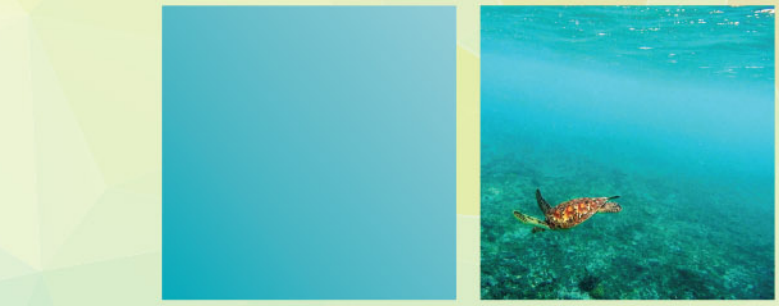
Integrated Island Biodiversity
Technical Series

Nauru Training Workshop on Marine Spatial Planning

GEF-PAS Integrated Island Biodiversity (IIB) Project
Republic of Nauru

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GEF-PAS INTEGRATED ISLAND BIODIVERSITY (IIB) PROJECT: NAURU TRAINING WORKSHOP ON MARINE SPATIAL PLANNING

8 - 12th February, 2016

Workshop and report by
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FOREWORD

This report presents the process and results of the Marine Spatial Planning (MSP) training workshop carried out in the marine environment in the Republic of Nauru, February 8-12, 2016. The Nauruan MSP workshop was an initiative of the GEF-PAS Integrated Island Biodiversity (IIB) Project executed by the Secretariat of the Pacific Regional Environment Programme (SPREP), conducted in a collaborative partnership with the Nauru Fisheries and Marine Resources Authority (NFMRA), the Department of Commerce Industry and Environment (DCIE), Government of Nauru and the Commonwealth Scientific and Industrial Research Organization (CSIRO) of Australia (through the Enhancing Pacific Ocean Governance, EPOG, project, funded by Australian Aid).

The GEF-PAS IIB project, funded by the Global Environment Facility (GEF), primary goal is *"To improve the well-being of Pacific Island communities by applying an ecosystem approach to the conservation of ecosystems, species and genetic diversity in the Pacific region".*

The overall objective of the training was to introduce MSP to relevant Nauruan government authorities, communities and Non-government organisations, building their capacity in applying key MSP principles to assist them in the development of a draft marine spatial plan for Nauru and work towards achieving sustainable use of their marine environment. The training was primarily for Nauruan stakeholders, however, participants from other GEF-PAS IIB project countries in the Cook Islands, Tonga and Tuvalu also attended the training as part of SPREP's regional approach to enhance knowledge and understanding on the importance of MSP as a tool for sustainable resource management. The intention was for participants to utilize and apply the skills learned to implement their respective GEF-PAS IIB activities in their respective countries.

Acknowledgements

SPREP would like to thank the Nauru Fisheries and Marine Resources Authority (NFMRA), the Department of Commerce Industry and Environment (DCIE), Government of Nauru, community members and the Commonwealth Scientific and Industrial Research Organization (CSIRO) of Australia for making the Nauruan Marine Spatial Planning Training Workshop possible. A special thank you to GEF-PAS IIB participants from the Cook Islands, Tonga and Tuvalu for their active participation and in sharing their experiences and knowledge with the Nauru participants.

Background

During a SPREP GEF-PAS IIB monitoring visit to Nauru in April 2015, NFMRA expressed interest in obtaining specialized training on Geographical Information System (GIS) and MSP to help enhance their capacities on coastal and marine resource management. Similarly, MSP was first proposed by SPREP as a key follow-on activity from the Nauru Rapid Biodiversity Assessment (BIORAP) marine survey which was conducted under the GEF-PAS IIB project in 2013.

As an outcome of the discussions between SPREP and NFRMA, plans were then initiated for technical assistance from SPREP to conduct a training on GIS and MSP as part of a process towards the preparation of a draft Marine Spatial Plan for Nauru as an activity of the GEF-PAS IIB Project to be conducted in early 2016.

Through NFRMA, 14 Nauruan districts also expressed the need for greater marine planning and management of their coastal and marine resources in order to achieve sustainable use, maintain biodiversity, and support local livelihoods, culture and well-being, showing interest in establishing marine protected areas, where appropriate. Furthermore, the national government has endorsed the Nauru BIORAP and its recommendations, which included to *"set up marine managed/protected areas as a matter of*

urgency, including no-take areas in consultation with all local stakeholders." The training process outlined in this report will assist stakeholders in developing their skills and process of identifying marine sites and areas of importance to both communities and at the national level to assist in a Marine Spatial Planning Process to be mandated by the Republic of Nauru.

The Republic of Nauru made clear that at this stage the area considered during the training will be restricted to within the 12 nautical mile limit of the island of Nauru. The scope of the process may expand out into full Nauru Exclusive Economic Zone (EEZ) in future MSP work.

What is Marine Spatial Planning?

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. Marine Spatial Planning allows for effective stakeholder discussions and process on how marine and coastal areas can be used effectively and sustainably. The process considers the interactions between uses of marine areas and resources, and seeks to balance demands for development with the need to protect marine ecosystems, and to achieve social and economic objectives in an open and planned way. As such, the marine spatial planning process recognises 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 (Ehler and Douvere 2009):

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

Marine spatial planning 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 connectivities).

Importantly, MSP does not lead to a single, one-off plan. It is an on-going responsibility of sustainable and wise-use management, and the adaptive element of MSP calls for regular review and revision of the plan. A marine spatial planning process and series of review cycles would attempt to include the following steps, not as a linear process, but with various overlaps and feedback loops depending on local circumstances:

1. Identifying the need and establishing a governing authority to drive the MSP process

i. Analyse the legislative basis for MSP

ii. Define MSP spatial scope and objectives

2. Obtaining financial support

3. Organising the process through pre-planning

4. Organising stakeholder participation

5. Defining and analysing existing conditions (with expert and stakeholder consultations)

i. Collate and analyse biophysical and spatial data and bioregion principles

ii. Draft marine bioregions

iii. Define special and unique marine areas

6. Defining and analysing future conditions

i. Define zoning typology to be applied

ii. Describe zone placement guidelines/design criteria

7. Preparing and approving the spatial management plan (with expert and stakeholder consultations)

i. Prepare draft zoning and resource use plan and consultations for feedback

ii. Stakeholder consultations

iii. Revision of draft plan into final

8. Gazetting the final spatial management plan (plus public consultations on the plan).

9. Implementing and enforcing the spatial management plan

10. Monitoring and evaluating performance

11. Adapting the marine spatial management process (a new MSP cycle)

Depending on local circumstances, the scope of work under each of these steps may be variable; some steps may be merged, simplified and delivered in slightly different order. A streamlined interpretation of the MSP process is described in the following section.

MARINE SPATIAL PLANNING WORKSHOP PROCESS OVERVIEW

The purpose of the Nauru MSP training workshop was to apply a full cycle of the MSP process using local stakeholder knowledge on values, uses, pressures, interactions and future aspirations in Nauru's marine environment. Specific focus was made on opportunities to provide management of Nauru's ecosystems and species, also noting 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 Nauru workshop was to identify areas of social and ecological value and to investigate opportunities for establishing marine and coastal managed areas. A fundamental principle is that decision-making should rest with resource owners and communities.

