

Management and Conservation of Reef Biodiversity and Reef Fisheries Pilot Project: Governance assessment for Pedro Bank, Jamaica

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*Sustainable Management of the Shared
Living Marine Resources of the
Caribbean Large Marine Ecosystem
(CLME) and Adjacent Regions*

Management and Conservation of Reef Biodiversity and Reef Fisheries Pilot Project: Governance assessment for Pedro Bank, Jamaica

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Acronyms and abbreviations

ACS	Association of Caribbean States
BPoA	Barbados Programme of Action for the Sustainable Development of SIDS
CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community and Common Market
CARICOMP	Caribbean Coastal Marine Productivity Programme
CBD	Convention on Biological Diversity
CCA	Causal Chain Analysis
CEHI	Caribbean Environmental Health Institute
CEP	Caribbean Environment Programme
CERMES	Centre for Resource Management and Environmental Studies
CFRAMP	CARICOM Fisheries Resource Assessment and Management Programme
CITES	Convention on International Trade of Endangered Species
CLME	Caribbean Large Marine Ecosystem
CRFM	CARICOM Regional Fisheries Mechanism
CSC	Caribbean Sea Commission
CSI	Caribbean Sea Initiative
EA	Ecosystem Approach
EBM	Ecosystem-based Management
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agricultural Organization
GEF	Global Environmental Fund
IOC	Intergovernmental Oceanographic Commission of UNESCO
IOCARIBE	Inter-governmental Oceanographic Commission – Caribbean Subcommission
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unregulated and Unreported (fishing)
LME	Large Marine Ecosystem
LOSC	Law of the Sea Convention
MARPOL	Convention on the Prevention of Marine Pollution from Ships
MCS	Monitoring, Control and Surveillance
MEA	Multilateral Environmental Agreement
MERF	Monitoring and Evaluation and Reporting Framework
MIS	Marine Invasive Species
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NEPA	National Environmental Protection Agency
NGO	Non-Governmental Organization
NIC	National Inter-ministerial/Inter-sectoral Committee
RMGF	Regional Management and Governance Framework
SIDS	Small Island Developing States

SPAW	Protocol Concerning Specially Protected Areas and Wildlife
TDA	Transboundary Diagnostic Analysis
TNC	The Nature Conservancy
TWAP	GEF Transboundary Waters Assessment Project
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCR	Wider Caribbean Region
WECAFC	Western Central Atlantic Fishery Commission
Widecaste	Wider Caribbean Sea Turtle Network
WSSD	World Summit on Sustainable Development

Summary

Detailed assessments of governance architecture such as the one carried out in this study for the Pedro Bank are few. Technical assessments of resources and their habitats are far more common. The purpose of the assessment carried out here is to dissect and display the suite of governance arrangements for the major governance issues identified for Pedro Bank in order to facilitate discussion among stakeholders. This discussion can lead to shared perceptions of what should be in place, what principles should be prominent and how the system should be structured. The assessment is not intended to provide a prescriptive output regarding what should be in place. Nonetheless, some broad observations can be made on aspects of the system that need attention if arrangements are to be structured in way that is likely to lead to effective governance, including the promotion of intersectoral and inter-issue integration that is needed for an ecosystem approach.

The assessment was carried out at two levels:

- Level 1 examined the governance arrangements or architecture
- Level 2 made a preliminary assessment of functionality according to several basic principles.

The area for the assessment was the entire Pedro Bank with an initial focus on the Pedro Cays where most human activity and impact occur. The assessment focuses on living marine resources and the requirement for an ecosystem approach to their sustainable use.

Six key living marine resource issues were identified for governance on the Pedro Bank:

- Finfish fishing (entire bank, consider invasive lionfish)
- Conch fishing (entire bank)
- Lobster fishing (entire bank)
- Seabird and sea turtle biodiversity
- Land based pollution on marine ecosystem
- Marine-based pollution.

It should be noted that there are also social issues on the Pedro Cays relating to human health, crime and safety that are considered to be beyond the scope of this assessment. Individual arrangements for the six issues above were examined with input from key stakeholders. The extent of interaction among these arrangements, such as would be needed for an ecosystem approach, was also examined.

The first observation is that there is the need to clarify and make known the individual governance arrangements for the six issues and make them known to all stakeholders so that they can take part in the processes effectively.

This requires separating the two aspects of uncertainty relating to these processes: (1) uncertainty among responsible agencies regarding which agency is ultimately responsible for what stage of the cycle; and (2) lack of awareness amongst other stakeholders about agency responsibility, even when there is certainty among responsible agencies themselves.

A second observation is that the governance arrangements for the six issues do not appear to be well integrated at the policy level or at the management level. At the policy level there is a body the NCOCZM that is assumed to have the mandate for policy integration and advice at the national level for the entire country. It also appears to be responsible for policy integration in oceans affairs for national inputs into regional and international processes. The functionality of this council, especially in the context of Pedro Bank is unclear. It may not be adequately funded or staffed for the role it is expected to play.

At the management level, there is an ad hoc management committee that can make a start in management integration; however, it is recommended that an integrating mechanism with clear responsibilities and accounting be established. The exact nature of this mechanism remains to be determined, but it must be known to all stakeholders, capable of adapting to evolving needs, and be recognised by the Government of Jamaica as the responsible body.

With regard to the Level 2 assessment which is based on the extent to which stakeholders perceived certain principles as being observed in the arrangements, the general conclusion is that the processes were not perceived as being highly functional with regard to the principles. Improvement of these perceptions and scores could be a governance objective. This general conclusion provides the opportunity for stakeholders to reflect collectively on what might be done differently in order to improve the arrangements with respect to the principles.

It is recognised that the management of marine ecosystems is in a state of flux in Jamaica, as the draft Fisheries Act has not been passed. As pointed out by Otuokon (2012) this Act makes provisions for addressing several of the uncertainties regarding responsibilities for individual issues, as well as for integrating mechanisms. Its passage is expected to strengthen the national capacity for marine ecosystem based management. It is hoped that dissecting the living marine resource governance issues as has been done in this assessment will provide insights and a framework for developing a robust governance architecture and principled processes for the marine ecosystem of the Pedro Bank and Pedro Cays.

1 Introduction

1.1 The CLME Project and LME Governance Framework

The Caribbean Large Marine Ecosystem and Adjacent Areas (CLME) Project aims to improve management of shared living marine resources (LMRs) within the Wider Caribbean Region (WCR). The Transboundary Diagnostic Analyses have identified weak governance as a root cause of the problems facing these social ecological systems (Mahon et al 2011a). Therefore, the CLME Project has a strong emphasis on assessing LMR governance systems and on proposing ways of strengthening them. The background to the way that governance is treated in the CLME Project including the development of the LME Governance Framework is discussed in (Mahon et al 2011a).

The CLME Project is designed to begin the process of building the framework for the WCR through a series of targeted activities aimed at specific parts of the framework and at testing the effectiveness of the LME Governance Framework concept (Mahon et al., 2008, Fanning et al 2009b).

The purpose of the CLME pilot projects and case studies is to explore and understand various key parts of the framework in a 'learning by doing' mode. They will explore how the approach of developing functionality of policy cycles and linkages in various parts of the framework could lead to improved transboundary LMR governance in the WCR. These CLME Project components have been designed to encompass the full range of transboundary LMR situations with emphasis on different level of the framework and different geographical regions of the WCR. The governance assessment of these pilots and case studies is being approached through a common methodology. The Case Study for the Pedro bank, Jamaica, addressed in this report is one such component.

1.2 LMR governance assessment

The LMR governance assessment approach for the CLME project builds on the methodology developed by Mahon et al (2011b, 2011c) for the Transboundary Waters Assessment Programme (TWAP). TWAP is a GEF project to develop indicators for monitoring all aspects of the projects in The GEF's International Waters (IW) portfolio. The discussion and methodology paper by Mahon et al (2011) addresses the monitoring of governance. While the focus is on the Large Marine Ecosystem (LME) component of the IW Programme, the assessment approach and methodology was developed for the entire GEF IW programme. To a large extent it was based on experience gained in developing the CLME Project and is therefore considered to be appropriate for adaptation to the CLME Pilots and Case Studies.

The TWAP approach to be adopted and adapted here is a two-Level one as described by Mahon et al (2011b, 2011c). It has been adapted to the CLME Pilots and Case Studies in a working paper (Mahon et al 2011d). Level 1 will assess governance architecture and a methodology has been developed for this. Level 2 will assess the performance of the arrangements identified in Level 1 (Figure 1).

1.3 The reef ecosystem pilot project

The Reef Ecosystem Pilot Project comprises three sub-projects: Seaflower Marine Reserve, San Andres Islands, Colombia; Pedro Bank, Jamaica; and Montecristi, Dominican Republic. Governance assessments will be carried out as a part of each of these three sub-projects. This document reports on the governance assessment for the Pedro Bank subproject.

The main aim of the Pedro Bank sub-project is to develop a management plan for the Pedro Cays and adjacent waters. This plan has been prepared and reviewed by stakeholders. The present document provides a complementary in-depth governance assessment in support of the proposed actions in the management plan.

