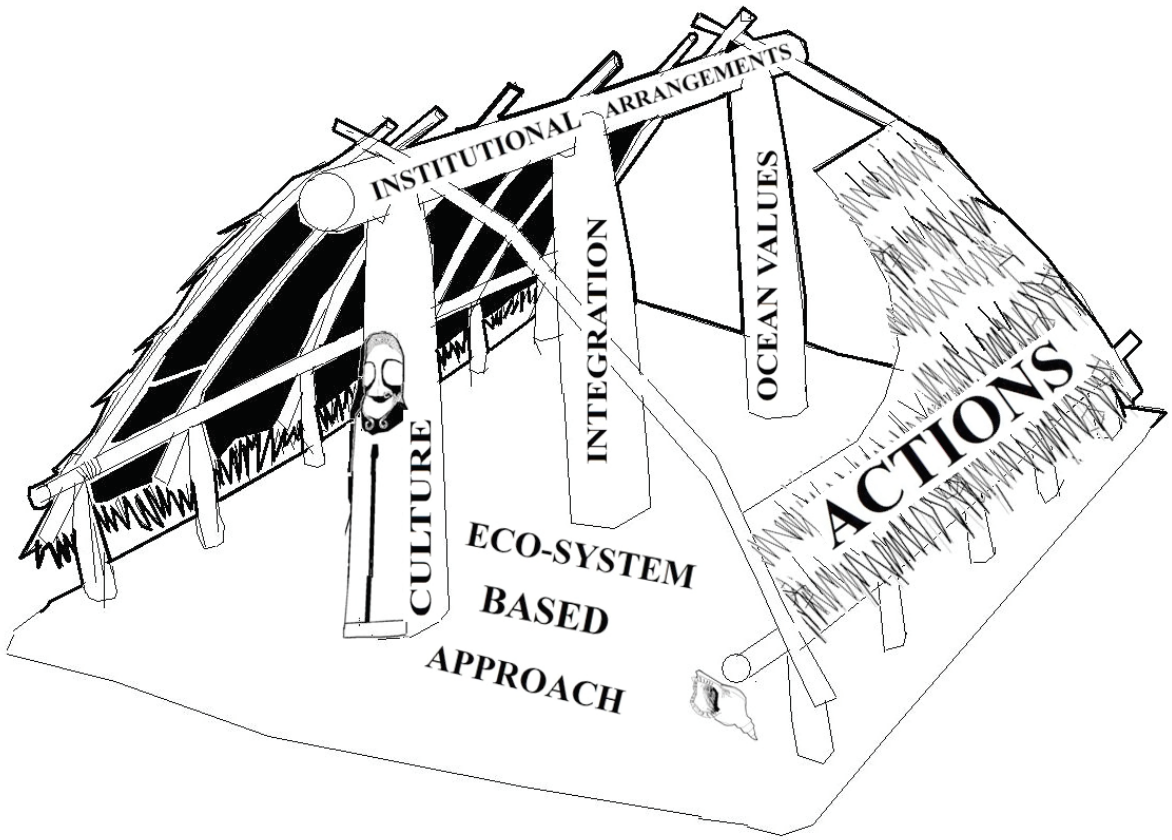
MSP can be conducted at any scale, depending upon the appropriate ecosystem or jurisdiction boundaries. Nevertheless, under the integrated and ecosystem based approaches the planning process should also consider influences and interactions with systems outside of the area (including human uses and ecosystem connectivity).

Importantly, MSP does not lead to a single, one-off plan. It is an on-going, iterative, and adaptive process, requiring regular review and revision. An MSP process would aim to include the following steps, not as a linear process, but with various overlaps and feedback loops depending on local circumstances.

In 2016, the government of Vanuatu adopted a National Ocean Policy, which was supported by a series of stakeholder consultations. The Policy aims to ensure that management of Vanuatu's marine environment and its resources will achieve the desired objectives, programs and measures across all the agencies and for all people in Vanuatu that have a role in using and managing the marine environment. The National Ocean Policy embeds the culture of the ocean into ocean management and merges across different uses, users and ocean managers.

The mechanisms to achieve these aspirations are set out in the National Ocean Policy are framed around the Nakamal (an institution for traditional custom governing systems for Vanuatu):

- The foundation is an ecosystem-based approach to management as envisaged and implemented by the forefathers using traditional marine resource management systems;
- Upon the foundation are three pillars: the multi-dimensional value of the ocean; the integration across uses, across boundaries, across sectors, across governance structures and Vanuatu's resilient ocean culture;
- The beam across the Nakamal is the overarching institutional arrangements; and
- The thatched roof is emblematic of the sectoral and cross-sectoral policy actions that will protect the Nakamal.



The government of Vanuatu is also concluding the development of a National Sustainable Development Plan and finalizing a revised National Biodiversity Strategy and Action Plan (NBSAP). These important developments provide a valuable enabling framework for enhanced management of Vanuatu's ocean resources. The workshop provided an opportunity to outline tools and approaches to facilitate implementation of the National Ocean Policy, also in the context of the issues and priorities laid out under the National Sustainable Development Plan and the National Biodiversity Strategy and Action Plan (NBSAP).

The workshop provided a capacity development exercise in applying each step of the MSP process using the knowledge and experiences of the workshop participants on the values, uses, pressures, interactions and future aspirations for the marine environment of Vanuatu. Specific focus was placed on opportunities to provide management of the ecosystems and species in Vanuatu, also considering nationally, regionally and globally important ecosystems and species. The workshop ran through a process that can be easily adapted to meet the specific needs of communities and government at any level of marine management maturity.

A particular focus for the workshop was to identify areas of social and ecological value and to investigate opportunities for establishing marine and coastal managed areas.

The workshop was structured to work through a single itineration of an MSP process devised by the Commonwealth Scientific and Industrial Research Organization of Australia (CSIRO/Australia) (Dunstan et al. 2016), drawing on existing MSP expertise existing at the

Secretariat of the Pacific Regional Environment Program (SPREP) and CSIRO.[2] It was designed based on fisheries and conservation planning and management processes and is intended to be able to flexibly meet the diverse set of needs of different management agencies.

The scope and structure of the MSP process cycle applied in this workshop covered the following 5 key steps:

- **Step 1:** Scoping and stakeholder engagement. Understanding the political/institutional and social domain and motivations for marine management.
- **Step 2:** Understanding the values and uses in the marine environment. User knowledge and scientific information inputs.
- **Step 3:** Understanding the interaction between values and pressures/uses.
- **Step 4:** Informing a clear set of objectives and management responses based on the values and interactions.
- **Step 5:** Formalising a process for monitoring and evaluating the effectiveness of management through indicators that can detect changes on the pressures and values.

The workshop also looked at the need for future cycles of the MSP process to enhance and adapt according to the newly acquired information. Figure 1 below shows the iterative cycle steps of a Marine Spatial Planning process used during this workshop.

DISCLAIMER

The workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices, ministries or organizations involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information available and the knowledge of the workshop participants.

[2] Dunstan PK, Bax NJ, Dambacher JM, Hayes KR, Hedge PT, Smith DC, Smith ADM (2016) Using Ecologically or Biologically Significant Areas to implement Marine Spatial Planning. Ocean and Coastal Management 121: 116-127.

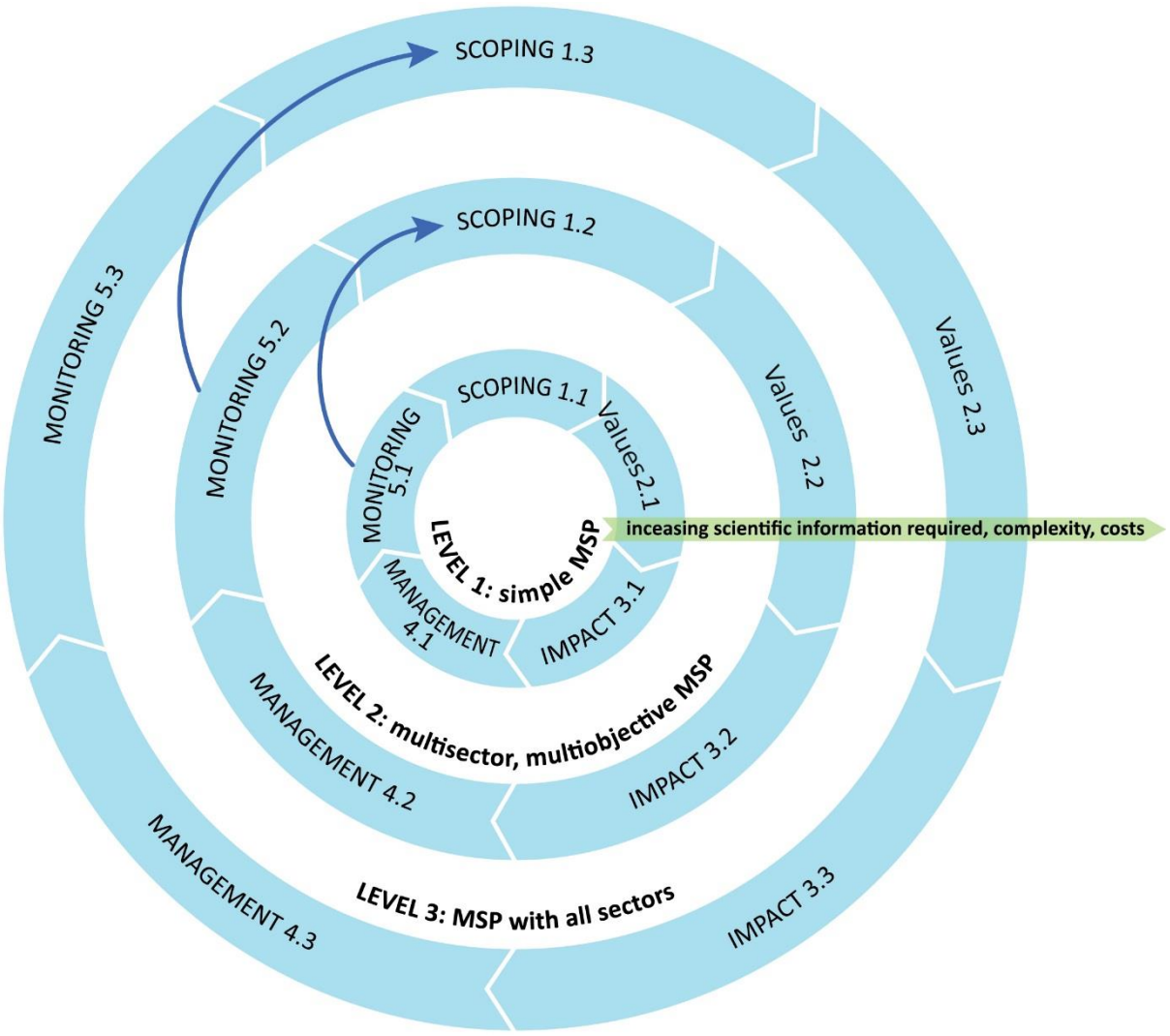


Figure 1: Illustrative of the iterative steps of a marine spatial planning process used during the workshop. Adapted from Dunstan et al. 2016 (see Appendix 1.)