The workshop was structured to work through a single itineration of a Marine Spatial Planning process devised by CSIRO (Dunstan et al. 2016), drawing on existing MSP expertise existing at SPREP and CSIRO. It was designed based on both 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.

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.

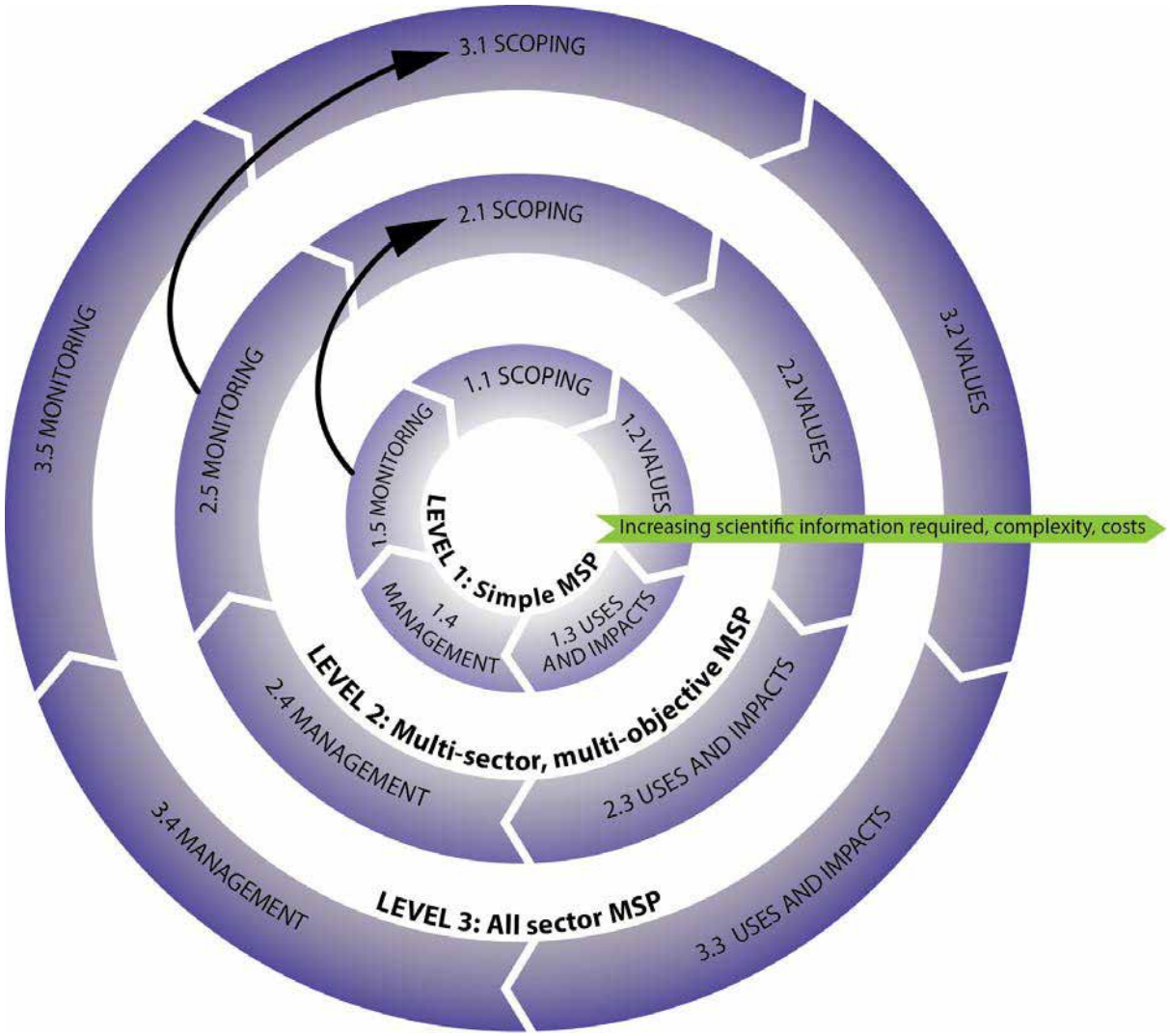


Figure 1: The MSP Process for Nauruan MSP Training Workshop. Adapted from CSIROs EBSA MSP Diagram, see Appendix 1.

STEP 1 – SCOPING

Objectives

The aim of the initial phase of the Marine Spatial Planning process is to obtain an understanding of the stakeholders political, institutional, legislative, motivations and social domain for management in the marine environment. Scoping the policy landscape will identify opportunities available to Nauru's 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. Framework for a Pacific Oceanscape) 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 the 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). The 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 asked to identify and describe the existing objectives and priorities they have for marine management in Nauru. The participants were asked to think about what the priorities at a community scale, national scale and how or if these related to any priorities at a regional scale

Key questions for participants were:

- What are the current priorities for the ocean and coast in Nauru?
- What are the national plans (e.g. Development plan, Fisheries plan, National Biodiversity Strategies and Action Plans (NBSAP)?
- What are the international commitments (e.g. Framework for Pacific Oceanscape, Samoa pathway)?

What do the communities want to see?

Following identifying priorities and objectives, participants were then asked to look at their priorities and objectives they identified and see if there were complementary or overlapping instances, or were any conflicting priorities.

Results

The priority and objectives results (grouped by Communities, Capacity Development, Environment or Fisheries sectors) from the group work were as follows:

	Priority/Objective	Sector	Priority ID
1	Establish robust information base to planning and management support (including spatial data)	Fisheries	F1
2	Revisit Fisheries Act to: · Include coastal areas and communities · Empower Communities to manage their coastal area · Ensure sustainable Marine resources	Fisheries	F2
3	Develop alternate livelihoods including aquaculture	Fisheries	F3
4	Educate communities e.g. no take zones, where they are and explore alternative livelihoods for communities.	Fisheries	F4
5	Revisit Environmental Act to include coastal areas and communities	Environment	E1
6	Source funding for environmental projects (including invasive species/quarantine/biosecurity, biodiversity assessments)	Environment	E2
7	Meet international requirements for biodiversity	Environment	E3
8	Enhance GEF Ridge to Reef outputs	Environment	E4
9	Increase environmental protection	Environment	E5
10	Empowering communities to protect key marine resources	Environment	E6
11	Create awareness about food cycle and understanding their marine resources	Communities	C1
12	Establish and enforce legislations to support local management of marine resources	Communities	C2
13	Establish local community structure to manage marine resources	Communities	C3
14	Enforcement of initiatives including invasive species/quarantine/ biosecurity, biodiversity assessments	Capacity Development	CD1
15	Data (including spatial data) collection, methods and analysis	Capacity Development	CD2
16	Build community capacity to manage local resources	Capacity Development	CD3
17	Build NGO capacity	Capacity Development	CD4

The participants identified the following priorities and objectives were complimentary and overlapped:

F2 - Revisit Fisheries Act to: Include coastal areas and communities, Empower Communities to manage their coastal area, ensure sustainable marine resources

F3 - Develop alternate livelihoods including aquaculture

C3 - Establish local community structure to manage marine resources

C1 - Create awareness about food cycle and understanding their marine resources

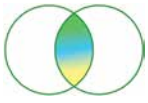
C3 - Establish local community structure to manage marine resources

E6 - Empowering communities to protect key marine resources

CD3 - Build community capacity to manage local resources

E3 – Meet international requirements for biodiversity

E6 – Empowering communities to protect key marine resources



C3 – Establish local community structure to manage marine resources

CD2 – Data (including spatial data) collection, methods and analysis

The participants identified the following priority and objectives could potentially be in conflict with each other:

F3 - Develop alternate livelihoods including aquaculture

E2 - Source funding for environmental projects (including invasive species, quarantine, biosecurity, biodiversity assessments)

E5 - Revisit Environmental Act to include coastal areas and communities

Commercial Housing Development on pristine coastal site

Wetlands and heritage site preservation

Discussion

The results showed a number of priorities and objectives from four key sectors that reflected the participant's backgrounds: Fisheries, Environment, Community and Capacity Development.