2 Level 1 assessment - architecture

The steps required for the Level 1 assessment are outlined in Figure 1 and the outputs of the assessment will be described step-by-step in this section.

2.1.1 System to be governedⁱ

Governance of LMR must be place-based (Crowder et al 2006, Young et al 2007). Therefore, the geographical boundaries of the system and the countries involved in the fishery ecosystem must be clearly identified as a basis for determining issues and arrangements.

In this study, the area to be managed is the entire Pedro Bank (Figure 1). However, this will require that the linkages with communities on the south coast of Jamaica be taken into consideration. Whereas, the management area is the entire bank, the current project and governance assessment does not have the resources to address the entire bank and its linkages in full detail at this time. Therefore, the area of most intensive human use and impact, the three cays and the area around them, has been identified as a focus for this project. This focus will be pursued with reference to the entire bank and to the linkages of the focal area with the rest of the bank and the south coast. A particular aspect of the focal area is the establishment of a fish sanctuary which has defined boundary.

Physical and biological details of the Pedro Bank and Pedro Cays can be found in the management plan document (Otuokon 2012). This plan also reviews the human uses of marine resources and the threats to them posed by exploitation and the human settlements on the cays.

2.1.2 Issues to be governed

The desired approach to governance of the Pedro Bank and Cays is an integrated one that is consistent with ecosystem based management or the ecosystem approach to fisheries (EAF) of FAO. This requires that the full range of issues that may be relevant to sustainable use of living marine resources be considered.

The key issues for governance on the Pedro Bank were identified through consultation with the UNEP RCU, TNC, the Fisheries Division and NEPA.

These key issues are;

- Finfish fishing (entire bank, consider invasive lionfish)
- Conch fishing (entire bank)
- Lobster fishing (entire bank)
- Seabird and sea turtle biodiversity
- Land based pollution on marine ecosystem
- Marine-based pollution (include rigs (future), ships)

Clearly these are linked or interacting and need more detailed discussion to determine the extent to which they can be combined, or need further disaggregation into sub-issues for purposes of developing effective governance arrangements. It should be noted that there are also social issues on the Pedro Cays relating to human health, crime and safety (Espeut 2006) that are considered to be beyond the scope of this assessment. It should be noted that they would be considered to be a part of the EAF (FAO 2003).

2.1.3 Identify arrangements for each issue

The assessment of incompleteness of an arrangement for an issue (Table 1) is based upon whether there are organizations with responsibility for the various stages of the policy cycle for that issue. The column showing responsible agency or body in Tables 2-7 (one for each issue), were populated in consultation

with persons from the Fisheries Division, NEPA, Coast Guard, TNC and UNEP. These tables were then showed to representatives from the main stakeholders groups (Fisheries Division, NEPA, Maritime Authority, Coast Guard, a commercial fishing company, the Jamaica Fishers Cooperative Union, fishers from the Pedro Cays and The Nature Conservancy (TNC)) who were asked to provide a score for completeness of each stage of each policy process¹.

The perceived completeness of policy cycle stages for the governance processes identified for the six issues in Tables 3-7 above is summarized in Figure 2, which shows that for all policy cycles the perceived completeness is low to medium. Note that this is the average for the six stakeholder types and that there variation among stakeholders (Tables 2-7 and Appendix 1). However, even if the policy cycle stage is formal and well known to some, it is important that all stakeholders in a process are aware of it and of who is responsible for the various stages of the governance process that they are involved in. Further to this point, note also from Appendix 3 that some stakeholders declined to provide a completeness score for processes that they were not involved in. These were treated as missing values, but it could be argued that they should be zeros if all stakeholders involved in Pedro Bank LMR governance should be expected to be aware of the arrangements for all six of the issues, even if not directly involved.

Figure 2 shows that that the conch issue governance arrangement is best known among stakeholders, whereas that for the LBS is least known, being considered by them to be entirely within the absent to low area of the diagram. For conch, lobster and LBS the scores are similar for all stages of the policy cycle. For finfish the score was particularly low for the decision-making stage.

A governance improvement target could be to have these governance arrangements clarified, formalized and made known to all stakeholders so that they can take part in the processes effectively. This will involve separating the two aspects of the low scores that are apparent in figure 2: (1) uncertainty among responsible agencies regarding which agency is responsible for what stages of the cycle; and (2) lack of awareness among stakeholders, even when there is certainty among responsible agencies.

¹ We need to document how many and what positions they held in an Appendix. Were representatives self-chosen, etc? Was the scoring process done individually, in a group?

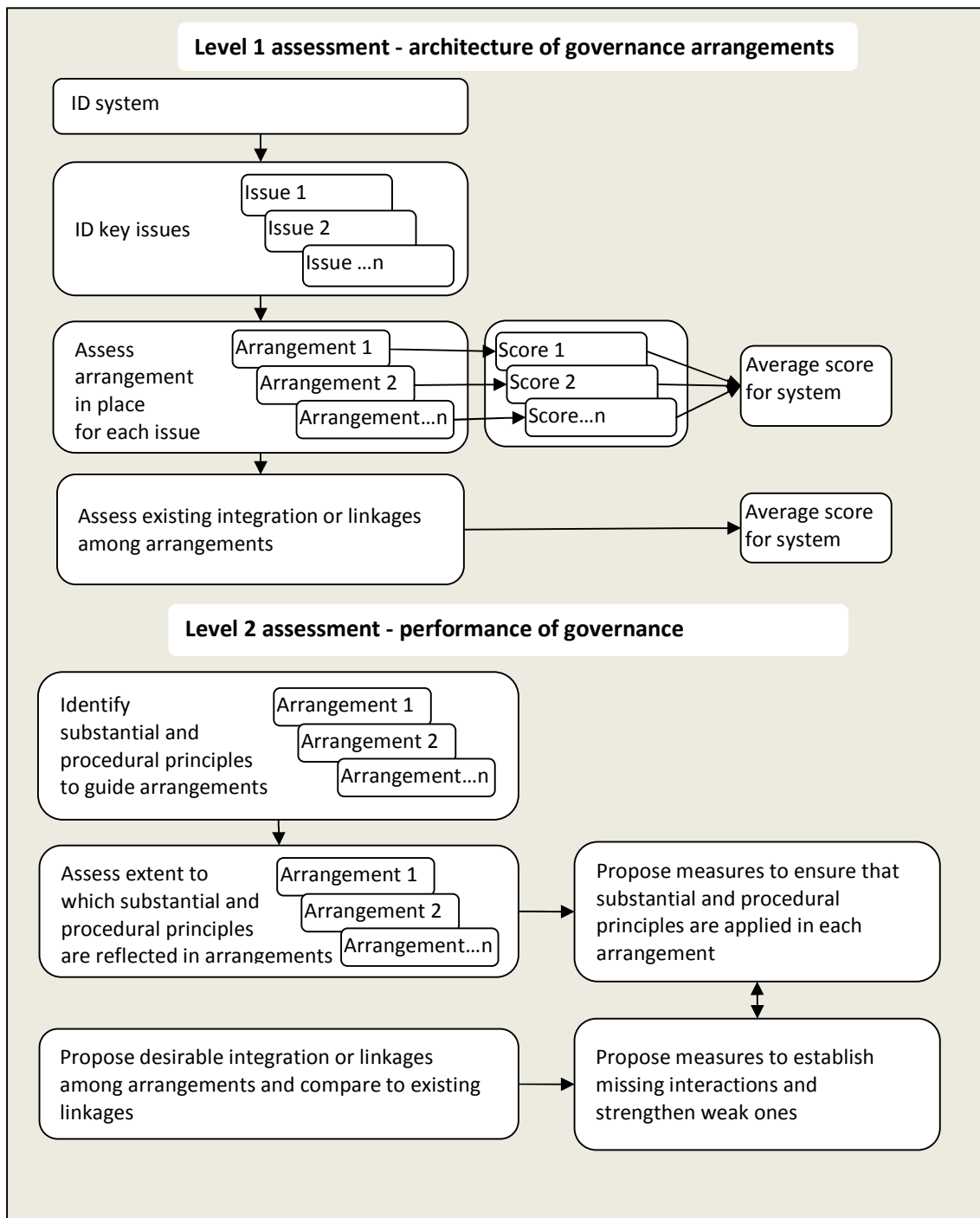


Figure 1. Level 1 and Level 2 process for assessing governance for CLME fishery ecosystems

