



RSTC5 WP.8
Date: 17 July 2019
Original: English

Fifth Meeting of the Regional Scientific and Technical Committee for the GEF Pacific Ridge to Reef Programme

Nadi, Fiji 28th July 2019

Procedural framework for site identification and spatial prioritisation of conservation land/ sea priority areas - concept

Recommendations:

The Committee is invited to:-

- i. **Review** the proposed conceptual framework on spatial prioritisation procedures; and
- ii. **Endorse and approve** the concept on spatial prioritisation procedures for trialling in one or more countries if practical, and the reporting of outcomes for further consideration.

Introduction

1. In bringing together countries that face similar threats to fresh and coastal water systems, the GEF Pacific International Waters Ridge to Reef Project (IW R2R) aims to test the mainstreaming of ridge to reef, climate resilient approaches to integrated land, water, forest and coastal management in PICs through strategic planning, capacity building and piloted local actions.
2. The Project is implementing a variety of practical approaches to safeguarding water systems and coastal habitats in the fourteen participating countries. The aim is engaging and supporting national governments and local communities to build the knowledge base to better understand the cause and effect relationship of 'whole-of-island' environmental degradation and develop the skills and systems to better manage these impacts.
3. One such practical approach is the proposed spatial prioritisation procedure that will incorporate quantifiable criteria and indicators for the identification of priority R2R sites, and reflect the importance of sites from the perspectives of the range of biological, environmental and socio-economic conditions at the national level.
4. The procedure will firstly, through existing data and defined criteria, identify national level priority sites or target areas. The outcome of this level of the procedure will be used to support national planning for integrated coastal management (ICM). The information obtained

through a land-sea model at the National IW Pilot Site will highlight those areas within the overall identified priority area that are most critical to protect.

5. The practical approaches focuses on strengthening scientific understanding of the current state of priority coastal areas, and supports the development and endorsement of national and regional strategic action frameworks for ICM/ IWRM¹.

6. These strategic action frameworks aim to meet the regional need for the mainstreaming of ridge to reef approaches in national development planning. They also support strengthened national coordination for ridge to reef integrated land, water, forest and coastal management, including climate change adaptation, in the participating countries.

7. This paper presents a major IW R2R activity to develop a spatial planning procedure that supports an objective approach to site selection for R2R interventions and reforms. The rationale for this proposed procedure is such that:-

- (i) in the case of the Pacific where funds and capacity are a limiting factor, a cost-effective rapid assessment procedure can provide the foundation for selecting target sites around which to begin participatory planning processes; and
- (ii) the alternative would be a thorough assessment of socio-economic, cultural, political and environmental systems is the best way to design integrated water resource and/ or coastal management plans

Procedural Framework

8. The spatial prioritisation procedure will follow a cascading approach to best utilise existing data, customary knowledge and local expertise to identify conservation priority areas on land and in the coastal environment. The procedure will identify national-scale ridge to reef priority sites and develop catchment-level linked land-sea models to characterise the areas.

9. The national level prioritisation procedure will utilise a rapid assessment methodology, integrating all existing and available biophysical and human activity information. Indicator sets and/ or groups of indicators will be used to characterise the state of terrestrial and marine, social and ecological systems and will be standardised to a simple value scale ranging from 1 (very low) to 5 (very high). Collection of data will follow a standard process for all countries and, where gaps exist, these will be included in the rapid field survey assessments of the sites.

10. Customary knowledge associated with coastal ecosystems and traditional management practices inform the selection of indicator sets or groups. Additionally, community participation and expert knowledge will help inform the value scores attributed to the sets or groups.

11. Datasets will be standardised into spatial grids for which each cell will acquire a value for each indicator. Land-sea impacts will be estimated by watershed according to watershed health index, coral reef habitat area, rainfall, land use/ cover, and importance to local communities. Spatial grids will then be integrated into cartographic products to be discussed openly among stakeholders.

12. The catchment-scale linked land-sea model will spatially prioritise upland and coastal conservation efforts across a selected priority watershed. This is a spatially explicit model to quantify the effect of land-use change on coral reef ecosystems. Spatial patterns in water quality are linked to coral reef ecosystem health using benthic indicators known to respond to land-based runoff. Model inputs include fish indicators that represent important local resources, identified in consultation with decision makers and local communities. Using a spatial analysis, coral reef areas vulnerable to

¹ International water resource management

existing land-use runoff based on selected benthic and fish indicators will be determined and traced back to upland areas within the watershed to identify priority areas for management actions.