Step 1: Scoping and Stakeholder Engagement

Objectives

The aim of the initial phase of the MSP process is to obtain an understanding of the stakeholders as well as the political, institutional, legislative, and social domain for management in the marine environment. Scoping the policy landscape will identify opportunities available to Vanuatu stakeholders in marine management.

This step identifies the key drivers for management and the stakeholders who have an interest in the area being managed. It identifies the aspirational objectives of the system (e.g., maintain biodiversity, maximum sustainable yield, economic growth) in terms of ecological/biological, social, economic and political needs. All the reviewed frameworks identify detailed stakeholder participation as a key component of this initial step, as it provides legitimacy for future steps. This step will be primarily conducted in conjunction with the agencies responsible for managing the system.

It is also important to note the difference between aspirational objectives (e.g. Sustainable Development Goals) and operational objectives, which have associated thresholds for agreed management action. Both play important, but different roles, in management. Aspiration targets are set in the first phase of management (i.e. scoping). They set the general tenor of the process and represent broad agreement among consulted stakeholders on a particular outcome. There are four main types of objectives that lead to successful management: biological/ecological, economic, social and political.

Operational objectives are key to a functioning adaptive management cycle. These objectives, and their associated thresholds, targets and limits, identify the points where actions must be taken if aspirational objectives are to be met. Each operational objective will have one or more indicators that will trigger different management actions (including reviews). Monitoring and evaluation of the indicators (Step 5 of the MSP process) will determine over time if management is working of if changes need to be made.

Practical Exercise

Participants were split into groups and asked to identify and describe the objectives and priorities of Vanuatu for their marine environment, including goals, objectives and priorities that have already been articulated in the National Ocean Policy. The participants were asked to think about priorities at a community scale as well as a national scale, and how these related to any regional-scale priorities.

Key questions posed to the participants were:

- What are the current priorities for the Oceans and Coasts in Vanuatu?
- For Which Policy Actions in the National Ocean Policy should draft implementation plans be developed?
- What do communities want to see?

The participants were asked to identify three key priorities from the National Ocean Policy.

Following the identification of priorities and objectives, participants were then asked to consider whether the priorities and objectives that they identified were complementary or overlapping, or whether there are any conflicting priorities.

Results[3]

In breakout groups, participants identified the following key priorities from the National Ocean Policy, with some related objectives, as follows:

Preserve and Protect the Marine Environment

Policy Action 3.2.5.1—Conserve and enhance the overall quality of the marine environment through protection, maintenance or restoration of natural and physical features, processes and biological diversity including through traditional management systems.

Policy Action 3.2.5.4—Ensure Vanuatu's marine environment is protected from devastating impacts by exercising its jurisdiction in accordance with relevant international law.

- *Policy Action 3.2.5.1 can support the achievement of Policy Action 3.2.5.4, and vice versa*

Marine Spatial Planning

Policy Action 6.1.1.3—Map biological information, including biological regions, and existing and possible future uses of the marine environment by different activities.

Marine Protected Areas

Policy Action 6.1.2.2.3—Improve coordination among locally based and managed MPA's and tabu sites.

Fisheries Management

Policy action 6.2.1.1—Rebuild the stocks of fisheries resources (e.g., coconut crabs, lobster, sea cucumber, trochus, clams) by identifying and implementing targets for each fishery to stabilise the net income of the operators in the fisheries; ensure sustainable harvests; and promote co-management of the fisheries.

Reform Ocean Governance

Policy Action 3.2.3.1—Establish and implement clear and coordinated institutional mechanisms for integrated management across relevant sectors as fisheries, transport, mining and environment including, where appropriate, partnerships between the different levels of government, private sector and civil society and supporting traditional management systems.

Recognize Culture

Policy Action 3.2.2.1—Recognize and support traditional marine resource management, use and governance systems including, where appropriate, within formal legal arrangements.

Promote Public awareness, participation and government accountability.

Policy Action 3.2.7.1—All relevant government agencies, chiefs and other marine users.

[3] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.

Secure Rights
Policy Action 3.2.1.1—Negotiate and formalize Vanuatu's Maritime Boundaries in order to secure, exercise and protect rights and jurisdiction over marine areas and resources.

Recognise Culture
Policy Action 3.2.2.1—Recognize and support traditional marine resource management, use and governance systems including, where appropriate, within formal legal arrangements.

Integrated Marine Spatial Planning
Policy Action 3.2.3.1—Establish and implement clear, coordinated institutional mechanisms for integrated marine management across relevant sectors as fisheries, transport, mining and environment including, where appropriate, partnerships between the different levels of government, private sector and civil society and supporting traditional management systems.

- *Complements Policy Action 3.2.7, which can be realized through all of the above.*

Promote public awareness
Policy Action 3.2.7—Promote public awareness, participation and government accountability.

Strategic Objective 3.2.6—Promote sustainable economic development
- Development requires economic engine/drivers
- Leaders and individual interest in economic benefit
- Sustainability requires equitable management and controls

Strategic Objective 3.2.3—Reform Ocean Governance
- Need consideration of conflicting uses, polices, stakeholders, agencies
- Ocean system and cross cutting issues

Strategic Objective 3.2.4—Surveillance and Enforcement
- Poor enforcement of existing policy
- Need surveillance and enforcement for good resource management and protection
- Expanding monitoring capabilities

Future Options
There are a number of options that may be included in future iterations of the scoping step in the context of an MSP process in Vanuatu:

1. Inclusion of a greater stakeholder diversity in future rounds to achieve a broader consensus of priorities and objectives.
2. A broader group might include a member from each coastal district and all government departments. High-level government policy makers could clearly articulate current policies and shed light on any upcoming policies.
3. Priorities can be linked explicitly to strategic targets identified in national development plans and plans of action.
4. As experience with a MSP process develops it will be possible to progressively include more sectors into the process, but simplicity in initial steps will aid implementation.

Step 2 – Values

Objectives

The aim of the second step in the MSP process is to spatially identify sites that are important to stakeholders. Areas that are important can be considered to have value placed on them, within a socio-economic context.[4] There are three broad categories of values that can be described in the marine environment: ecological, socio-cultural and monetary. Value systems identified within national frameworks are useful as prioritization tools, focusing effort and attention onto the areas identified. These areas are where extra caution is applied in the management of these systems. There has been considerable effort to develop criteria that can be used to identify and describe significant or important areas.

To assist in the development of a preliminary national set of values, the workshop used the CBD scientific criteria for ecologically or biologically significant marine areas (EBSAs). The application of these has been described in Bax et al. (2016). The approach to using the EBSA criteria to identify areas uses clear description of ecological value, and shares many of the criteria with the socio-economic valuations suggested by DeGroot (2003).[5] Given the overlap with other set of criteria and the universal acceptance of the CBD criteria by all Parties to the CBD, the EBSA criteria can be used and adapted for other purposes and feed other international processes, where appropriate. Participants were also encouraged to include additional criteria in this exercise, where relevant.

Criteria to describe human well-being values were adopted from Skewes et al. (2016), and form the basis for the *Asset Drivers, Well-being Interaction Matrix* (ADWIM), which is a participatory tool for estimating future impacts on ecosystem services and livelihoods.[6] The Human well-being indicators described there were derived and simplified from the Millennium Ecosystem Assessment (2005).[7]

The ideas outlined in Gómez-Baggethun and Martin Lopez (2015) suggest how social and cultural values could be included into national or regional values frameworks.[8] There are significant challenges in adopting this approach, particularly around scale and engagement with all relevant stakeholders. However, a unified framework to consider ecological,

---

[4] Erik Gómez- Baggethun and Berta Martín- López (2015) Ecological economics perspectives on ecosystem services valuation. Handbook of Ecological Economics, Chapter: 11, Publisher: Edward Elgar, Editors: Joan Martínez-Alier, Roldan Muradian, pp.260-282

[5] Rudolf De Groot, Johan Van der Perk, Anna Chiesura, Arnold van Vliet, Importance and threat as determining factors for criticality of natural capital, Ecological Economics, Volume 44, Issues 2–3, March 2003, Pages 187-204, ISSN 0921-8009, http://dx.doi.org/10.1016/S0921-8009(02)00273-2.

[6] T.D. Skewes, C.M. Hunter, J.R.A. Butler, V.D. Lyne, W. Suadnya, R.M. Wise, The Asset Drivers, Well-being Interaction Matrix (ADWIM): A participatory tool for estimating future impacts on ecosystem services and livelihoods, Climate Risk Management, Available online 11 September 2015, ISSN 2212-0963, http://dx.doi.org/10.1016/j.crm.2015.08.001.

[7] Millennium Ecosystem Assessment, 2005. Millennium Ecosystem Assessment. Ecosystems and Human Well-being: a Framework for Assessment. Island Press, Washington DC.