Table 1: CLME fishery ecosystem governance architecture - System summaryⁱⁱ

System name: Pedro Bank marine ecosystem, Jamaica		Region: Wider Caribbean		
Complete these columns then assess issues using the arrangements tables (Table 4)		After completing the arrangements tables, complete these columns		
Trans-boundary issue ⁱⁱⁱ	Importance for stakeholders involved ^{iv} Average (range)	Completeness of governance arrangement ^v (score/category)	Priority for intervention to improve governance ^{vi}	Observations ^{vii}
Finfish fishing (entire bank)	3.0 (3)	12.5 2	6.0	Includes invasive lionfish issue
Conch fishing (entire bank)	3.0 (3)	8.2 2	6.0	
Lobster fishing (entire bank)	2.7 (2-3)	10.2 2	5.4	
Seabird and sea turtle biodiversity	2.7 (1-3)	10.2 2	5.4	
Land-based sources of pollution	1.9 (0-3)	15.3 3	5.7	
Marine-based sources of pollution	2.3 (1-3)	12.5 2	4.6	
System architecture incompleteness index ^{viii} >>		14.2/21 32% complete		<< System priority for intervention index

Table 2: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for finfish fishery arrangement

Arrangement:		Issue: Finfish Fishing		
Policy cycle stage (governance function)	Responsible organisation or body	Scale level or levels	Completeness	Observations
Policy analysis and advice	Fisheries Division – Fisheries Advisory Board, NCOCZM ²	National	1.4 (0-3)	Lionfish ³ Is there an Ecosystem-based Management ⁴
Policy decision-making	Cabinet	National	1.1 (0-3)	Includes Fishing Industry Act, Fish Sanctuary Policy, Draft Fisheries Policy, Draft Fisheries Act
Planning analysis and advice	Fisheries Advisory Board - Fisheries Division, NRCA	National, Sub-national (Parish?)	1.3 (0-3)	TNC to be delegated management authority – working with Advisory Committee
Planning decision-making	Minister of Agriculture and Fisheries	National	0.9 (0-3)	
Implementation	Fisheries Division, Marine Police, JDF & Coast Guard, Game/Fisheries Wardens (when appointed)	National, Sub-national (parish?)	1.4 (0-3)	
Review and evaluation	Fisheries Div	National, Sub-national (parish?)	1.4 (0-3)	
Data and information	Fisheries	Sub-national (parish?) National	1.1 (0-3)	
Total			8.5/21 40%	

Table 3: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for conch fishery arrangement

² The National Committee on Ocean and Coastal Zone Management (NCOCZM) was formally declared by Cabinet as a forum for policy level discussion. It includes all relevant agencies (Fisheries, NEPA, UWI). Does the council give its fisheries policy responses to cabinet? It is not funded

³ Invasive Species Working Group (Chaired by NEPA – with UWI, Fisheries)

⁴ FAO Code of Conduct for Responsible Fisheries – applies inside and outside sanctuaries

Arrangement:		Issue: Conch		
Policy cycle stage (governance function)	Responsible organisation or body	Scale level or levels	Completeness	Observations
Policy analysis and advice	Fisheries Division, NEPA (CITES Scientific Authority), NCOCZM, Ministry of Industry and Trade involved?	National	1.5 (0-3)	Do bilateral discussions or international designations play a role
Policy decision-making	Cabinet	National	2.1 (0-3)	
Planning analysis and advice	NRCA ⁵ , Fisheries Division ⁶	National	1.9 (0-3)	
Planning decision-making	Minister of Fisheries, NRCA	National	2 (0-3)	
Implementation	Fisheries Division, NRCA	National	2.1 (0-3)	
Review and evaluation	Ministry of Agriculture and Fisheries, NRCA	National	1.8 (0-2)	
Data and information	Fisheries Division, NRCA (CITES Committee)	Subnational	1.6 (0-2)	Use of Data in GDP value, economic discussions (PIOJ)
Total			12.8/21 61%	

⁵ CITES scientific authority – designates export quota

⁶ Sets allowable catch levels

Table 4: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for lobster fishery arrangement

Arrangement:		Issue: Lobster		
Policy cycle stage (governance function)	Responsible organisation or body	Scale level or levels	Completeness	Observations
Policy analysis and advice	Fisheries Division (Fisheries Advisory Board)	National	1.5 (0-3)	
Policy decision-making	Cabinet	National	1.5 (0-3)	
Planning analysis and advice	Fisheries Division	National	1.5 (0-3)	Is there a lobster licence quota or quota for exporters?
Planning decision-making	Cabinet	National	1.5 (0-3)	
Implementation	Fisheries Division	National	1.5 (0-3)	
Review and evaluation	Ministry of Agriculture and Fisheries	National	1.5 (0-3)	
Data and information	Fisheries Division	Sub national	1.5 (0-3)	
Total			10.5/21 50%	

Table 5: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for biodiversity arrangement

Arrangement:		Issue: Seabird and Sea Turtle Biodiversity		
Policy cycle stage (governance function) ^{ix}	Responsible organisation or body ^x	Scale level or levels ^{xi}	Completeness ^{xii}	Observations ^{xiii}

Policy analysis and advice	NRCA ⁷ Fisheries Advisory Board? ⁸ Fisheries Division ⁹ NCOCZM?	National	1.7 (0-3)	New Fisheries Policy and Act – refers to need for Mgt Plans
Policy decision-making	Cabinet – Minister responsible for NRCA Act	National	1.1 (0-3)	
Planning analysis and advice	NRCA, Fisheries Advisory Board? Fisheries Division?	National and sub-national (parish?)	1.3 (0-3)	PBPMC working to coordinate stakeholder agencies – informal committee
Planning decision-making	NRCA – Minister of Housing Environment and Water (for NRCA) Minister of Agriculture and Fisheries	National	1.6 (0-3)	
Implementation	NRCA, Fisheries, Marine Police, Coast Guard), Game Wardens	National and sub-national (parish?)	1.3 (0-3)	TNC – when agreement is formalised?
Review and evaluation	NEPA, Fisheries Advisory Board? Fisheries Division?	National and sub-national (Parish?)	0.9 (0-2)	
Data and information	NEPA, Fisheries Division?	sub-national (parish?)	0.9 (0-2)	(TNC – MOA for Fish Sanctuary expected)
Total ^{xiv}			8.8/21 42%	

Table 6: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for LBS and human Impact arrangement

Arrangement:		Issue: Land-based Pollution		
Policy cycle stage (governance function)	Responsible organisation or body	Scale level or levels	Completeness	Observations
Policy analysis and advice	NRCA ¹⁰ - Min of Housing Environment Water,	National and Sub-	0.6 (0-1)	Potential for Fisheries Div involvement if declared a Fisheries

⁷ Through CITES and the Wildlife Protection Act for birds and turtles. Sea turtles are protected under the Wildlife Protection Act (WPA), with NEPA as newer legislation; seabirds under WPA.

⁸ Will a formal Board of the National Fisheries Agency be responsible in future?

⁹ Turtles are fish under Fishing Ind. Act and Morant and Pedro Cays Act

	KSAC ¹¹	national and Parish		Management Area under the new Fisheries Act ¹²
Policy decision-making	Cabinet	National	0.7 (0-3)	Policy process long. Further regulations and legislation still required
Planning analysis and advice	NEPA (TCPA&LBS) & Ministry, KSAC	National	0.9 (0-2)	Level and method of inclusion of LBS matters/Human impact
Planning decision-making	Cabinet/Ministries (Environment, Fisheries), NRCA	National	1.0 (0-3)	
Implementation	NRCA/NEPA & Ministry of Housing Environment and Water	Sub-national (parish?)	0.7 (0-2)	Fisheries has potential under new Fisheries Mgt Area designation
Review and evaluation	NRCA & Ministry of Housing Environment and Water	Sub-national (parish?)	0.9 (0-2)	
Data and information	NEPA & Ministry of Housing Environment and Water	Sub-national (parish?)	1.0 (0-2)	
Total			5.7/21 27%	

¹⁰ LBS and NRCA Act – solid and liquid waste

¹¹ Planning, settlement management, infrastructure and health permit for effluent such as sewage

¹² New Fisheries Act will repeal Morant and Pedro Act and Parish/Planning Authority will need to be clarified

Table 7: CLME fishery ecosystem governance architecture for Pedro Bank, Jamaica – Assessment summary for marine based sources of pollution

Arrangement:		Marine Based Pollution		
Policy cycle stage (governance function)	Responsible organisation or body	Scale level or levels	Completeness	Observations
Policy analysis and advice	Maritime Authority of Jamaica (MAJ), NEPA, NCOCZM?, ODPEM ¹³	National	1.7 (0-3)	Role of NCOCZM? MAJ is within Ministry of Transport and Works Fisheries Management Area would give Fisheries Division some authority
Policy decision-making	Cabinet	National	1.2 (0-2)	
Planning analysis and advice	NRCA/NEPA, MAJ, NCOCZM	National	1.2 (0-2)	
Planning decision-making	NRCA/NEPA, MAJ	National	1.2 (0-2)	
Implementation	NRCA/NEPA, MAJ, Coast Guard, Marine Police	Sub-national (Parish?)	1.2 (0-2)	
Review and evaluation	NRCA/NEPA, MAJ	Sub-national (Parish?)	1.2 (0-2)	
Data and information	NRCA/NEPA, MAJ	Sub-national (Parish?)	1.0 (0-2)	
Total			8.5/21 40%	

¹³ Via Coast Guard - Oil Spill and HazMat Policy and response.