A number of these priorities were complimentary, and strategically targeting them as a group could address a number of priorities across multiple sectors. Conflicting priorities showed a need to involve relevant sectors in the scoping phase of the process to align future management plans. This exercise also assists in identifying policy gaps where priorities and objectives of stakeholders have not yet been addressed.

Future Options

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

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 governmental policy makers would make a good addition to 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 NBSAPs.

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 and areas that are significant and important to stakeholders. Areas that are important can be considered to have value placed on them, within a socio-economic context (Gomez-Baggethun and Martin Lopez 2015). There are three broad categories of values that could be described in the marine environment, ecological, socio-cultural and monetary. The value systems identified within national frameworks have been useful as prioritisation 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 identify criteria that can be used to describe significant or important areas.

To assist in the development of a preliminary national set of values the workshop adopted an international agreed upon set of ecological values, as described in the CBD EBSA criteria set (UNEP/CBD/COP/DEC/IX/20). The application of these has been described in Bax et al. (2016). The EBSA criteria and approach to identification of areas are clear descriptions of ecological value and share many of the criteria with the socio-economic valuations suggested by DeGroot (2003). Given the overlap with other criteria sets and the universal acceptance of the CBD criteria by all countries party to the CBD, the EBSA criteria provide a base set of criteria that can be used and adapted to other purposes, and feed other international processes where appropriate.

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. The Human well-being indicators described there were derived and simplified from the Millennium Ecosystem Assessment (2005).

The ideas outlined in Baggethun and Martin Lopez (2015) suggest how social and cultural values could be included into national or regional values frameworks. There are significant challenges in adopting this approach, particularly around scale and engagements with the all the relevant stakeholders. However, having a unified framework to consider ecological, social/cultural and economic values describing areas from different groups of stakeholders would provide a key component of Marine Spatial Planning.

Practical Exercise

Participants were asked consider "what are the important and valuable in-shore marine areas (large or small) in Nauru?" Participants were asked to identify these areas and spatially locate them on large hardcopy maps.

At the same time, participants were asked to think about "what made these areas valuable to them from an environmental, ecological, socio-cultural and monetary point of view?" and register whether they had these attributes. Participants were given a suggested list of 13 values criteria to work with (below) and encouraged to add their own criteria to fully describe areas around Nauru:

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

During the exercise participants were encouraged to:

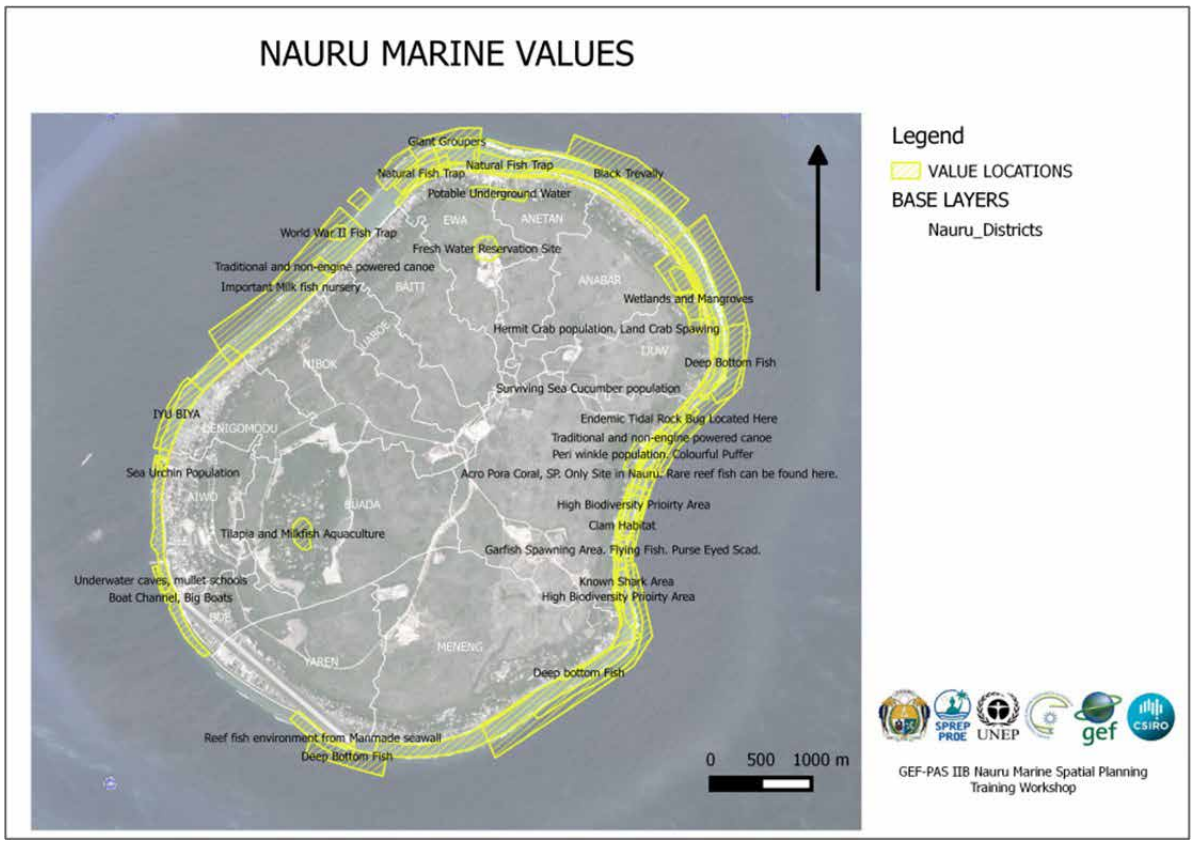
14. Identify different areas that meet more than one criteria

15. Not be concerned if areas overlap

16. Make areas a single system

Results

The valuable areas identified in the training workshop can be seen in the map below:



A table of the valuable areas identified can be found in Appendix 2

Discussion

Broad sets of values were described for all the coastal and near shore areas of Nauru. 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 training workshop do not represent all stakeholders in the marine environment in Nauru, 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 Nauru.