[8] Erik Gómez- Baggethun and Berta Martín- López (2015) Ecological economics perspectives on ecosystem services valuation. Handbook of Ecological Economics, Chapter: 11, Publisher: Edward Elgar, Editors: Joan Martínez-Alier, Roldan Muradian, pp.260-282

social/cultural and economic values describing areas from different groups of stakeholders provides a key component of MSP.

Practical Exercise

Participants were asked consider the following question:

- What are the important marine areas (large or small) in Vanuatu?

Participants were asked to identify spatially locate these areas on large hardcopy maps.

Participants were also asked to consider what makes these areas valuable to them from an environmental, ecological, socio-cultural and monetary perspective and were asked to note the specific areas that possess these attributes. Participants were given a suggested list of 13 criteria to work with (shown below) and were encouraged to add their own criteria in order to describe important areas in the waters of Vanuatu. Participants were also encouraged to identify areas that meet more than one criteria and to make similar areas located near each other into a single system.

Some groups decided to focus, in particular, on

The suggested list of criteria is as follows:

Ecological values/attributes

1. Biological Productivity
2. Biological Diversity
3. Uniqueness or rarity
4. Special importance for life history stages of species
5. Importance for threatened, endangered or declining species and/or habitats
6. Naturalness
7. Vulnerability, Fragility, Sensitivity or Slow Recovery

Livelihood Importance/Ecosystem services

8. Economic valuation
9. Income
10. Food
11. Health
12. Culture
13. Coastal Protection

Economic Values

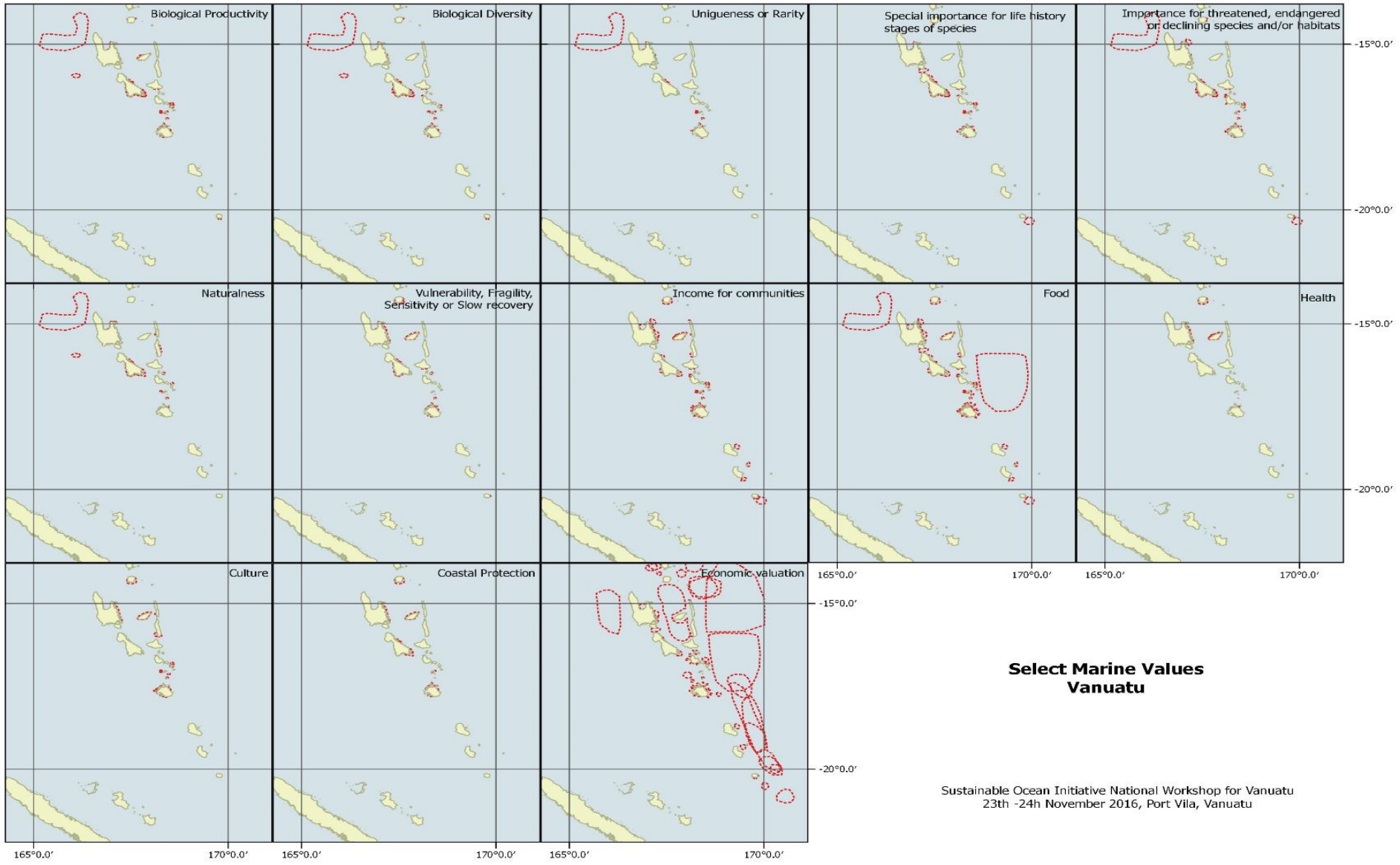
14. Economic Valuation (eg Fish Stocks, Minerals, Aggregates)

Results[9]

[9] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the

In this exercise, the participants identified the following valuable areas seen in the maps below:

sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.


Biological Productivity
Biological Diversity
Unigueness or Rarity
Special importance for life history stages of species
Importance for threatened, endangered or declining species and/or habitats
Naturalness
Vulnerability, Fragility, Sensitivity or Slow recovery
Income for communities
Food
Health
Culture
Coastal Protection
Economic valuation
-15°0.0′
-20°0.0′
165°0.0′
170°0.0′
Select Marine Values
Vanuatu
Sustainable Ocean Initiative National Workshop for Vanuatu
23th -24h November 2016, Port Vila, Vanuatu

Select Marine Values
Epirutu Santo, Vanuatu

Sustainable Ocean Initiative National Workshop for Vanuatu
23th -24h November 2016, Port Vila, Vanuatu

Practical Exercise

Participants were asked consider the following question:

- What are the Human, Cultural, Financial, Institutional assets to support conservation and sustainable use?

Participants were also asked to identify the different Human, Cultural and Institutional assests that could be used to support the implementation of Vanuatu's Oceans Policy. These could be:

- Human (e.g., Communities, Scientists, MPs, Chiefs)
- Cultural (e.g., Traditional practices)
- Financial (e.g., Banks, Donors, Government Investment)
- Institutional (Ministries, Provinces, CROP Agencies such as SPC, SPREP)

Type of Asset	Assets Present
Human	• Community • Chiefs/leader • Land/ resource owner • Village council • Area secretary/province • Schools • Churches • Scientist • Local NGOs • Vanuatu
Cultural	• Tabus • Traditional methods (fishing) • Traditional harvesting season (flying fish Futuna)
Financial Institution	• Government • UNESCO • Regional organizations--Secretariat of the Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP), IUCN, Pacific Islands Forum Fisheries Agency (FFA) • Banks (world Bank) • GEF
Institution	• UNESCO • Regional organizations--Secretariat of the Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP), IUCN, Pacific Islands Forum Fisheries

	Agency (FFA) • Governments • University • NGOs • CSIRO • GIZ • International Relief and Development • National Institute of Water and Atmospheric Research (NIWA) • Red Cross • World Vision

Assets in selected islands

Island	Human	Cultural	Financial	Institution
Torres	Chiefs, MPs, Communities, Area, Council, Tribe Council, Island Council, Tourism	Traditional practices	Government investment	Fisheries, ministries, provinces, red Cross, TVET, Toursim
Reef Island	Communities, Chiefs	Tabu Areas	Government investment, Donors	Fisheries, environment, ministries, province
Vanua Lava	Communities, Chiefs	Tabu Sites	UNESCO, Donors	Provinces, Ministries, Malvatumauri
Mota Laya	Communities, Chiefs	Tabu Sites	Government investment, Donors	Provinces, Ministries, Malvatumauri
Gaua	Communities, Chiefs, Toursim, Tribe Council, Management, Comities	Tabu Sites, Water Music, Bamboo Band	Government investment, Donors	Provinces, Ministries, Malvatumauri
Sanma	MPs, Chiefs, communities, councils, area secretaries, management comities, tourism, scientists	Malo Pass	Government investment, Donors	Ministries, CBOs, Provinces, TVET, CROP agency

Discussion

Broad sets of values were described for all of the coastal and near shore areas of Vanuatu. These covered all the potential values described in the initial suggestions. However, it is important to note that each area is identified by a range of values and that areas with different values overlap in a number of instances.

The participants of the workshop do not represent all stakeholders in the marine environment in Vanuatu, particularly from all districts. It is anticipated that if more representatives from more districts were included that a more comprehensive and robust description of the values of the coastal and near shore environment would be obtained.

Consideration also needs to be given to the set of criteria used to describe the values. Development of a national values framework would assist in this proceed that describes a comprehensive set of values for Vanuatu.

Future Options

There are a number of options that may be included in future iterations of this step:

1. Broader engagement with a more diverse set of stakeholders will provide a more robust accounting of all the values held by community and government.
2. With increasing experience more information and scientific data can be included in the identification of areas. This can include data from fisheries and environmental research.
3. Engagement with sectors providing key economic activities to better capture the interaction between social, environmental and economic sectors.

Step 3 – Uses and Pressures

Objectives

The values identified in the previous exercise can be overlaid with the current human uses and pressures that exist within the area or may exist over the term of the management time cycle. In the simplest case, this may be a simple matrix of values and pressures, identifying which values in the areas identified are most likely to be impacted. With increasing understanding of the values and ecosystem components, it is possible to construct conceptual models that allow for a more formal analysis of the cumulative impacts of pressures on values.