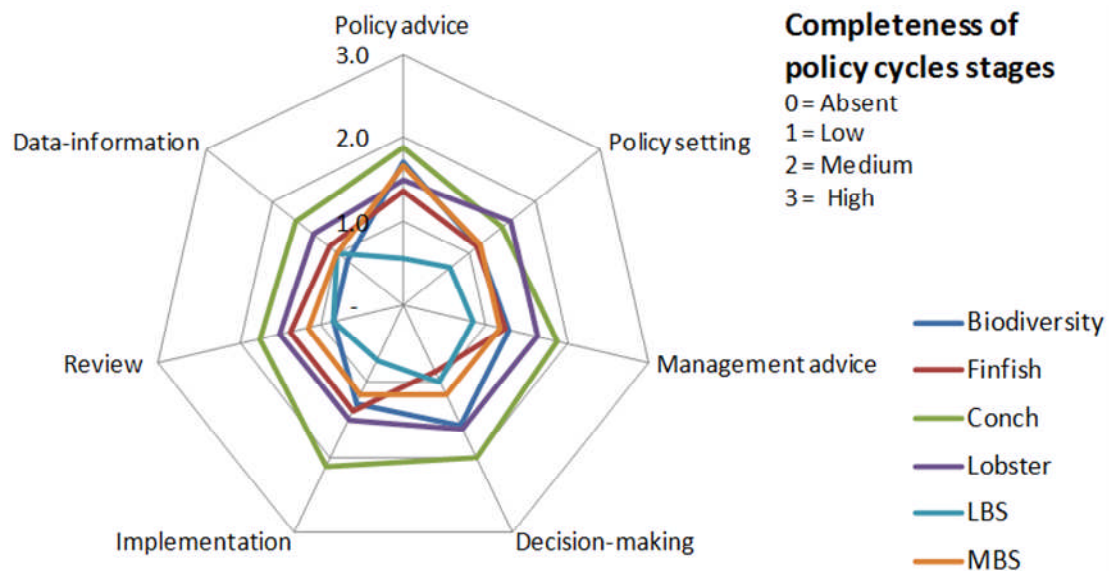


Figure 2. Summary of completeness of the stages of the policy cycles for the six arrangements for the key governance issues on Pedro Bank, Jamaica (see notes in Table 1 for an explanation of the completeness scale).

Tables 2-7 identify only the bodies with formal responsibility for governance with regard to the specific issues being considered. This provides the formal arena in which the governance process may be played out. However, governance as understood in the CLME Project includes the interactions of all the actors with interests in governance outcomes. This is also reflected in Jamaica’s National Development Plan – Vision 2030 where partnerships among stakeholders have been identified as a necessary approach to the successful implementation of natural resource management. Therefore in order to understand and assess governance processes the roles of and interactions among these actors must be considered. This requires identification of the actors and their roles with reference to the policy cycle. It also provides the opportunity to identify where partnerships exist and/or can be developed. The full identification of all stakeholders is beyond the scope of this assessment of governance architecture and arrangements. However, tables in which the stakeholders can be identified are set up in Appendix 1 for future use. The Management Plan for the Pedro Cays and Surrounding Waters provides a stakeholder analysis that can be used as a basis for developing this policy cycle based perspective on partnerships.

2.1.4 Integration and linkages of arrangements

The assessment of integration is based on the extent to which issue specific arrangements in a system share a responsible body at various policy cycle levels. The information on responsibility for various stages from Tables 2-7 is summarized in Table 8. The degree of overlap of responsibility among the six issues is assessed in Table 9 and summarized in Figure 3.

Table 8. Comparison of agencies considered to have some responsibility or potential responsibility for the six LMR issues for Pedro bank and the Pedro Cays

Stage	Finfish	Conch	Lobster	Biodiversity	LBS	MBS
Policy analysis and advice	Fish Div FAB NCOCZM?	Fish Div, NEPA (CITES Scientific Authority), NCOCZM, Ministry of Industry and Trade involved?	Fish Div FAB	NRCA FAB? Fish Div NCOCZM?	MHEW (NRCA) KSAC	MAJ NEPA NCOCZM?, ODPEM
Policy decision-making	Cabinet	Cabinet	Cabinet	Cabinet Minister HEW	Cabinet	Cabinet
Planning analysis and advice	FAB Fish Div NRCA	NRCA Fish Div	Fish Div	NRCA FAB? Fish Div?	MEHW (NEPA, TCPA & LBS), KSAC	NRCA/NEPA MAJ NCOCZM
Planning decision-making	Minister AF	Minister AF NRCA	Minister AF	NRCA – Minister HEW Minister AF	Cabinet MHEW MAF NRCA	Minister HEW? NRCA/NEPA MAJ
Implementation	Fish Div, Marine Police, JDF, CG, Game/Fisheries Wardens	Fish Div, NRCA, JDF, CG	Fish Div	NRCA, Fish Div, Marine Police, CG, Game Wardens	NRCA/NEPA & MHEW	NRCA/NEPA MAJ, Coast Guard, Marine Police
Review and evaluation	Fish Div	NRCA Fish Div	MAF	NEPA FAB? Fish Div?	NRCA & MHEW	NRCA/NEPA MAJ
Data and information	Fish Div	Fish Div NRCA (CITES Comm)	Fish Div	NEPA Fish Div?	NEPA & MHEW	NRCA/NEPA MAJ

CG = Coast Guard, FAB = Fisheries Advisory Board, Fish Div = Fisheries Division, JDF = Jamaica Defence Force, MAF = Ministry of Agriculture and Fisheries, MAJ = Marine Authority of Jamaica, MEHW = Ministry of Environment Health Water, NEPA = National Environmental Planning Agency, NRCA =

Table 9. The integration of the six issue arrangements (I1-I6) for the Pedro Bank system. A '1' means that the two arrangements have a responsible agency in common. A '0' means they have no responsible agency in common. A 0.5 has been used where there is some uncertainty about responsibility and there appears to be some overlap..

Common agency between arrangements	Policy analysis and advice	Policy decision-making	Planning analysis and advice	Planning decision-making	Implementation	Review and evaluation	Data and information	Overall average
1 and 2	1	1	1	1	1	1	1	1
1 and 3	1	1	1	1	1	1	1	1
1 and 4	0.5	1	0.5	0.5	1	0.5	0	
1 and 5	0	1	0	0	1	0	0	
1 and 6	0	1	0	0	1	0	0	
2 and 3	1	1	1	1	1	1	1	
2 and 4	0.5	1	0.5	0.5	1	0.5	0	
2 and 5	0	1	0	0	1	0	0	
2 and 6	0	1	0	0	1	0	0	
3 and 4	0.5	1	0.5	0.5	1	0.5	0	
3 and 5	0	1	0	0	1	0	0	
3 and 6	0	1	0	0	1	0	0	
4 and 5	0.5	1	0.5	1	1	0.5	1	
4 and 6	0.5	1	0.5	0.5	1	0.5	1	
5 and 6	0.5	1	0.5	0.5	1	0.5	1	
Average	0.4	1	0.4	0.4	1	0.4	0.4	

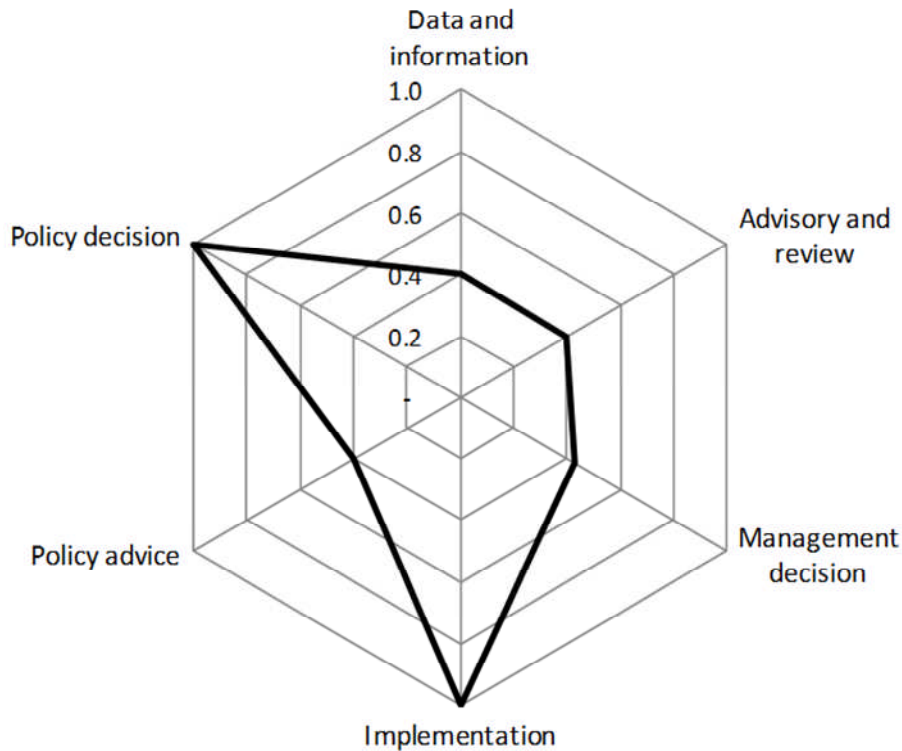


Figure 3. The extent of integration of the six governance arrangements for the Pedro Bank and Pedro Cays broken out by policy cycle stage (1 = full integration of responsibility for all issues).