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 IMPACTS

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 Nauru 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 in these in-shore areas 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:

1. Artisanal Fisheries

2. Commercial Fisheries

3. Tourism

4. Ports and harbors

5. Pipelines

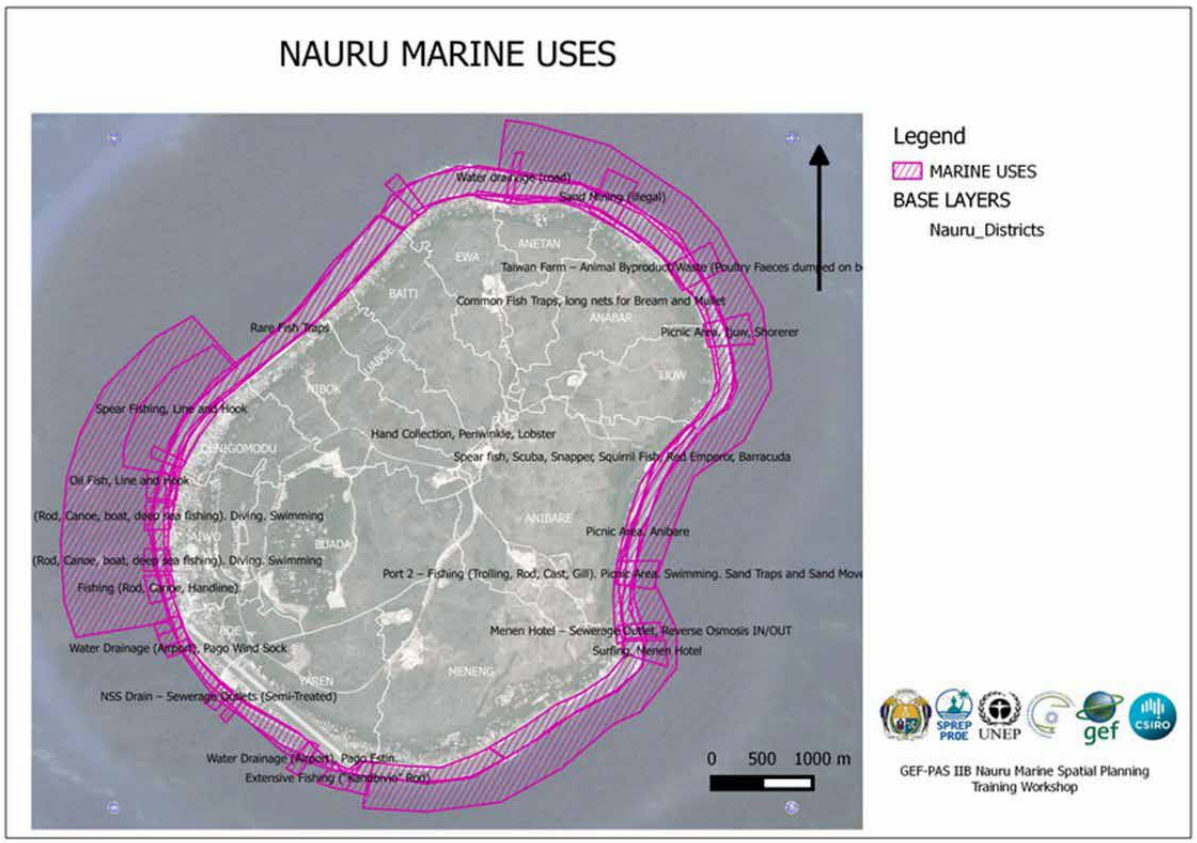
6. Shipping

7. Seismic/mineral Surveys

8. Deep Sea Mining

Results

The areas of uses around the inshore Nauru environment can be seen in the map below:



A table of the valuable areas identified can be found in Appendix 3.

Practical Exercise (Part 2)

In the second part of the exercise on use and impacts, participants were asked to undertake a simple risk assessment of the values identified. An integrated approach means that you need to understand the potential impacts of multiple uses and pressures on the values that have been identified in areas. 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 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.

We want to understand the potential for impact on the areas identified in the workshop, taking into account historical and current uses.

We want to class the interactions into the following categories:

H: High level of use and impact

M: Moderate level of use and impact

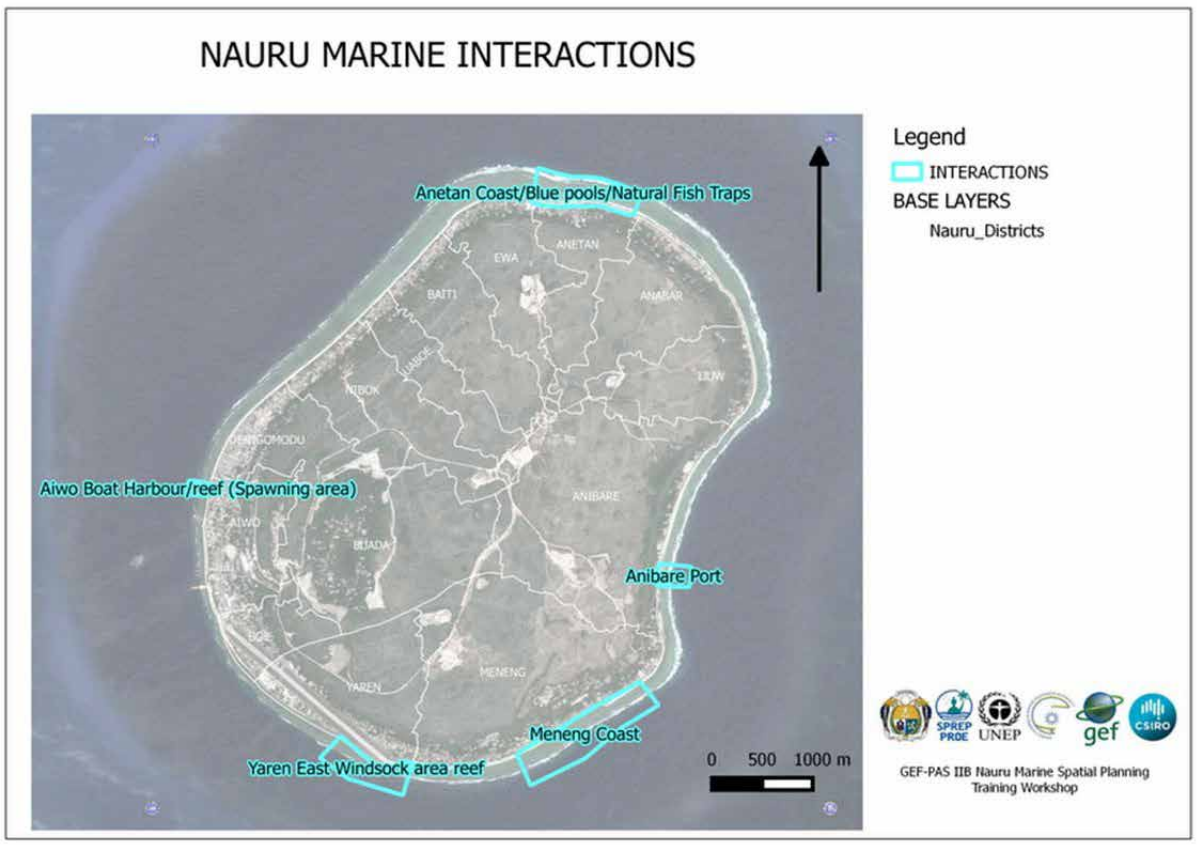
L: Low level of use and impact

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.