Finally, as more information is obtained through a marine spatial planning and management process, other models and analysis can be used to provide information on key thresholds to trigger management interventions. With increasing data, understanding of each area meeting the value criteria will improve, supporting a more refined understanding of the ecosystem and its interactions.

Practical Exercise (Part 1)

Participants were asked to spatially identify the uses and pressures on the in-shore marine areas around Vanuatu on maps, drawing where the areas of uses were occurring and record what type of use. The participants were also asked to think about the different types of use that occur and to identify any that may have been missed. To get the exercise started,

participants were given a list of possible uses typical of a coastal environment, as shown below, and were instructed to add any relevant uses not shown:

1. Community Fisheries
2. Commercial Fisheries
3. Tourism
4. Ports and harbors
5. Pipelines
6. Shipping
7. Causeways
8. Seismic/mineral Surveys
9. Deep Sea Mining
10. Channels
11. Pollution

Participants added the following uses during the discussion

12. Estuary
13. Slipway
14. Submarine Cable
15. Public recreational use
16. Conservation Area
17. Sand mining

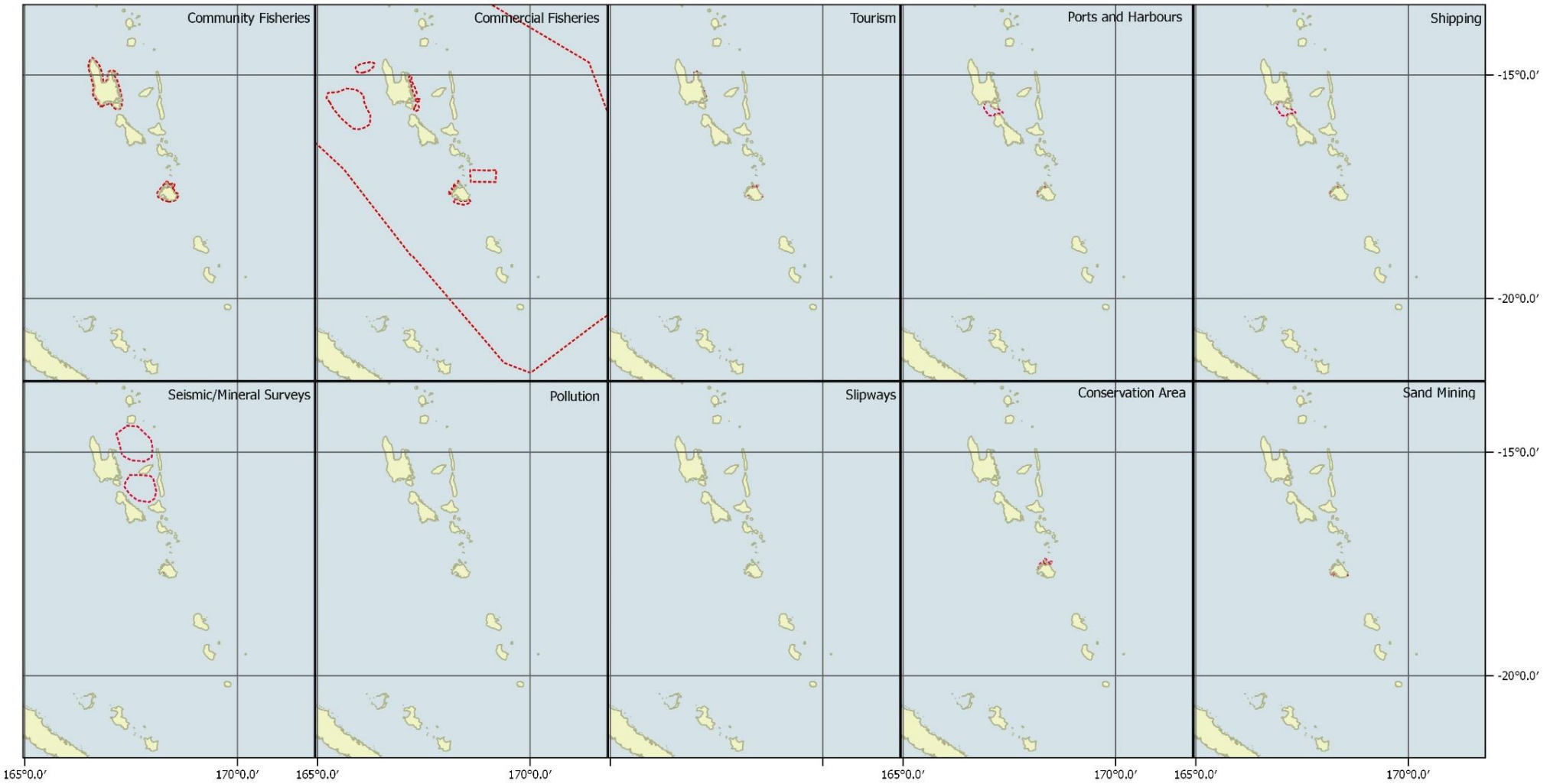
And the following sub categories:

2. Commercial Fishing
    - 2.1 Deep bottom fishing
    - 2.2 Long line fishing (12nm to 200nm)

Results[10]

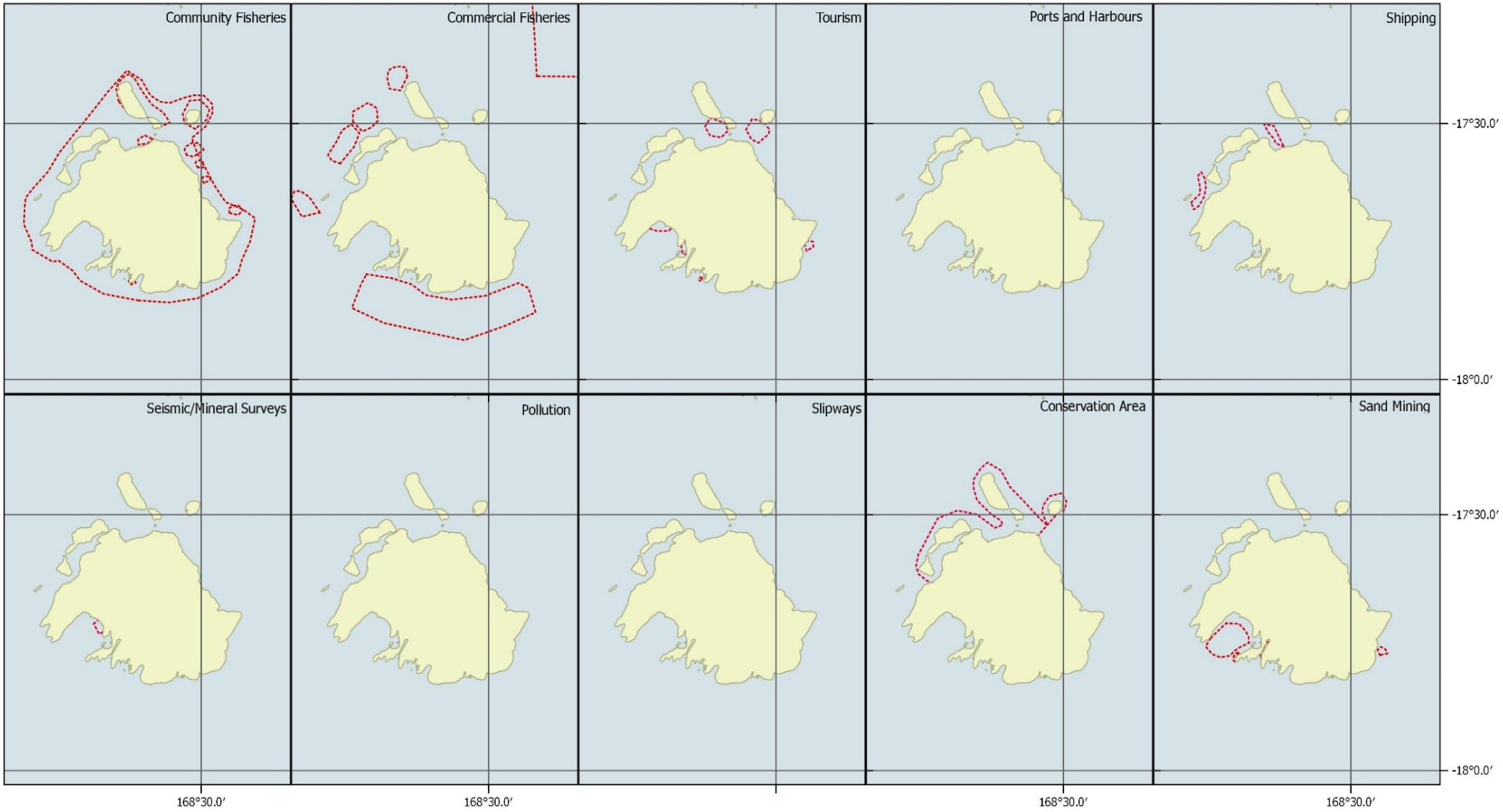
In this exercise, the participants identified some of the uses of marine environment of Vanuatu, focusing in particular on the islands of Efate and Espiritu Santo as shown below:

[10] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.