Figure 3 indicates that the degree of integration among the six issues is considered to be highest at the policy decision-making and implementation levels. In the case of policy decision-making, in the national context, Cabinet is the ultimate policy-setting body for action to be taken under laws that have already been enacted. This is well known. However, policy decisions by Cabinet will only be as good as the quality of advice provided. The score in this area was low.

The National Council on Ocean and Coastal Zone Management (NCOCZM), established under the Office of the Prime Minister, was formally declared by Cabinet as a forum for policy level discussion. It includes most relevant agencies (Fisheries, NEPA, UWI). It would appear that there was the intention of having integrated policy advice on ocean and coastal management. However, it is not clear if this Council is funded or to what degree it is functional. In order for it to formulate policy it must have access to expert analysis and advice; which require funds. It must also be borne in mind that the mandate of the NCOCZM is national and not Pedro Bank specific. If ocean and coastal management for living marine resources in Jamaica is to proceed through the establishment of a series of Marine Management Areas as suggested by the Draft Fisheries Policy and Draft Fisheries Act a key role of the NCOCZM will be to harmonise and integrate policy among those areas.

Institutional integration appears to be low at the level of management advice and decisions making as well as in providing the data and information needed to support these processes. Closer inspection of tables 8 and 9 shows that the three fishery processes are likely to be well integrated as the Fisheries Division has primary responsibility for all three. However, they are largely separated from the seabird/sea turtle biodiversity issue and entirely separate from the two pollution issues.

Even if policy integration is achieved through the NCOZM, it would appear that there is still the need for an integrating mechanism at the functional, management level for the Pedro Bank and Pedro Cays management area. The ad hoc arrangement that is in place for Pedro Bank and Pedro Cays at present provides a start on integrating at the management level and might serve to get the integrating process underway. However, in the long run it would be desirable that an integrating mechanism with clear responsibilities and accounting be established. The exact nature of this mechanism remains to be determined, but it must be known to all stakeholders, capable of adapting to evolving needs, and be recognised by the Government of Jamaica as the responsible body. It would also be most rational and probably efficient to have a consistent approach to the management mechanisms for the management areas that will be established throughout the country.

2.2 Level 2 assessment - performance of governance arrangements

The Level 2 assessment evaluates the functionality and performance of governance arrangements according to criteria that will be agreed by stakeholders. Mahon et al (2010) provide the conceptual background to what might be involved in examining governance arrangements in transboundary water systems.

2.2.1 Assessment of principles

The principles that should guide the establishment and the functioning of a governance arrangement, and the extent to which they are being observed in the processes, are an important part of a governance assessment. Assessing them can provide insight into where the system may need attention. Key substantial principles are: sustainability, efficiency, rationality, inclusiveness, equity, precaution and responsiveness. Examples of key procedural principles are: transparency, accountability, comprehensiveness, inclusivity, representativeness, information and empowerment.

For the Pedro Bank assessment 13 principles were selected as shown in Table 10. Representatives of the key stakeholder groups were asked to provide a score for the governance arrangement for each issue for each of the 13 principles based on the extent to which they agreed or disagreed with the statement associated with the principle in Table 10 (disagree strongly = 1, disagree =2, agree = 3, agree strongly = 4). The stakeholder groups were: Fisheries Division, NEPA, Maritime Authority, Coast Guard, a commercial fishing company, the Jamaica Fishers Cooperative Union, fishers from the Pedro Cays and The Nature Conservancy (TNC). They were also asked to indicate the importance of the principle for the particular issue.

The responses provided by stakeholders for the six arrangements are summarised in Figure 4. The detailed responses showing differences in response among stakeholder groups are shown in Appendix 3. On average all principles received high scores for importance from all stakeholders (Figure 4a). At the same time, most stakeholders indicated that they did not think these principles were well reflected in the governance arrangement for the six issues. The average scores tended to lie in the band between disagree (score = 2) and agree (score = 3). Again there was considerable variability among stakeholders (Appendix 3). Detailed inspection of the diagrams in Appendix 3 does provide some additional insight as to the extent to which principles were observed in the various arrangements.

Table 10. Principles assessed and the statements that were used to assess them

Principle	Statement
Accountability	The persons/agencies responsible for the governance processes can be held responsible for their action/inaction
Adaptability	The process has ways of learning from its experiences and changing what it does
Appropriateness	Under normal conditions, this process seems like the right one for what it is trying to achieve
Capability	The human and financial resources needed for the process meet its responsibility are available.
Effectiveness	This process should succeed in leading to sustainable use of ecosystem resources and/or control harmful practices
Efficiency	This process makes good use of the money, time and human resources available and does not waste them.
Equity	Benefits and burdens that arise from this process are shared fairly, but not necessarily equally, among stakeholders
Inclusiveness	All those who will be affected by this process also have a say in how it works and are not excluded for any reason.
Integration	This process is well connected and coordinated with other related processes.
Legitimacy	The majority of people affected by this process see it as correct and support it, including the authority of leaders
Representativeness	The people involved in this process are accepted by all as being able to speak on behalf of the groups they represent
Responsiveness	When circumstances change this process can respond to the changes in what most think is a reasonable period of time
Transparency	The way that this process works and its outcomes are clearly known to stakeholders through information sharing

Overall, capability, efficiency and transparency were perceived to be low in most cases. No principle appeared to be generally high or low, with the possible exception of effectiveness which tended around the 'agree' mark for most arrangements. The conch arrangement was perceived as being highest in accountability and appropriateness; again possibly because it is the most well known one and appears to be working.

The general picture is that stakeholders did not perceive the processes as being highly functional with regard to the principles remains the same. Improvement of these perceptions and scores could be a governance objective. This general conclusion provides the opportunity to reflect on what might be done differently in order to improve the arrangements with respect to the principles. This would be best done in consultation with the stakeholders by asking them what they would like to see changed in order for them to feel comfortable that the principle was being observed in the process. Indeed, the evaluate of the processes with regard to the principles that they are supposed to operate by should be an ongoing activity which is built into the process itself (Garcia et al 2008).