Results

The areas of example interactions at 5 sites around the inshore environment in Nauru can be seen in the map below:



The impact classification of example areas can be seen in the table below:

		Net	Line	Trap	Boat/Fishing	Spear	Hand	Sewage or Nutrients Run	Shipping or Boating	Marine Debris or	Climate Change Warming	Sand Mining
1	Yaren Windsock area reef	H	M	N/A	H	H	M	H	L	M	H	L
2	Aiwo Boat Harbour/reef (Spawning area)	H	H	H	H	H	L	H	H	H	H	L
3	Anetan Coast/ Blue pools/ Natural Fish Traps	H	M	M	M	M	H	H	M	M	H	H
4	Meneng Coast	H	H	M	H	H	M	H	L	H	H	L
5	Anibare Port	H	H	L	H	H	H	L	H	M	H	L

Discussions

Understanding the potential impacts of different uses on the values identified in the marine environment will necessarily require the development and 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 always be used to decide on the optimal/most efficient management option, but the number of circumstances where this is possible is small, 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

Objectives

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

The objective of this step are 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 emphasise 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 involve multiple sectors. Land-based run-off and human 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.

Practical Exercise (Part 1)

Part 1 of this step's practical exercise saw the participants focus on management options for a number of developments in areas around Nauru, 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 Nauru 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 Nauru, but they are not all distributed evenly in space and not all interact with the values.

In this exercise, participants were asked to consider:

- What are the objectives you want to achieve?
- What are the values you identified?
- What activities and uses are identified?
- Are there opportunities to allow some activities in some areas and not in others?

Which sorts of management actions are most appropriate given these:

1. LMMA

2. MPA

3. Fisheries gear restrictions

4. Fisheries Closure

5. Restrictions on species

6. Limits to access i.e. cultural areas

7. Introduction of aquaculture areas

Three (3) different locations and hypothetical marine spatial planning developments were suggested for discussion:

1. New Uses: Construction of a new Harbour and Super Marina in Anibare

There is a plan to develop a new harbour and 'super' marina in Anibare, Nauru. The marina will house 100 boats and yachts and an extensive wharf will be built to the north.

Participants to think about:

- What values will this development impact?
- How will these impacts be managed to ensure the continued use and sustainability for Anibare and Nauru

2. New Uses: Ijuw Super Resort.

The district of Ijuw has decided to build a new super resort. It will house 200 guests, both on the Island and also on villas on the reef. The resort will have its own Reverse Osmosis and waste outfall. The resort will want to limit access to reef around it to make it as picturesque as possible and all guests will want to go fishing and diving.

Participants to think about:

- What values will this development impact?
- How will these impacts be managed to ensure the continued use (including ecological and socio-economic sustainability) for Ijuw and Nauru?

3. New Uses: Baiti/Ewa Wave Energy Centre

Baiti and Ewa have been selected as the site for the Pacific Wave Energy Centre. Following the implementation of the centre, Nauru will become an energy "super power". The facility will have extensive infrastructure on the reef and the wave pontoon will extend 500m from the reef edge.

Participants to think about:

- What values will this development impact?
- How will these impacts be managed to ensure the continued use and sustainability for Baiti, Ewa and Nauru?

Results (Part 1)

1. Anibare Super Marina

The following will be impacted by the development:

- Biodiversity disturbance
- Natural and physical environment, including beach profile
- Increased waste and rubbish
- Altered drainage system
- Oil Spills
- Blasting methods

The values (from Step 2) that will be affected by the development:

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

What management will be put into place to manage the potential impacts?

- Conduct independent Environmental Impact Assessments (EIA)
- Conduct Cost-Benefit Analysis
- Ensure existing policies are used effectively, if ineffective engage government
- Undertake surveys (including capturing spatial GIS data) to facilitate EIA, CBA, and sustainable marina design. This data forms a baseline for future surveys and assessments on- going during the life of the project
- Awareness program for all of affected districts (translate into local language)
- Work with developers to look into environmentally sustainable methods of construction, this may include:
  - Above water wharf system
  - High tech oil filtering system
  - Beach nourishment
  - Minimal blasting

2. Ijuw Super Resort

The following will be impacted by the development:

- Reduction in Wetlands/Mangroves area
- Reef area reduced for fishing
- Reduction in shellfish biodiversity
- Reduction in natural fish traps
- Intensive heavy engineering and destructive works
- Reduced income and food
- Impacts on culture in area
- Restrictions access (and rights to) public space
- Social Impact of increase in number of tourists (including their lifestyle and culture) to area

Potential increase in employment and income to locals The values (from Step 2) that will be affected by the development:

1. Biological Productivity
2. Biological Diversity
3. Naturalness
4. Vulnerability, Fragility, Sensitivity or Slow Recovery
5. Economic valuation
6. Income
7. Food
8. Culture
9. Coastal Protection

What management will be put into place to manage the potential impacts?

- Eco-friendly engineering design aimed at protecting the wetland and reef area
- Declare "No-Take" zone / Protect Area for tourism
- Minimise waste disposal
- Develop Class A sewerage treatment system
- Increase number of fish traps in surrounding area
- Employment schemes for locals
- Increase taxes to raise money to compensate people who have be negatively affected by works
- Install Community Law Officers (CLO)
- Build High Stilts
- Negotiate early with all stakeholders tabling values, use and potential impacts in proposed area
- Develop Reverse Osmosis (RO) which provide water for both resort and community

3. Ewa / Baiti Energy Centre

The following will be impacted by the development:

- Fishing / Food will be impacted affecting livelihood of people
- Biodiversity around area
- Coastal protection and coral loss
- Uniqueness of coastal area
- Families (relocation)
- Pollution (noise and visual)
- Pontoons double up as FADs
- Creates jobs
- Stable and cheaper power
- Power spill over
- Fish spawning

The values (from Step 2) that will be affected by the development:

1. Biological Productivity
2. Biological Diversity
3. Uniqueness or rarity
4. Special importance for life history stages of species
5. 6. Naturalness
6. Economic valuation
7. Income
8. Food
9. Health
10. Culture
11. Coastal Protection

What management will be put into place to manage the potential impacts?

- Conduct an EIA (inc. construction) ensure management and protection of environment
- Conduct a feasibility study
- Undertake an awareness program for community and general public
- Operational time to look at noise
- Compensation on use of fishing grounds, land, etc.
- Obtain political buy-in for all management initiatives
- Inspect and report during entire lifecycle
- Developer accountability
- Regular monitoring on impacts on area
- Contingency plan
- Rehabilitation plan for relocated families (if required)
- Develop waste management plan

Practical Exercise (Part 2)

The part of the exercise was to get the participants thinking about the current opportunities to develop spatial planning and management in Nauru, the constraints that enhance or limit applying MSP in this area.

The following 4 key questions were put forward to the workshop:

- Which area would be the best to start spatial management and what type of management would this be?
- What steps for governance/legislation need to be established?
- Who is responsible for enforcement and how?
- What are the key limits to achieving these outcomes?