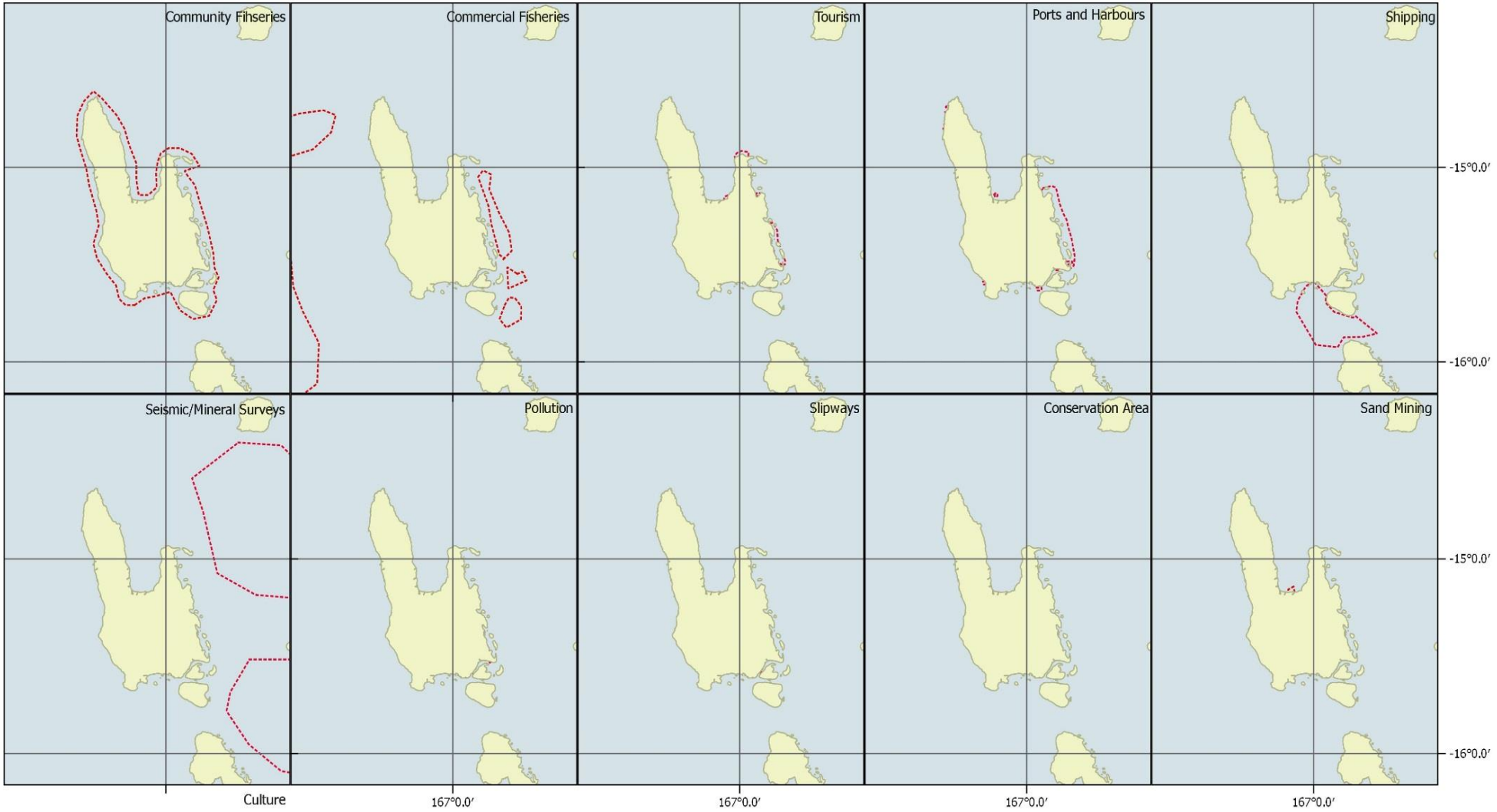
Select Marine Uses
Vanuatu

Sustainable Ocean Initiative National Workshop for Vanuatu
23th -24h November 2016, Port Vila, Vanuatu



Select Marine Uses
Efate Island, Vanuatu

Sustainable Ocean Initiative National Workshop for Vanuatu
23th -24h November 2016, Port Vila, Vanuatu



Select Marine Uses
Epirutu Santo, Vanuatu

Sustainable Ocean Initiative National Workshop for Vanuatu
23th -24h November 2016, Port Vila, Vanuatu

Practical Exercise (Part 2)

In the second part of the exercise on use and pressures, participants were asked to undertake a simple risk assessment of the values identified, in order to understand the potential impacts or benefits of multiple uses and pressures on the values that have been identified in areas that may be important and/or vulnerable. The simplest means of analysis is the direct examination of the interaction of the values identified and the pressures thought to interact with that area. There are two key components to this. First, the pressures that occur within the area need to be identified and assessed to see if there is possible interaction between the pressures and the area. If there is no possible spatial overlap and if the pressures could not reasonably be expected to interact with the values of interest, then the pressure should be considered a low risk with no further consideration required.

Second, expert elicitation can be used to identify and rank the potential risk of impact or benefit from pressures on the values in each relevant subsystem. The elicitation can be either structured or unstructured. Structured elicitation is preferred (as it confers some degree of consistency), but it is not always possible and so unstructured elicitation should not be ruled out if alternatives are not available.

Unstructured elicitation was used in the workshop and may involve a consensus process where a group of experts identify the potential interactions between pressures and values on a scale of consequence (e.g., pressures are "of concern", "of potential concern", "of less concern", "not of concern", "data deficient or not assessed") where a predetermined threshold is identified.

In order to understand how certain pressures might affect the values identified in the previous exercise, participants were asked to consider where these uses overlap with the values that they have identified and characterize the relationship, as follows:

H+	
H	High level of use and impact (-) or benefit (+)
H-	
M+	
M	Moderate level of use and impact (-) or benefit (+)
M-	
L+	
L	Low level of use and impact (-) or benefit (+)
L-	

N/A: No use or impact.
As information and data is gathered and improved, the classification can be refined and supported by more scientific data.
In a full-fledged MSP process, this type of classification would benefit from validation by scientific data, where available.

Results[11]

The characterization of the relationship between uses and values in specific areas in Vanuatu are shown in the table below

Area	Value	Impact of Uses													
		Fishing - community	Fishing – commercial			Tourism	Ports/ harbours	Shipping	Pipelines	Pollution	Estuary	Slipway	Submarine cable	Recreational use	Conserv-ation
			Not specified	Deep Bottom Fishing	Long line fishing										
Champagne Beach	Not specified	L-	NA	NA	NA	NA	H-	NA	NA	M	NA	NA	NA	H+	M
Champagne Beach	Income for Communities	NA	NA	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA	NA
Champagne Beach	Naturalness	NA	NA	NA	NA	L-	H-	NA	NA	NA	NA	NA	NA	NA	NA
Luganville	not specified	H-	H-	NA	NA	NA	NA	NA	H-	H-	H+	H-	*H+	H	H+
Luganville	Biological Productivity	H+	NA	NA	NA	NA	H-	NA	NA	NA	NA	NA	NA	NA	NA
Luganville	Biological Diversity	H-	NA	NA	NA	NA	H-	NA	NA	NA	H+	NA	NA	NA	NA
Luganville	Special importance for life history stages of species	H-	NA	NA	NA	NA	H-	NA	NA	NA	NA	NA	NA	NA	NA

[11] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.

Luganville	Income for Communities	H+	NA	NA	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA
Luganville	Economic valuation	H+	NA	NA	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA
Big Bay	Not specified	NA	NA	NA	NA	M	NA	NA	*H+	NA	NA	NA	NA	NA	H+
Big Bay	Community Income	H+	NA	NA	NA	NA	H+	NA	NA	M-	H+	NA	NA	H+	NA
Big Bay	Food	H+	NA	NA	NA	NA	L-	NA	NA	M-	H+	NA	NA	H-	NA
Big Bay	Economic valuation	NA	H+	NA	NA	NA	H+	NA	NA	M-	H+	NA	NA	H	NA
West coast	not specified	NA	NA	NA	NA	NA	M	NA	NA	H-	H+	NA	H+	M	H+
West Coast	Biological Diversity	H-	H-	NA	NA	M+	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Coast	Uniqueness or rarity	H-	H-	NA	NA	M+	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Coast	Special importance for life history stages of species	L	H	NA	NA	M+	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Coast	Importance for threatened, endangered or declining species and/or habitats	M-	H-	NA	NA	M+	NA	NA	NA	NA	NA	NA	NA	NA	NA
West Coast	Food	M+	H-	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malo	not specified	NA	NA	NA	NA	NA	NA	NA	NA	H-	H+	NA	*H+	NA	H+
Malo	Biological Productivity	H-	H-	NA	NA	H-	H-	NA	*M-	NA	NA	NA	NA	H-	NA
Malo	Naturalness	H-	H-	NA	NA	H-	H-	NA	*H-	NA	NA	NA	NA	H-	NA

Malo	Culture	H-	L	NA	NA	L	L-	NA	*L	NA	NA	NA	NA	M	NA
Malo	Economic valuation	H+	H+	NA	NA	H+	H+	NA	*H+	NA	NA	NA	NA	H+	NA
A	Special importance for life history stages of species	NA	NA	H-	NA	NA	H-	NA	NA	NA	NA	NA	NA	NA	NA
A	Income for Communities	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A	Food	NA	H+	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA	NA
A	Economic valuation	NA	H+	Na	NA	NA	NA	H-	NA	NA	NA	NA	NA	NA	NA
B	Income for Communities	H+	NA	M+	NA	H+	L+	H-	NA	NA	NA	NA	NA	NA	NA
B	Food	M+	M+	Na	NA	NA	NA	M-	NA	NA	NA	NA	NA	NA	NA
B	Economic valuation	m-	M-	NA	NA	H+	H+	NA	NA	L-	NA	NA	NA	NA	NA
C	Importance for threatened, endangered or declining species and/or habitats	H-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C	Income for Communities	H+	NA	H+	H-	H+	NA	NA	NA	NA	NA	NA	NA	NA	NA
C	Food	H+	M+	NA	NA	M-	NA	NA	NA	NA	NA	NA	NA	NA	NA
C	Economic valuation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D	Economic valuation	NA	NA	H+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Discussion

Understanding the potential impacts and benefits of different uses on the values identified in the marine environment will necessarily require the use of a variety of techniques. Issues of knowledge, data availability, cost, and uncertainty all limit the application of many tools and approaches. It might be desirable to have a single tool that could be used to decide on the optimal/most efficient management option, but this is only possible in a limited number of circumstances, and policy makers often prefer a set of options that they can test against additional non-scientific criteria. A hierarchy of tools, moving from simple, rapid and low cost tools that screen out minor risks, to progressively more complex and costly tools would support the prioritisation that managers will typically need to undertake.