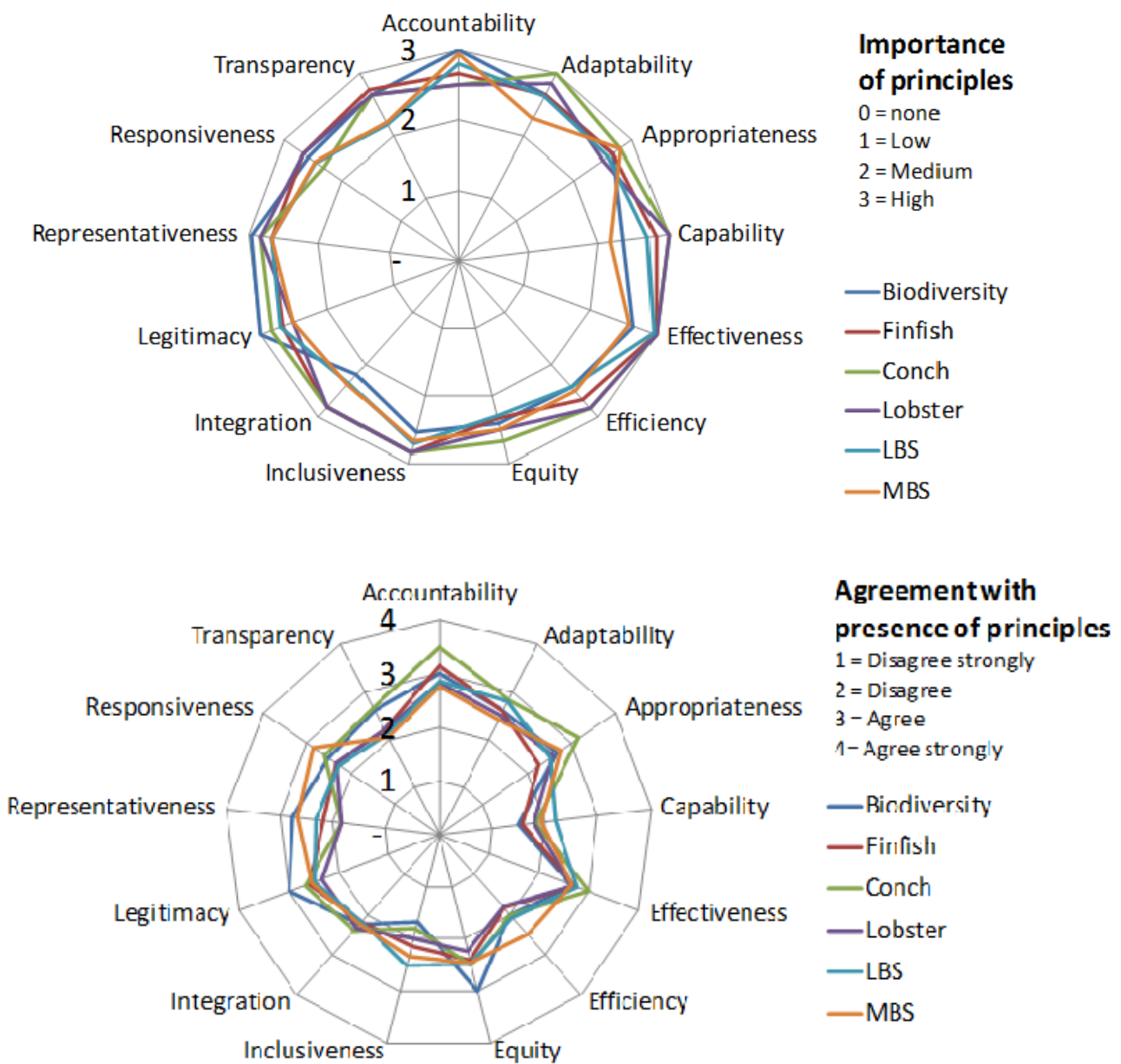


Figure 4. Assessment of the extent to which desired principles are considered to be (a) important and (b) represented, in the governance processes for the five issues identified for the Pedro Bank.

In pursuing the question of how to improve the processes, one could ask, what is it about the biodiversity process that resulted in such a low score on inclusiveness, yet a high one on equity and legitimacy, and what needs to be done to make the process more inclusive? One could also ask, what is it about the conch and finfish processes that result in the difference in appropriateness, and what needs to be done with the finfish process to make it more appropriate. Differences in stakeholder perception can also be explored. In Figure A.3.2b for example, one might wish to explore why NEPA thought the

process was high in equity but the fishers thought it was low, and how the fisher's perception of low equity could be addressed. As indicated above, these conversations are not one-off conversations; they should be part of an ongoing process of governance assessment and that will a framework. Stakeholders should consider if the current assessment methodology provides such a framework or can be adapted to do so.

2.2.2 Assessment of interactions

Functional linkages and interaction within governance arrangements as well as between them are a critical component of the governance system. While the integration analysis can identify structural (governance architecture) arrangements that would make integration possible, or even likely, their existence does not mean that integration is actually taking place. This can only be determined by interviews and by examination of the documentation of the functioning of the processes. The architecture is seen as a necessary, but not sufficient condition for the integration required for an Ecosystem Approach. It should be noted that integration can take place in the absence of appropriate structure on an ad hoc basis, through individual initiative and personal contacts. While this is better than nothing and may in cases be all that is possible give the prevailing architecture, it is not considered to be a sustainable, transparent, accountable approach to addressing the problem of integration across issues.

3 Conclusions and recommendations

Detailed assessments of governance architecture such as the one carried out in this study for the Pedro Bank are few. Technical assessments of resources and their habitats are far more common. The purpose of the assessment carried out here is to dissect and display the suite of governance arrangements for the six major issues identified for Pedro Bank in order to facilitate discussion among stakeholders. This discussion can lead to shared perceptions of what should be in place, what principles should be prominent and how the system should be structured. The assessment is not intended to lead to a prescriptive output regarding what should be in place. Nonetheless, some broad observations can be made on aspects of the system that need attention if arrangements are to be structured in way that is likely to lead to effective governance, including the promotion of intersectoral and inter-issue integration that is needed for an ecosystem approach.

The first observation is that there is the need to clarify and formalize the individual governance arrangements for the six issues and make them known to all stakeholders so that they can take part in the processes effectively.

This require separating the two aspects of uncertainty relating to these processes: (1) uncertainty among responsible agencies regarding which agency is responsible for what stages of the cycle; and (2) lack of awareness among stakeholders, even when there is certainty among responsible agencies.

A second observation is that the governance arrangements for the six issues do not appear to be well integrated at the policy level or at the management level. At the policy level there is a body the NCOZM that is assumed to have the mandate for policy integration and advice at the national level. It also appears to be responsible for policy integration in oceans affairs for national inputs into regional and international processes (Mahon et al 2010). The functionality of this council, especially in the context of Pedro Bank is unclear. It may not be adequately funded or staffed for the role it is expected to play.

At the management level, there is an ad hoc management committee that can make a start in management integration; however, it is recommended that a formal integrating committee with clear responsibilities and accounting be established.

With regard to the Level 2 assessment based on the extent to which stakeholders perceived certain principles as being observed in the arrangements, the general picture is that stakeholders did not perceive the processes as being highly functional with regard to the principles remains the same. Improvement of these perceptions and scores could be a governance objective. This general conclusion provides the opportunity to reflect on what might be done differently in order to improve the arrangements with respect to the principles.

It is recognised that the management of marine ecosystems is in a state of flux in Jamaica, as the draft Fisheries Act has not been passed. As pointed out by Otuokon (2012) this Act makes provisions for addressing several of the uncertainties regarding responsibilities for individual issues, as well as for integrating mechanisms. Its passage is expected to strengthen the national capacity for marine ecosystem based management. It is hoped that dissecting the living marine resource governance issues as has been done in this assessment will provide insights and a framework for developing a robust governance architecture and principled processes for the marine ecosystem of the Pedro Bank and Pedro Cays.

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Appendix 1: Scores provided by key stakeholder agencies for completeness of policy cycle stages for the six governance issues for Pedro bank and Pedro Cays

Policy cycle stage	Coast Guard	Commer- -cial Fishers	TNC	Fishers	Fisher coop	Mari- time Author- ity	NEPA	Fisheries Division
Finfish fishing								
Policy advice	2	0	3	3	1	0	3	3
Policy setting	1	0	3	3	1	0	2	2
Management advice	2	0	3	3	2	0	2	3
Decision-making	2	1	3	3	2	0	2	3
Implementation	2	3	2	3	1	0	3	3
Review	2	2	2	2	2	0	2	2
Data and information	1	2	2	2	2	0	2	
Conch fishing								
Policy advice	3	0	1	2	2	0	2	1
Policy setting	3	0	1	2	2	0	1	0
Management advice	3	0	1	0	3	0	2	1
Decision-making	3	0	1	0	1	0	1	1
Implementation	3	0	1	2	2	0	1	2
Review	2	1	1	2	3	0	1	1
Data and information	1	1	1	3	1	0	1	1
Lobster fishing								
Policy advice	2	3	2	1	1	0	1	2
Policy setting	2	3	2	1	1	0	3	1
Management advice	2	3	2	1	2	0	1	2
Decision-making	2	3	2	1	1	0	3	1
Implementation	2	3	1	1	2	0	1	2
Review	2	3	2	1	2	0	1	1
Data and information	1	3	1	1	2	0	1	2
Sea turtles-seabirds								
Policy advice	2		2	3	1	0	3	1
Policy setting	2		2	3	1	0	1	0
Management advice	1		2	3	1	0	1	1
Decision-making	1		2	3	2	0	1	1
Implementation	2		1	3	1	0	1	1
Review	1		1	1	2	0	1	1
Data and information		1		1	0	2	0	1

Policy cycle stage	Coast Guard	Commer-cial Fishers	TNC	Fishers	Fisher coop	Mari-time Authority	NEPA	Fisheries Division
Land-based pollution								
Policy advice	0	0	1	1	1	0	1	
Policy setting	0	0	1	0	1	0	3	
Management advice	0	1	2	0	2	0	1	
Decision-making	0	0	2	0	2	0	3	
Implementation	0	1	1	0	2	0	1	
Review	0	0	1	2	2	0	1	
Data and information	0	1	1	2	2	0	1	
Marine-based pollution								
Policy advice	0		2	1	2	2	3	
Policy setting	0		2	1	2	0	2	
Management advice	0		1	0	2	2	2	
Decision-making	0		1	0	2	2	2	
Implementation	0		1	0	2	2	2	
Review	0		1	0	1	2	2	
Data and information	0		1	0	1	2	2	

Appendix 2. Tables for identification of stakeholders in Pedro Bank marine governance by issue

Pedro Bank Fishery Ecosystem stakeholders for the finfish issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice		
Meta level - Policy setting		
Policy cycle - management advice	CamPAm, FAO?	UWI
Policy cycle - decision-making		
Policy cycle - Implementation		
Policy cycle – Review of implementation		
Policy cycle - Data and information	Caribbean Regional Fisheries Mechanism?? FAO WECAFC??	National Fisher group? South coast coops (Old Harbour, Whitehouse??...others?? Treasure Beach?? Parrottee??), other fish sanctuaries (Oracabessa, CCAM)

Pedro Bank Fishery Ecosystem stakeholders for the conch fishery issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice		
Meta level - Policy setting		
Policy cycle - management advice	CITES (International), CRFM, CFMC (Caribbean Fisheries Mgt Council)?	Conch fishers group? Formal committee of gov't/stakeholders?
Policy cycle - decision-making		CITES (International), CRFM??
Policy cycle - Implementation		
Policy cycle – Review of implementation		