13. The main outputs of the spatial prioritisation model will be:

- (i) maps of marine environment quality,
- (ii) maps of coastal and watershed quality,
- (iii) map of human pressures on landscapes and seascapes, and
- (iv) value scores that will be combined to create a national-scale conservation prioritization map to inform selection of sites for management interventions (Figure 1).

Participatory Process – Local experts, stakeholders and artisans will share their traditional knowledge of ecosystems and management practices in the selection of indicator sets or groups. The same groups will be involved in attributing scoring across the indicator sets or groups, thus reflecting the unique values and situation of each site.

Capacity Building – Most countries have capable and talented GIS and information management officers in their Departments of Environment, Departments of Land or similar. Training will be provided to a select group of users on the use and maintenance of the model systems, including how data sets were arrived at and how they interrelate.

R2R Mainstreaming – the participatory process and capacity building aspects of the prioritisation procedure will highlight the interconnectedness of ecosystems. It will show empirically the vulnerability of some because of the misuse of others. Community groups, local and national governments will explicitly use the model outputs as R2R planning tools. These outputs feed directly into the diagnostic process and the identification of reforms and investment recommendations.

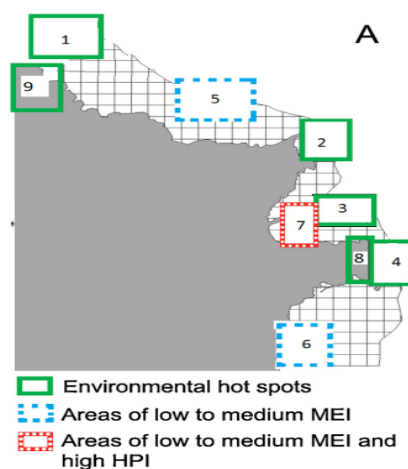


Figure 1: example of identification of hotspot areas using scored indicator sets and/or groups. Taken from Alvarez-Berastegui D, et al (2013)

Output	maps of a) marine environment quality, b) coastal and watershed quality, and c) human pressures on landscapes and seascapes national-scale conservation prioritization map to inform selection of sites for management interventions
Expected time	Data collection (included in Step 2) – 5 weeks Model preparation – 3 weeks Maps and decision support tools – 2 weeks

Conclusions & Recommendations:

14. The prioritisation procedure will generate products that can be used to support decision-making processes. The procedure is designed such that appropriate personnel at SPC and national partners participate in its development and are trained for future use.

15. SPC and an international Consultant are currently working together to develop the proposed procedures. The following outputs are expected:

No	Output/ Milestone	Schedule
1	Procedural framework developed and national data consolidated & prepared.	Month 1
2	Data sampling design for field survey in Tagabe catchment, Vanuatu.	Month 1
3	Technical paper on methodology and data requirements.	Month 1-2
4	National scale model prepared for Vanuatu with outputs.	Month 2
5	Data collection for model calibration – field survey in Tagabe Catchment.	Month 2
6	Terrestrial and marine models calibrated with national data.	Month 2
7	Interim report including updates to methodology and outputs from <u>national scale model</u> & trial; packaged models & maps.	Month 3
8	Prepare draft prioritisation land-sea model for peer review at the Science and Technical Committee meeting – to cover updates to methodology & outputs, and packaged models and maps.	Month 3
9	Tagabe catchment localised land-sea model prepared with outputs.	Month 4
10	Written final report including updates to methodology & outputs from <u>watershed scale</u> model trial; packaged models and maps.	Month 4

16. SPC will also prepare a regional guideline that includes the spatial prioritisation procedures for use during upscaling future R2R investments. The regional guidelines and demonstration of the model are expected to be presented and launched at a regional training workshop for practitioners and stakeholders.

17. The Committee is invited to:-

- i. **Review** the proposed conceptual framework on spatial prioritisation procedures; and
- ii. **Endorse and approve** the concept on spatial prioritisation procedures for trialling in one or more countries if practical, and the reporting of outcomes for further consideration.