In assessing risk there are three key concerns that need to be addressed: (1) there are multiple pressures on the marine environment; (2) some or all of these will have a substantial probability of adversely impacting the social, economic or ecosystem values (high risk); and (3) it is uncertain which ones will have high risk, what the magnitude of that impact will be and what are the likely synergistic effects. A framework is needed that allows rapid assessment and elimination of low risk pressures and a graduated response as risk increases, thus focusing assessment (and management) effort either where risks are greatest and/or where intervention can have most affect.

Future Options

Future efforts may consider adopting an assessment hierarchy with multiple levels of increasing information needs. The first level may be an expert-based assessment of the interaction between the values in the relevant system and identified pressures. This first level of assessment is based on a general conceptual model of the system, while assessment levels two and three require an increased use of mathematical models that provide greater understanding, prediction and scope for management interventions. The second level employs qualitative mathematical models that use the information from the first level to build a more robust understanding of the relevant subsystem. The third level combines the use of qualitative and quantitative models that require extensive data and resources. This might include formal fisheries assessment processes and techniques. Each of the previous levels provides the context and justification for further investigation of risk to ecosystems/values/assets (i.e. triggers for progression to the next level in the hierarchy), or allows a management decision at that level. While the three levels of assessment are laid out as a three-stage progression, they are, in practice, intended to provide a progressive feedback between modelling, monitoring and management activities, as in an adaptive management.

Step 4 – Management and Monitoring

Management Objectives

The information resulting from the previous three steps (Scoping, Values, Uses and Impacts) provides an opportunity to focus on management interventions for particular pressures that are acting on the identified values in specific areas.

The objective of this step is to build on the improved understanding of the ecosystem from the previous steps and to identify the minimum intervention that will ensure that these objectives and priorities are met. Identifying the minimum intervention that is needed will require a good understanding of how the pressures are likely to interact with the values. The minimum intervention should only target the pressures that interact with the values. Using this approach would emphasize the custom of sectoral management arrangements, unless there are cumulative impacts that span multiple sectors. For example, fisheries agencies would be responsible for managing fisheries, except in circumstances where other sectors impacted the same values in the area. If mining were to also be undertaken in the same area, then the cumulative impact of these activities would have to be assessed, resulting in different interventions and involving multiple sectors. Pressures such as land-based run-off and pressures on in-shore ecosystems will also generally require multi-sector integrated management interventions.

In some circumstances, the number of values and complexity of ecosystems might render single sector approaches inefficient and marine protected areas could be seen as an alternative if the values were all required to be maintained.

Monitoring Objectives

This step addresses elements of a process for monitoring and evaluation of the effectiveness of management through indicators. It aims to understand if the management interventions are meeting the operational objectives. Monitoring and evaluation is a means to assess whether management is working and what changes may need to be made.

Monitoring programs should be linked to the operational objectives, and meet three broad requirements; 1) there are appropriate management actions in place with appropriate governance to respond to monitoring; 2) the management actions will result in changed behavior of the resource users and 3) these will lead to an improvement in or sufficiently reduced uncertainty in the indicator.

There are four components of monitoring:

1. **Objectives:** What do you want to achieve?
2. **Indicator:** What you will measure?
3. **Target:** If the indicator meets this, then the objective is achieved?
4. **Time**: The time by which the target will be met.

Different types of categories of monitoring can also be considered, such as governance, social/economic and fisheries/environmental.

Practical Exercise 1:

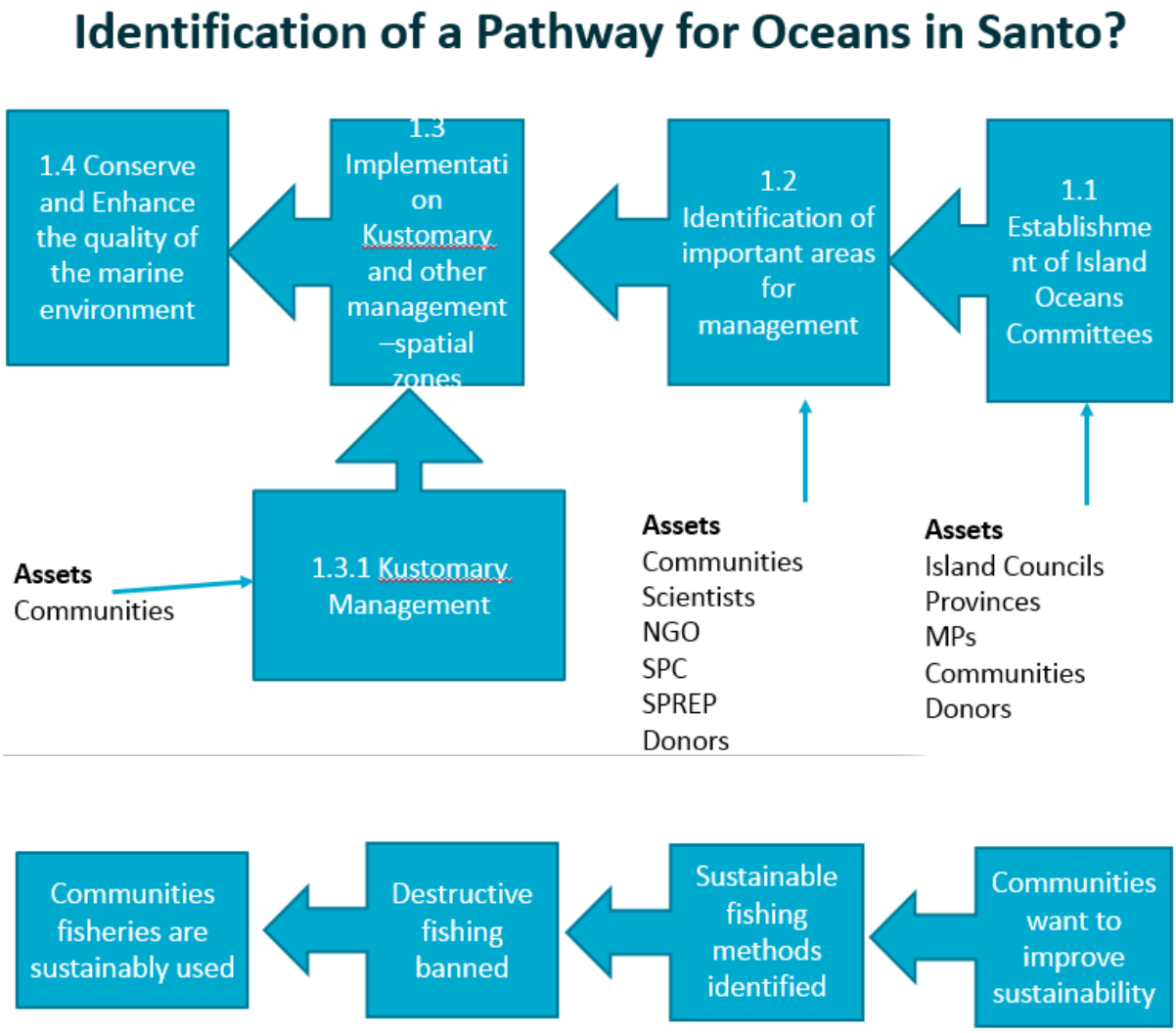
Identification of pathways to achieve objectives (how to move from current state to the desired outcome?)

Options for management.

- All the areas in Santo have been identified for different reasons – meeting different criteria.
- There is a wide variety of uses, but they are not all distributed evenly in space and not all interact with the values.
- Things to Consider:
    1. What are the objective you want to achieve – the policy actions?
    2. What are the values you identified in what areas?
    3. What uses are identified in what areas?
    4. What activities need to happen to get from the status today to meet the policy actions you've identified?
    5. Are there opportunities to allow some activities in some areas and not in others?

Identification of a Pathway to implement National Ocean Policy in Santo

- Task 1 – Identify the policy actions that are relevant to the area selected, there can be more than one (*The objectives)*
- Task 2 – Identify the current state of the area, the values, the uses, the impacts and benefits (*The current state)*
- Task 3 – Identify the sequence of activities/spatial management that are needed to change from the current state to reach the desired objective (*The pathway)*
- Task 4 – For each activity, which of the human, cultural, financial and institutional assets need to be used?



In part 1 of this step's practical exercise, participants focused on management options for a number of developments in areas around Vanuatu, assessing their impact on the values and priorities identified in previous steps. The identified areas for the practical exercise showcase a variety of development types with different impacts potentially affecting a multitude of values and priorities.

For these development locations, participants were asked to think about what types of spatial management will allow Vanuatu to maintain and achieve the priorities identified in Step 1 while balancing the values and uses from Steps 2 and 3. There is a wide variety of uses in Vanuatu, but they are not all distributed evenly in space and not all interact with the values.

Results[12]

In this exercise, the participants identified some of the uses of marine environment of Vanuatu, focusing in particular on the islands of Efate and Espiritu Santo as shown below. Participants were asked to:

- Choose 2 of the Policy Actions that were identified in the first session.
- For each one, create a Pathway for implementation for Santo.
    - Task 1 – Identify the policy actions that are relevant to the area selected, there can be more than one. *The objectives*
    - Task 2 – Identify the current state of the area, the values, the uses, the impacts and benefits. *The current state*
    - Task 3 – Identify the sequence of activities/spatial management that are needed to change from the current state to reach the desired objective. *The pathway. Label each activity so they can be identified*
    - Task 4 – For each activity, which of the human, cultural, financial and institutional assets need to be used?

Practical Exercise 2: Development of a monitoring and evaluation plan.

Breakout groups were then presented with an exercise for monitoring and evaluation as follows:

- Chose one of the management areas addressed in session 4
- Develop monitoring for each management action, using the objective selected, and
- List the indicator/target/time for each management action/objective
- Each of the objectives/indicators/targets/timeframes must be linked to the priorities from session 1
- Consider whether the priorities from session 1 might need to be adjusted

[12] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.