Policy cycle - Data and information	CITES, CRFM	UWI/other Universities? (UPR)
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Pedro Bank Fishery Ecosystem stakeholders for the lobster fishery issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice		
Meta level - Policy setting		
Policy cycle - management advice	CRFM, FAO WECAFC	Lobster group??
Policy cycle - decision-making		
Policy cycle - Implementation		
Policy cycle – Review of implementation		
Policy cycle - Data and information		UWI/other Universities? (UPR)

Pedro Bank Fishery Ecosystem stakeholders for the biodiversity issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice		
Meta level - Policy setting		
Policy cycle - management advice		Links with TNC?
Policy cycle - decision-making		
Policy cycle - Implementation		
Policy cycle – Review of implementation		TNC, UWI, PBPC, community, CG TNC Formal role for the fish sanctuary re fisheries Pedro Bank Management Plan Advisory Committee (UWI, TNC, NEPA, Fish Div, Coast Guard, Jamaica Fishermen's Coop, MHEW,

		Finder) NEPA Fisheries Division, Coast Guard, Community/fishers UWI
Policy cycle - Data and information	Links to SPAW, WIDECAST, Seabirds Sub-Committee?? UNEP RCU??	Links to National Committees re sea turtles, Biodiversity Policy?? Protected Areas Committee?? UWI – Marine Labs?? NCOZM

Pedro Bank Fishery Ecosystem stakeholders for the LBS issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice	UNEP LBS Protocol	
Meta level - Policy setting		
Policy cycle - management advice		
Policy cycle - decision-making		
Policy cycle - Implementation		
Policy cycle – Review of implementation		
Policy cycle - Data and information		TNC, Pedro Fisher assn?? CCAM

Pedro Bank Fishery Ecosystem stakeholders for the marine based sources of pollution issue by policy cycle stage

Policy cycle stage (governance function)	Regional	National/local
Meta level - policy advice		
Meta level - Policy setting		
Policy cycle - management advice		
Policy cycle - decision-making		
Policy cycle - Implementation		

Policy cycle – Review of implementation		
Policy cycle - Data and information		TNC, Pedro Fisher assn?? CCAM

Appendix 3: The importance and presence of principles in the policy process for each issue as indicated by each stakeholder group

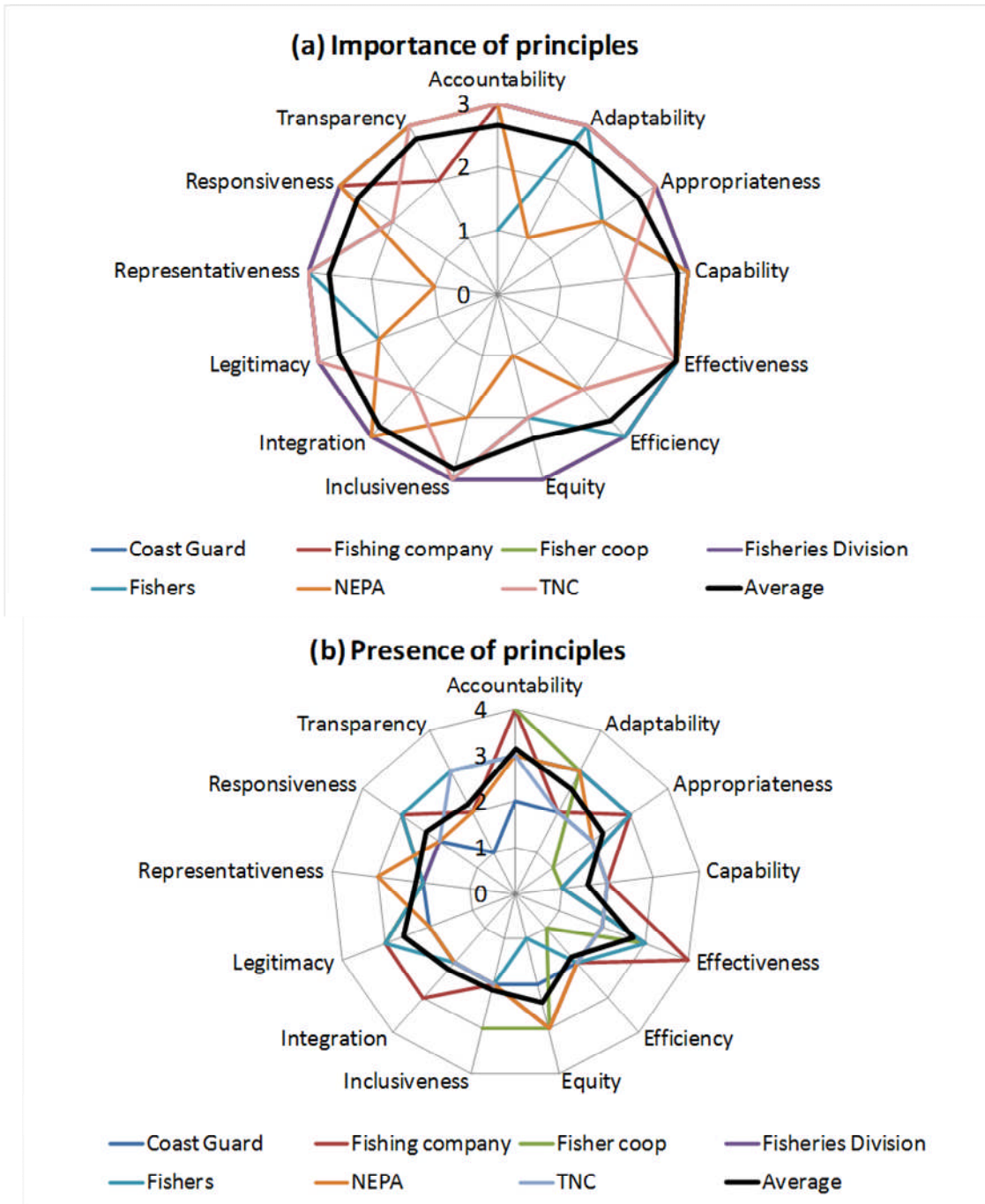


Figure A3.2. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly). in the Pedro Bank governance process for the finfish issue.

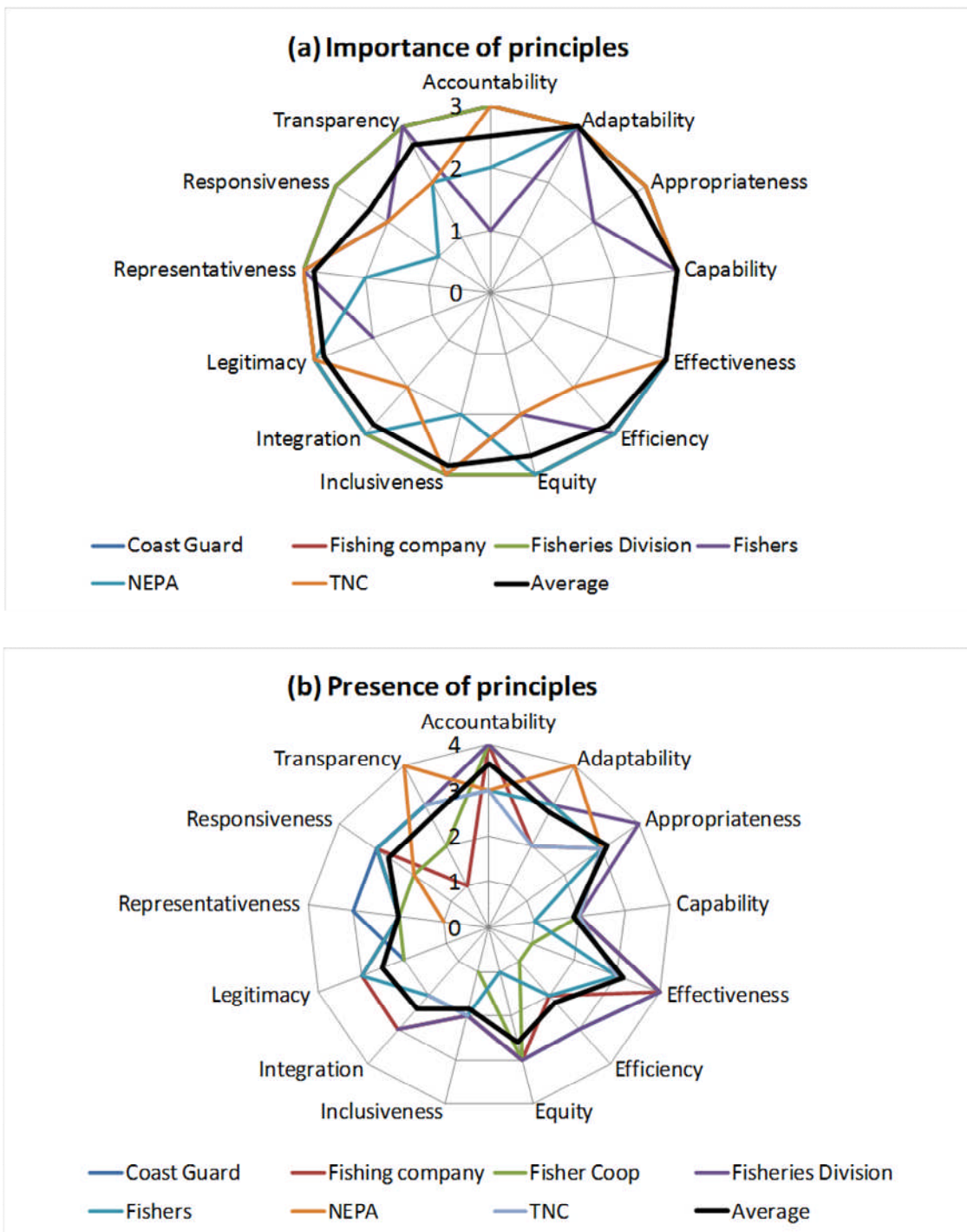


Figure A3.3. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly), in the Pedro Bank governance process for the conch fishery issue.