Results (Part 2)

1. Which area would be the best to start spatial management and what type of management would this be?

- A mixed management LMMA at Anibare to ensure social and environmental priorities were sustained
- A seasonal closure, mixed managed LMMA at Anetan to ensure sustained fishing and reduced impact from tourism
- A cyclic closure LMMA at Ewa with 2 large areas, switching periodically to ensure social and environmental priorities are sustained

2. What steps for governance/legislation need to be established?

- Community by-laws and legislation backed by the government
- Identify key stakeholders for a steering committee
- Establish clear framework, stakeholders, roles, rules of implementation and timeframe

3. Who is responsible for enforcement and how?

- Respective district communities for own LMMA using CLOs empowered by the law (deputized)
- 10 Members from public – paid by through tourism or site usage revenue)
- Fisheries and Steering Committee working together on offences and non-compliance

4. What are the key limits to achieving these outcomes?

- Collaboration and communications between government, private and communities
- Meeting the needs of land owners and community
- Political will and vision
- Education and awareness

Discussion

The practical exercises in this step gave participants the opportunity to identify potential impacts from a range of scenarios that may affect values and priorities identified in Nauru's in-shore environment in the previous steps. Some impacts were positive, enhancing stakeholder values while some may contribute negatively to the values i.e. biodiversity loss and pollution. In light of these affected identified values, participants designed a number of management options to negate and manage the potential negative impacts on values. Many management options were possible under government legislation allowing minimum intervention to be potentially applied to meet the operational objectives and ensure that all stakeholder values and objectives were met. Some of the impacts were identified as single sector impacts, requiring management from a single sector i.e. fisheries. Others would require multiple sector management arrangements (i.e. fisheries, community and environment) to ensure values were maintained.

Participants were asked to identify areas that, with spatial planning and marine management, could directly address stakeholder values and opportunities in Nauru's inshore marine environment. Three areas were identified with important priorities and values that could be maintained and enhanced by implementing a LMMA. The managed areas suggested were a variety of mixed management, seasonal and cyclic closure, tailored to achieve each priorities and values that lay within the LMMAs spatial area. The foreseeable, existing, legislated steps to undertake this management in legislation for these LMMAs were noted. The responsibility for the enforcement of the LMMA was tabled and limitations for achieving these outcomes were also discussed.

Future Options

Future efforts will 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.

STEP 5 - MONITORING

Objectives

This Step looks into monitoring the effectiveness of management through indicators that can detect changes on the values, a formalised process for monitoring and evaluation. It looks at understanding if the management interventions are meeting the operational objectives and can achieve them. Aspirational objectives will be met through evaluating performance by monitoring.

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 behaviour of the resource users and 3) these will lead to an improvement in or sufficiently reduced uncertainty in the indicator.

Monitoring and Evaluation is how you can tell if the management is working, and how you need to change it if it is not.

Three components to monitoring:

1. **Objectives:** What do you want to achieve. More detail is better
2. **Indicator:** What you will measure
3. **Target:** If the indicator meets this then the objective is achieved.

The monitoring step needs to be linked to the priorities established in Step 1. We can generally categorise Monitoring into three main types: Governance, Social/Economic and Fisheries/Environmental.

Practical Exercise

The district of Ewa has established a cyclic closure LMMA. Half of the reef shelf to 50m offshore will be closed to fishing for 3 years then the other half will be closed for the same period.

Develop and list 2 sets of monitoring objectives/indicator/target for each of governance, social/economic and fisheries/environmental (a total of 6). For each objective/indicator/target identify how it is linked to the priorities from session 1.

Are the priorities from session 1 right or do they need to be updated?

Results

Sector	Objective	Indicator	Target	Priorities
Governance	To establish a legal framework for LMMAs	Status of local By- Laws	By-Laws established in the next Parliament session	C2, C3, CD1, CD3, CD4, E5, F2
Governance	To ensure no illegal fishing in the reefs	Decrease in number of prosecutions	0 persecutions per year	
Social / Economic	Increase amount of fish in community diet	No. of days people eat fish in a week	Increase average no. of fish easting days from 2 to 5 days a week	F3
Social / Economic	Establish a revenue streamfromtheLMMA via tourist access	Amounts of Revenue	1000 AUD per year	
Fisheries / Environment	Increase population of mallets	No.offishpertime swim(transects)	Population is doubled (100 > 200) in 3 years	E5, E2, F1, C1, CD2, CD4
Fisheries / Environment	Improve reef health	Improved health coral cover	Healthy coral coverage improved by 20% in 3 years	
Governance	LMMA management committee is established	No. of committee members	8 active members are maintained	C3, E6, F2
Governance	Local LMMA wardens are empowered	No. of wardens empowered	5 LMMA wardens are deputized	CD3
Social / Economic	Increase fish catch of the community (health)	No. of households that eat fish	100% of households eat fish	F3
Social / Economic	Income from fish is increased	No. of fishers selling fish	At least 70% of fishers selling fish (use artisanal fisheries household survey)	
Fisheries / Environment	Size of fish in LMMA has increased (health)	Size of fish	30% increase in fish sizes since LMMA was established (use Fisheries Resource Survey)	F3
Fisheries / Environment	Fish catches increased in fishing area (health resources)	Catch of fishes	Catch of fishes in fishing area increases by 20% after first 2 years	

Discussion

This session provided the participants a chance to look at how to effectively monitor a Marine Spatial Planning process. In this case, they used a potential LMMA in the Ewa district and designed the monitoring program to evaluate objectives with the aim to ensure that the priorities identified in Step 1 would be achieved or realigned. A number of clear objectives under three sector types (government, social/economic and environment/fisheries) were identified, followed by measurable indicators for each objective. These could be measured utilising resources available in Nauru without any external assistance.

Targets were applied to the each of the indicators, allowing stakeholders to monitor (through measurable outcomes) the LMMA and assess whether the LMMA was succeeding or failing. Such monitoring can help stakeholders assess what needs to be done in the next cycle of the MSP for the area.

Future Options

- 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.
- Build 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.
- Develop and implement a full scientific monitoring program with a sampling design to allow identification of thresholds and trends from the data.
- Utilise statistical models to track performance and trends of values relative to the operational objectives
- Identify indicators that have improved with additional data.

CONCLUSION AND NEXT STEPS FOR A NAURU MSP

The Marine Spatial Planning training workshop laid the foundation for developing a full marine spatial planning framework for Nauru. The workshop introduced participants to a step-by-step process in applying key MSP principles, building their capacity to undertake a full MSP that can be applied in Nauru assisting them to work towards achieving the sustainable use of their marine resources and environment. Amongst the Nauruan stakeholder's participants from other GEFPAS IIB project countries in the Cook Islands, Tonga and Tuvalu also attended the training (as part of SPREP's regional approach) and came away with enhanced knowledge and understanding on the importance of MSP as a tool for sustainable resource management.
Participants left the workshop with the skills and knowhow of utilising MSP and applying the steps to begin implementing their own relevant activities in their respective countries.

For next steps, it is expected that the Nauru Fisheries and Marine Resources Authority (NMFRA) and the Department for Commerce Industry and Environment (DCIE) will take the lead on moving Nauru's MSP process forward in consultation with relevant government and community stakeholders. The main mechanism for coordinating follow up actions will be through the establishment of a Nauru MSP Steering committee (MSP-SC) co-chaired by NFMRA and DCIE with relevant stakeholders represented, as appropriate.
The table below provides an indicative timeframe for follow up activities:

Action Item	Timeframe	Lead Agency(ies)
Establish Nauru MSP Steering Committee (MSP-SC)	June 2016	NFMRA/DCIE
Convene first meeting of the MSP-SC	July 2016	NFMRA/DCIE
Plan and carry out consultations (first round)	August 2016	DCIE/NFMRA
Collate feedback from first round into draft MSP document	August 2016	NFMRA
Take draft MSP doc back to stakeholders (second round of consultations)	September 2016	NFMRA
Collate feedback from second round to finalise draft MSP document	September 2016	NFMRA
Finalise MSP document	October 2016	NFMRA
Arrange for Cabinet approval for the final MSP document	November 2016	DCIE

References

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.