Results[13]

The breakout groups each returned to one of the primary objectives that they identified on the first day, and considering the major uses identified related to this objective, what management actions needed to achieve the objective. Some examples of the group results are as follows:

POLICY ACTION 6.2.1.1—*Rebuild the stocks of fisheries resources (e.g. coconut crabs, lobster, sea cucumber, trochus, clams) by identifying and implementing targets for each fishery to stabilise the net income of the operators in the fisheries; ensure sustainable harvests; and promote co-management of the fisheries.*

<table>
<tr><th colspan="2">Current State of Area</th><th colspan="2">Sequence of activities/spatial management needed to change from current state to reach desired objective</th><th colspan="2">Human, cultural, financial and institutional assets to be used</th></tr>
<tr><th>Values</th><th>Uses</th><th>Policy Action: Secure Rights</th><th>Policy Action: Fishery Management</th><th>Policy Action: Secure Rights</th><th>Policy Action: Fishery Management</th></tr>
<tr><td>Value (4)
Special importance for life history stages of species</td><td>Deep bottom fishing and shipping → high impact on value 4</td><td rowspan="2">1. Legislative Review

--Identify laws that talk about rights relevant to the</td><td rowspan="2">1. Desktop analysis
--Mapping marine areas (reefs, mangroves, sea mounts, sea grass)

2. Resource</td><td rowspan="2"></td><td rowspan="2"><u>Resources</u>
--Community
--Council
--Province
--Government
--NGOs</td></tr>
<tr><td>Value (5)</td><td>--Community</td></tr>
</table>

[13] Disclaimer: It is important to note that the workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices or ministries involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information and knowledge of the workshop participants.

Importance to threatened endangered and declining species and/or habitats.	fishing has high impact on value 5 --Tourism has moderate impact on value 5	ocean. --Review current legislation where applicable. 2. Consultation --Consultation on different boundaries of management with relevant stakeholders --Consultation on results from legislative review --Consultation done at different levels (National, provincial, island and community levels) 3. Boundary mapping for resource management --Incorporate current land boundaries to	management --Socio-economic survey --Current status of marine resources --Marine activities occurring in the area --Map out existing marine protected areas (MPAs) 3. Present findings to committees --Get feedback --Encourage successful MPA's --Propose alternative for unsuccessful areas 4. Based on findings, propose management measures supported by existing fishery laws. --MPAs		--Local scientists --Universities --CSIRO --MACBIO <u>Monitoring Indicators</u> 1. Legislative review to be completed in 6 months 2. The boundary mapping of Santo to be completed within 1 year. 3. Conduct awareness-building for the 9 area councils of Santo within 3 months
Value (8) Income for communities	--Community fishing has high impact on value 8 --Deep bottom fishing has moderate to high benefit on value 8 --Ports and harbours has low benefit on value --Shipping has high impact on value 8				
Value (9) Food	--Community fisheries has moderate to high benefit on value				

	9 --Deep bottom fisheries has moderate impact to high benefit to value 9 --Tourism has moderate impact to value 9 but also high benefit to value 9.	include ocean boundaries. 4. Awareness to communities of boundaries at all levels (National, provincial, island and community) 5. Legislate and regulate	--Traditional conservation --Use existing community management plan for areas that do not have one --Also encourage the use of custom laws in relation to the marine 5. Rebuild stock --Mari culture/ aquaculture --Fishing aggregating device (FAD) 6. Enforcement and Surveillance --Recognise and empower traditional ways of enforcement --Harmonize traditional with fisheries legislation		
Value (11) Culture					
Value (13) Economic valuation	--Community fishing has moderate impact on value 13. --Deep bottom fishing has moderate impact on value 14 but high benefit on value 13. --Longline fishing has high benefit to value				

	13. --Tourism and ports and harbour have benefit to value 13		7. Monitoring --Ongoing --Reporting		

POLICY ACTION 3.2.2.1—*Recognise and support traditional marine resource management, use and governance systems including, where appropriate, within formal legal arrangements*.

Current State			**Activities**
Values	**Uses**	**Impacts** **Benefits**	**Management of impacts** • <u>Strengthen traditional knowledge and practice</u> Step 1 o Traditional community level workshops o Introduce traditional knowledge (informal) community education o Promote traditional activities in communities o Document traditional marine toolkit textbook/education materials Step 2 o Find opportunities o Partners (VKS, NGO's) Step 3 o Youth development (e.g., educational curriculum, training centre) o Pilot sites in provinces that link to implementation plans with relevant stakeholders
• Uphold integrity of culture *improve coordination among locally based and managed MPA's and tabu sites • Biological diversity • Food	Community usage	• Population growth pressure • Land dispute • Special ceremonial event	

			• <u>Ban modern fishing tools and allow traditional tools that encourage sustainability.</u> Step 1 o Government/province by-laws for days for traditional marine fishing o Control licensing of fishing gear (net) • <u>Bartering system initiative</u> Step 1 o Initiate bartering system o Incorporate into provincial by-laws, laws • <u>Deal with land dispute at the cultural level</u> o Strengthen MALVATUMAURI o Lands commission o VKS

POLICY ACTION 6.1.2.2.3—*Improve coordination among locally based and managed MPA's and tabu sites.*

Area	Current State			Activities/Spatial Management
Vathe (Tabu Site)	**Values**	**Uses**	**Impacts Benefits**	Alternatives • Incentives • Awareness about harvest period • Regular communication between government and communities (relevant ministries) • Capacities on management • Aquaculture • Regulation compliance Step 1:

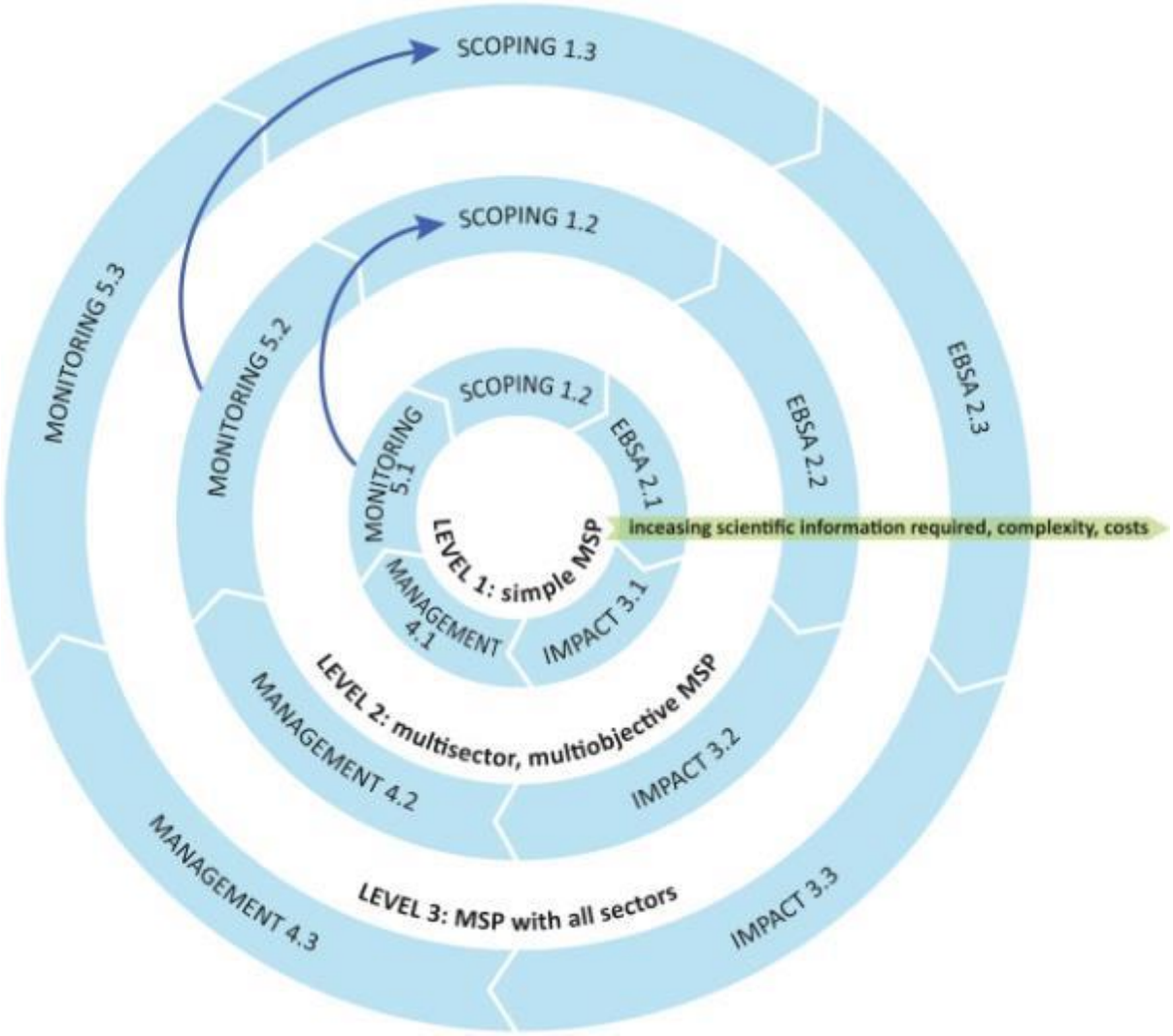
	Include all other 4 MPA's 1. Biological Productivity/ Diversity 2. Naturalness 3. Food (fish, coconut, crabs)	*Include all other 4 MPA's* 1. Tourism 2. Communities usage 3. Scientist	***Tourism*** V1 => H^+ V2 => H^+ V3 => H^+ Tourism has 3 positive impact ***Communities Usage*** V1 => H^- V2 => H^- V3 => H^- Communities has 3 negative impact ***Scientists*** V1 => H^- V2 => H+ V3 => M	Review management plan I.D alternatives I.D. Incentives Step 2: • Finalize management plan • Implement Alternative eg. Aquaculture (relevant Ministries) • Ecotourism • Research Awareness back to communities Step 3: • Monitoring • Enforcement • Establishment • of new MPA's capacities on management to build **Assets** • Human: • Chiefs, communities, councils • Cultural Government investments and donors • Financial: Traditional practices, Tabu Sites • Institutional fisheries, tourism, Malvatumauri ministries, NGO's **Indicators** ***Indictor:*** Review template of management plan ***Timeframe:*** 15 years ***Target:*** 5 MPAs would have used revised management ***Indicator:*** Communities prove that management plans work ***Timeframe:*** 1-5 years ***Target:*** large number of communities engaged in showing management plan success.

Future Options

Future efforts may want to consider:

- Implementing a further cycle of identification of operational objectives with clearly articulated thresholds to trigger actions from conceptual ecosystem models. These thresholds may result from a formal process of expert and stakeholder elicitation (e.g. Hosack and Dambacher, 2012). The links between pressures and values should be identified and a heuristic understanding of the whole ecosystem should be used to identify which management interventions will have the greatest impact.
- Building qualitative models using an improved understanding of ecosystem structure, building on knowledge from monitoring and scientific sampling. These models can be used to identify the direct and indirect impacts of pressures on biodiversity values.
- Undertaking a management strategy evaluation using qualitative, statistical and numerical ecosystem models to identify thresholds and alternative management scenarios to meet operational objectives.
- Utilise existing programs and capabilities to monitor the pressures and values identified for each area meeting the value criteria, if these programs are suitably located.
- Developing heuristic understanding of how the area has changed, based on, for example, monitoring of similar systems where existing programs are suitably located, and/or from partial observation of the system's components/processes.
- Building capacity to target particular values and identify the degree of confidence on the current state of each biodiversity value. Target scientific sampling linked to operational objectives.
- Developing and implementing a full scientific monitoring program with a sampling design to allow identification of thresholds and trends from the data
- Utilising statistical models to track performance and trends of values relative to the operational objectives
- Identifying indicators that have improved with additional data.

Appendix 1 – CSIRO EBSA Marine Spatial Planning process diagram



The schematic diagram of the process to use scientific information related to EBSAs within an MSP/EBM framework. It is similar to many other frameworks, with the exception that it acknowledges that it is MSP/EBM. It can be started with very simple tools and slowly built upon as capacity and scientific understanding increases.[14] Please see: Dunstan PK et al (2016) Using Ecologically or Biologically Significant Areas to implement Marine Spatial Planning. Ocean and Coastal Management 121: 116-127.

[14] Dunstan PK, Bax NJ, Dambacher JM, Hayes KR, Hedge PT, Smith DC, Smith ADM (2016) Using Ecologically or Biologically Significant Areas to implement Marine Spatial Planning. Ocean and Coastal Management 121: 116-127.

Appendix 2 - List of Participants

NAME (POSITION)	INSTITUTION/ORGANIZATION
Henry Worek (Director of Ports)	Ports and Harbor
Markmon Bati (Maritime Affairs Commissioner)	Ports and Harbor
Donna Kalfatak (Senior Biodiversity Officer)	Department of Environmental Protection and Conservation
Reedly Tari (Assistant Director)	Department of Environmental Protection and Conservation
Vatu Molisa (IUCN Project Liaison Officer)	Department of Environmental Protection and Conservation
Mark Kalotap (NBSAP Project Coordinator)	Department of Environmental Protection and Conservation
Jayven Ham (Research Officer)	Department of Fisheries
Christopher Arthur (Policy Officer)	Department of Fisheries
Ben Malas (DG Foreign Affairs)	Ministry of Foreign Affairs
Charles Lini (Political Advisor)	Ministry of Foreign Affairs
Toney Tevi (Head of Maritime and Ocean Affairs)	Ministry of Foreign Affairs
Sheena Luankon (Senior Desk Officer)	Ministry of Foreign Affairs
Ionie Bolenga (Senior Desk Officer)	Ministry of Foreign Affairs
Roel Tari (Desk Officer, Maritime)	Ministry of Foreign Affairs
Dreli Solomon (Senior Desk Officer)	Ministry of Foreign Affairs
Majorie Wells (Desk Officer – Treaties and Conventions)	Ministry of Foreign Affairs
Stephanie Haruel (Desk Officer – Asia/Pacific Division)	Ministry of Foreign Affairs
Wycliff Bakeo	Office of the Prime Minister
Judah Garoleo (Principal National HRD)	Ministry of Education and Training
John Stephen Huri (Senior Trademark Specialist)	Ministry of Trade
Brooks Rakau (Geology and Mines Unit)	Ministry of Lands and Natural Resources
Yakar Silas (PMW Officer)	Police Department
Dicky George (PMW Officer)	Police Department
Owen Joel Sisi (Acting Physical Planning Officer)	Shefa Provincial Government Council
Palen Arthur	Secretary General MALAMPA Province

Reuben Neriam	Aneityum Area Secretary TAFEA Province
Junila Sese (Science Teacher)	Vanuatu Cultural Centre
Edson Willie, Archaeologist	Vanuatu Cultural Centre
Karae Vurobaravo	Office of Government Chief Information Officer
Jean Pierre Tom (CEO)	Malvatumauri
Kizzy Kalsakau (Reporter/Broadcaster)	Media – Vanuatu Daily Post
Glenda Willie (Reporter)	Media – Vanuatu Daily Post
Joseph Appiott (Associate Programme Officer)	Secretariat of the Convention on Biological Diversity
Piers Dunstan (Research Scientist)	CSIRO/Australia
Jan H Steffen (Project Director)	MACBIO
Leanne Fernandes (Senior Project Advisor)	MACBIO
Jonah Sullivan (GIS Officer)	MACBIO
Tess Newton Cain (Principal)	The Nature Conservancy-Pacific Consulting

Appendix 3 – Workshop Programme

Workshop Chair : Mr. Toney Tevi, Head, Maritime and Ocean Affairs Division, Ministry of Foreign Affairs, Vanuatu

Wednesday, 23 November	
9 to 9:30 a.m.	*Opening prayer* **Agenda Item 1. Opening** • Representative of H.E. Mr. Bruno Leingkone, Minister for Foreign Affairs, International Cooperation and External Trade ▪ Representative of the Executive Secretary of the CBD *Group photo*
9:30 to 10 a.m.	*Coffee/tea break*
10 to 10.30 a.m.	**Agenda Item 2. Workshop background, objectives, scope and expected outputs.** 2.1 Presentation by Joe Appiott (CBD Secretariat) • Global context (Convention on Biological Diversity, Aichi Biodiversity Targets; Sustainable Development Goals) • Workshop background, objectives and scope 2.2 Roundtable introduction of participants • Plenary discussion on the needs and expectations of participants for the workshop
10.30 to 11.30a.m.	**Agenda Item 3. National priorities for Vanuatu to implement the National Ocean Policy** 3.1 National context • Presentation on National Sustainable Development Policy • Presentation on National Ocean Policy • Introduction of existing work on implementation plans (e.g., shipping/ports, fisheries, tourism, environment) 3.2 Discussion to identify which components of the National Ocean Policy require implementation plans
11.30a.m. to 12.30p.m.	3.3 Presentation by Piers Dunstan (CSIRO) • Workshop approach • Marine spatial planning (MSP) and integrated management 3.4 Group exercise on identifying important objectives in National Ocean Policy
12.30 to 1.30 p.m.	Lunch
1.30 to 3 p.m.	**Agenda Item 4. Identification of the values of marine resources in Vanuatu (economic, social and environmental) and assets in**

	Vanuatu to support conservation and sustainable use 4.1 Group exercise on identifying the important and valuable areas in Vanuatu for social, cultural, environmental and economic reasons
3 to 4 p.m.	*Coffee/tea break*
4 to 5.30 p.m.	4.2 Identification of Vanuatu's assets (human, implementing, financial) that can be used to support management

Thursday, 24 November	
9 to 9:30 a.m.	**Review the results of day 1**
9:30 to 10:30.m.	**Agenda item 5. Current status of use of Vanuatu's marine resources** 5.1 Group exercise on critical issues related to marine resource management in Vanuatu • How and where are people using Vanuatu's marine resources in different ways? ○ Identification of different uses of Vanuatu's marine resources on maps
10.30 a.m. to 10:45 a.m.	*Coffee/tea break*
10:45 a.m. to 12 p.m.	*Agenda item 5 continued*
12 p.m. to 1 p.m.	*Lunch*
1 p.m. to 2:45 p.m.	**Agenda Item 6. Identification of pathways to achieve objectives (how to move from current state to the desired outcome?).** • What management is needed to ensure that outcomes in the National Ocean Policy are achieved? • How can Vanuatu's assets (human, implementing, financial) be maximized and supported in order to achieve outcomes?
2.45 to 3 p.m.	*Coffee/tea break*
3 to 4 p.m.	*Agenda item 6 continued*
4 to 5p.m.	• Group exercise on addressing new uses of ocean space

Friday, 25 November	
9 to 9:30 a.m.	**Review the results of day 2**
9:30 to 10:30 a.m.	**Agenda Item 7. Monitoring and evaluation: How to tell if we are on a path to achieve objectives.** 7.1 Group exercise on developing and implementing effective monitoring and evaluation of the pathways outlined in the previous session 7.2 Discussion on how these indicators connect to the objectives in National Ocean Policy

10.30 to 11 a.m.	*Coffee/tea break*
11 a.m. to 12 p.m.	*Agenda item 6 continued*
12 to 1 p.m.	*Lunch*
1 to 3 p.m.	7.3 Discussion on potential next steps for Vanuatu to operationalize the pathways based on the workshop discussions
3 to 3:30 p.m.	*Coffee/tea break*
3:30 to 4 p.m.	**Agenda item 8. Closure of the workshop**