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

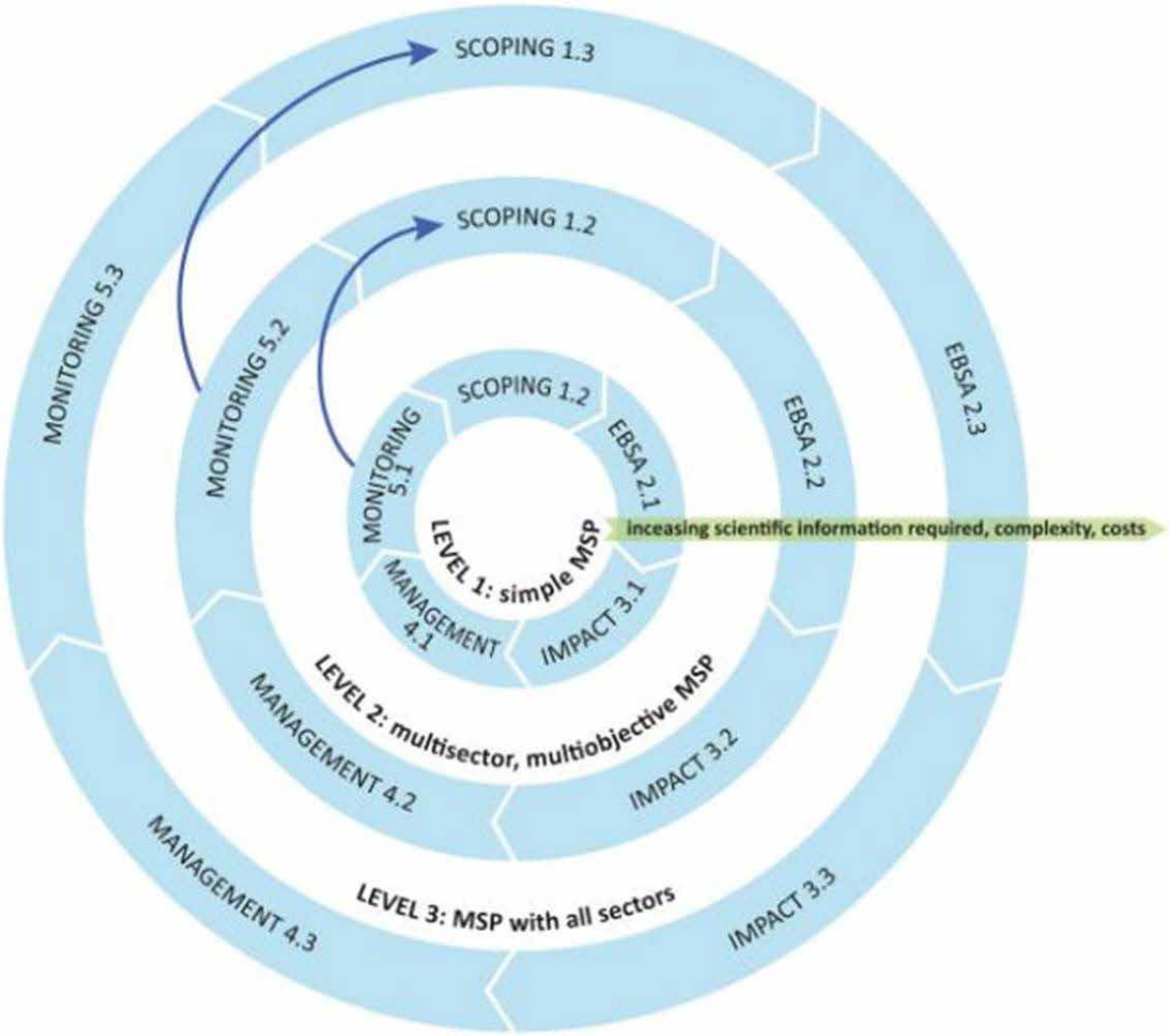
Ehler, C. and Douvere, F. (2009) Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. (English).

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.

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.

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

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. 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.

Appendix 2 - List of Participants and resource personnel

First	Last	Type	Organisation
Ann-Steshia	Hubert	Participant	Nauru Community Representative (Anabar)
Being	Yeeting	Participant/ Facilitator	Nauru Fisheries and Marine Resources Authority (NFMRA)
Berrick		Participant	Department of Commerce Industry and Environment, Nauru (DCIE)
Bronton	Namaduk	Participant	Nauru Community Representative (Ewa)
Bryon	Amwano	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
David	Godaraoa	Participant	Nauru Community Representative (Anibare)
Delvin	Thoma	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Ebelina	Tsiode	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Francis	Amwano	Participant	Nauru Community Representative (Yaren)
Giovanni	Gioura	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Haseldon	Buraman	Participant	Nauru Community Representative (Anetan)
Jake	Debao	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Joshua	Jeremiah	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Mii	Matamaki	Participant	GEFPAS IIB Coordinator Cook Islands
Moe	Saitala	Participant	GEFPAS IIB Coordinator Tuvalu
Pier	Dunstan	Facilitator	Commonwealth Scientific and Industrial Research Organization (CSIRO)
Ruth	Tea Buge	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Ryan	Wright	Facilitator	Secretariat of the Pacific Regional Environment Programme (SPREP)
Shadrach	Rodiben	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Siosifa	Tuangalu	Participant	Nauru Ports Authority (NPA)
Slade	Benjamin	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Stacie	Adun	Participant	Nauru Fisheries and Marine Resources Authority (NFMRA)
Taaniela	Kula	Participant	GEFPAS IIB Coordinator Tonga
Le Grand	Jimaima	Participant	International Union for Conservation of Nature (IUCN)
Tyrone	Deiye	Participant	Nauru Community Representative
Vainuupo	Jungblut	Facilitator	Secretariat of the Pacific Regional Environment Programme (SPREP)

Appendix 3 - Training Programme

Nauru GEFPAS IIB
Training Workshop on Marine Spatial Planning

8-12 February 2016, Republic of Nauru

Final Programme

Time	Monday 8 February 2016	Notes	
8.30am – 5.00pm	**GIS training for NFMRA officers**	Facilitated by SPREP (Ryan Wright) and NFMRA	
Time	**Day 1: Tuesday 9 February 2016**	**Notes**	
8.30am – 9.00am	Registration	Berrick Dowiyogo (DCIE)	
	Official Opening		
9.00am – 9:20am	Welcome (MC) Prayer Opening Remarks Opening Remarks Opening Remarks Daily arrangements, housekeeping matters & ground rules	Berrick Dowiyogo, (DCIE) DCIE rep Acting Secretary (DCIE) Vainuupo Jungblut (SPREP) Being Yeeting, NFMRA DCIE/ SPREP	
	Session 1: Introduction to Marine Spatial Planning (MSP)		

9.20am – 10.00am	***Presentation (10 mins)**:* Objectives and expected outcomes of the training workshop. ***Presentation (20 mins)**:* Marine Spatial Planning (MSP) – what, why, when, where & how? **Discussion – 10 mins**	Vainuupo Jungblut, SPREP. Ryan Wright, SPREP.	
10.00am – 10.30am			
	Session 1: continued		
10.30am – 12.45pm	***Presentation (20 mins):*** National policy context for marine resource management & Marine Spatial Planning (MSP) Discussion - 10 mins ***Intro to breakout session (5 mins)*** ***Facilitated breakout groups (1 hour)*** Participants to discuss specific priorities (including commitments – PNA, CBD etc.) that MSP can help them achieve. ***Report back (30 mins)*** *Output: A list of priorities from the group discussions*	Being Yeeting, NFMRA Dr. Piers Dunstan, CSIRO CSIRO/SPREP/NFMRA Nominated spokesperson from each group.	
12.45pm – 1.30pm			
	Session 2: Understanding Nauru's in-shore marine resources	**Facilitator(s):** CSIRO	

1.30pm- 2.15pm	***Presentation (20 mins)*** **-** Existing state of knowledge of Nauru's in-shore marine resources – values, status & trends? **Discussion – 10 mins**	Being Yeeting, NFMRA	
	Session 3: Critical issues related to in-shore marine resource management in Nauru	**Facilitator(s): CSIRO**	
2:15pm – 3:15 pm	***Intro to session (5 mins)*** ***Facilitated breakout groups (1 hour):*** *What are the most important stakeholder issues related to in-shore marine resource management?* *What they are doing at the moment to address these issues?*	Dr. Piers Dunstan, CSIRO CSIRO/SPREP/NFMRA/ CIE	
3:15pm – 3:45pm			
	Session 3 (continued)		
3:45pm – 4:15pm 4.15pm – 4:30pm	***Report back (30 mins)*** *Output: a) identification of issues regarding in-shore marine resource management for Nauru* **Discussions – 15 mins**	Nominated spokesperson from each group.	
Time	**Day 2: Wednesday 10 February 2016**	**Notes**	
8.30am – 8.35am	Recap of Day 1	Vainuupo Jungblut (SPREP)	

	Session 3: continued	Facilitator(s): CSIRO	
8.35am – 10.30am	***Facilitated breakout groups (2 hours):*** What are the in□shore marine areas? What are they uses? Identify different types of management that can be applied to different areas, taking into account their values and pressures on them. What is government process to implement these? What is the current process to make them happen?		
10.30am – 11.00am			
11.00am – 11.40am	***Report back (30 mins):*** Output: a), identification of critical areas requiring management interventions in Nauru and b) a list of different forms of management suitable for different areas, with different values and pressures. **Discussion – 10 mins**	Nominated spokesperson from each group.	
12.00pm – 5.00pm	**Field visit – half day visit to Proposed Marine Managed Areas (PMMAs) – including packed lunch**	Facilitators to further explain MSP principles and draw the attention of participants to real time examples out in the field.	
	Day 3: Thursday 11 February 2016	**Notes**	
8.30am – 8.35am	Recap of day 2	Vainuupo Jungblut, SPREP	
	Session 4: Implementing an MSP process in Nauru – opportunities & constraints	**Facilitator(s):** CSIRO	
8.35am – 10.10am	***Presentation (15 mins):*** A longer term MSP process for Nauru	Dr. Piers Dunstan, CSIRO	

	Intro to session (5 mins) ***Facilitated breakout groups (45 mins):*** What are the jurisdictional and governance issues regarding the implementation of an MSP in Nauru? How can these be addressed? Does the longer term vision fit expectations? Is it workable/realistic for Nauru? ***Report back (20 mins):*** *Output: a) identification of the jurisdictional and governance issues that have influence over the implementation of MSP in Nauru; b) Strategies for addressing these issues & priorities.* **Discussion: 10 mins**	CSIRO/SPREP/NFMRA/ CIE Nominated spokesperson from each group.	
10:10am – 10:30am	**MORNING TEA**		
	Session 4 (continued)	Facilitator: CSIRO	

	Intro to session (5 mins) ***Facilitated breakout groups (45 mins):*** What are the jurisdictional and governance issues regarding the implementation of an MSP in Nauru? How can these be addressed? Does the longer term vision fit expectations? Is it workable/realistic for Nauru? ***Report back (20 mins):*** *Output: a) identification of the jurisdictional and governance issues that have influence over the implementation of MSP in Nauru; b) Strategies for addressing these issues & priorities.* **Discussion: 10 mins**	CSIRO/SPREP/NFMRA/ CIE Nominated spokesperson from each group.	
10:10am – 10:30am	**MORNING TEA**		
	Session 4 (continued)	Facilitator: CSIRO	

10.30am – 12.00pm	***Facilitated breakout groups (1 hour)*** What are opportunities for implementing an MSP in Nauru? What are the constraints? How can these constraints be addressed? ***Report back (30 mins):*** *Output: a) Identification of existing opportunities that would complement MSP in Nauru and b) strategies for addressing constraints to implementing an MSP process in Nauru.*	Dr. Piers Dunstan, CSIRO CSIRO, SPREP, NFMRA, CIE	
	Discussion: 15 mins		
12.15pm – 1.00pm	**LUNCH BREAK**		
1.00pm – 5.00pm	**Session 5: Conducting a full MSP process for Nauru - pulling it all together**		
	Intro to session (5 mins) ***Presentation (20 mins)*** – Components of a full MSP & Marine Spatial Plan for Nauru ***Facilitated breakout groups (1 hour):*** Breakout groups to start working on pulling together specific allocated sections of the draft marine spatial plan for Nauru based on information and feedback gathered since day 1.	Dr. Piers Dunstan, CSIRO	

Time	Day 4: Friday 12 February 2016	Notes	
8.30am – 8.35am	Recap of Day 3	Vainuupo Jungblut, SPREP	
	Session 5 (continued)		
8.35am – 9.30am	***Report back (45 mins)*** *Each breakout group to present on the content of their respective sections of the draft MSP opportunities paper.* **Discussions – 15 mins**	Nominated spokesperson from each group.	
	Session 6: Monitoring & Evaluating the MSP process		
9.30am – 10.00am	***Presentation (15 mins):*** Monitoring & Evaluation – how do we verify success?	Dr. Piers Dunstan, CSIRO	
3.00pm	2. Evaluation of training	NFMRA All Participants	
3.00pm – 3.30pm	**AFTERNOON TEA**		
3.30pm –	**End of Day 4 & closure of training workshop**		

	Discussion (15 mins)		
10.00am – 10.30am	**MORNING TEA**		
	Session 6: continued		
10.30am – 12.30pm	***Facilitated breakout groups (45 mins)*** **–** *monitoring and evaluation*	CSIRO, SPREP, NFMRA, CIE	
12.30pm – 1.00pm			
	Session 7: Next steps		
1.00pm – 2.00pm	Facilitated discussion to identify the next steps for developing a full Nauru Marine Spatial Plan.	CSIRO, SPREP, NFMRA, CIE	
	Session 8: Workshop closure		
2.00pm – 3.00pm	1. Closing Remarks 2. Evaluation of training	DCIE, SPREP and NFMRA All Participants	
3.00pm – 3.30pm	**AFTERNOON TEA**		
3.30pm –	**End of Day 4 & closure of training workshop**		