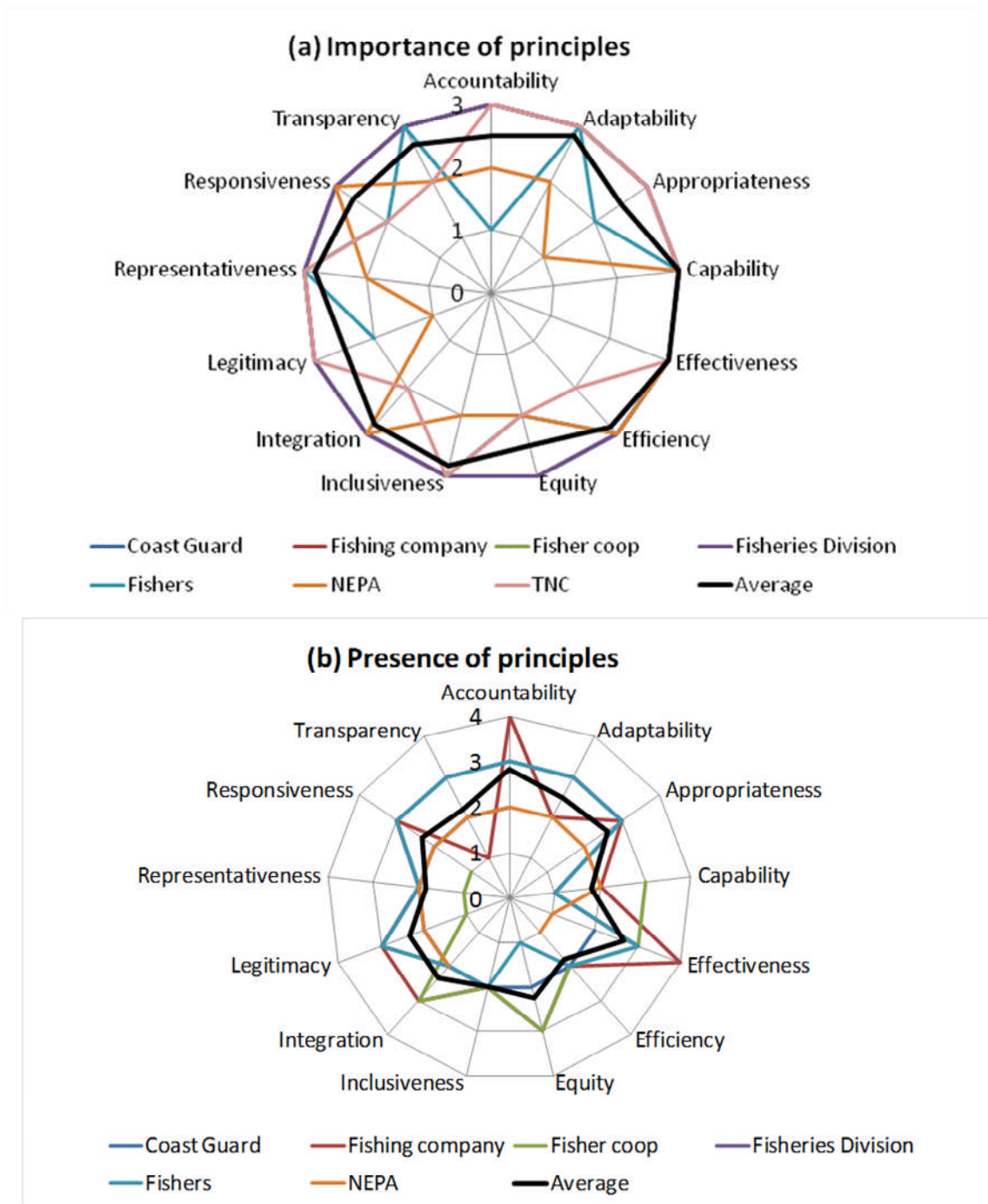


Figure A3.4. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly), in the Pedro Bank governance process for the lobster fishery issue.

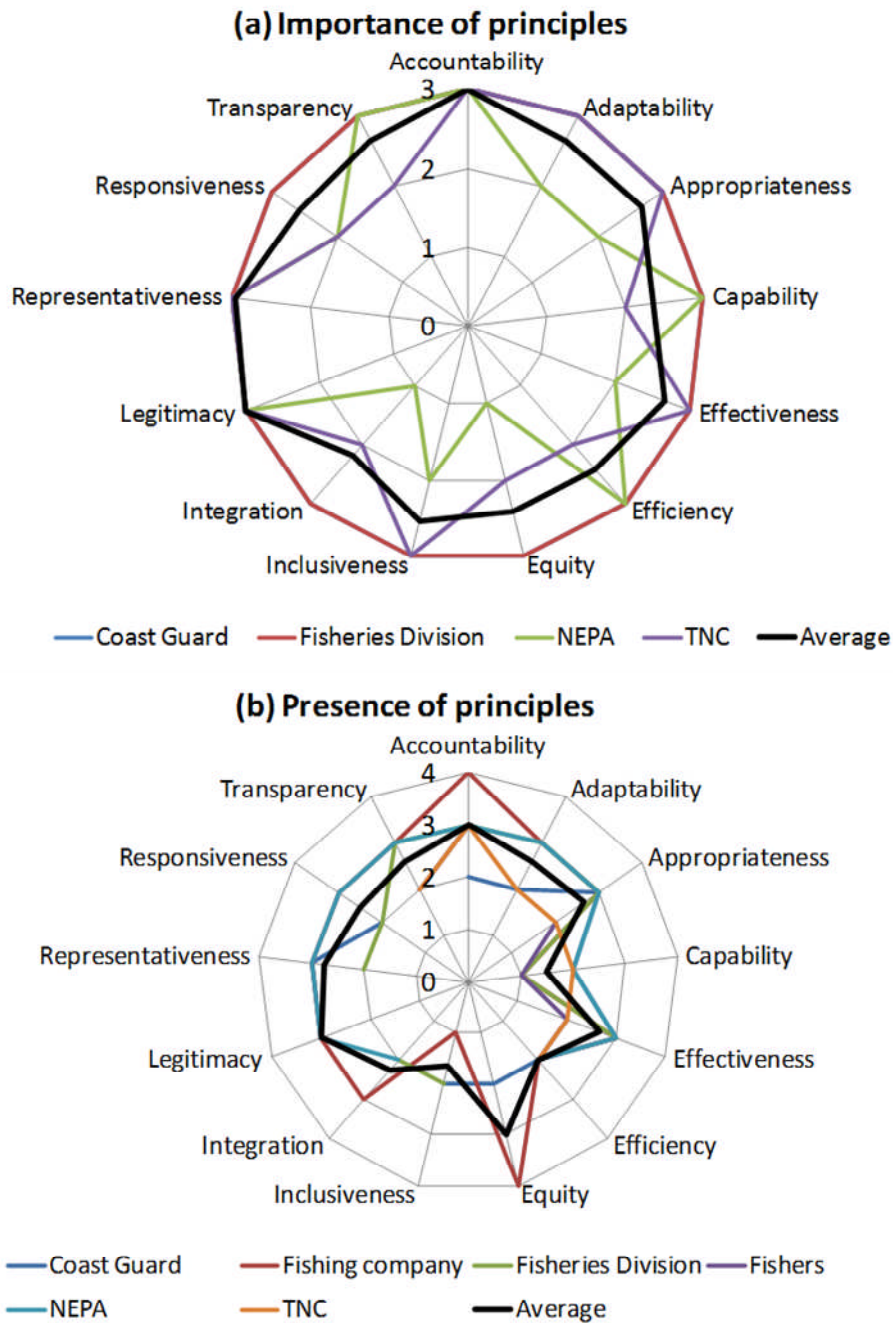


Figure A3.1. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly), in the Pedro Bank governance process for the biodiversity (seabirds and sea turtles) issue.

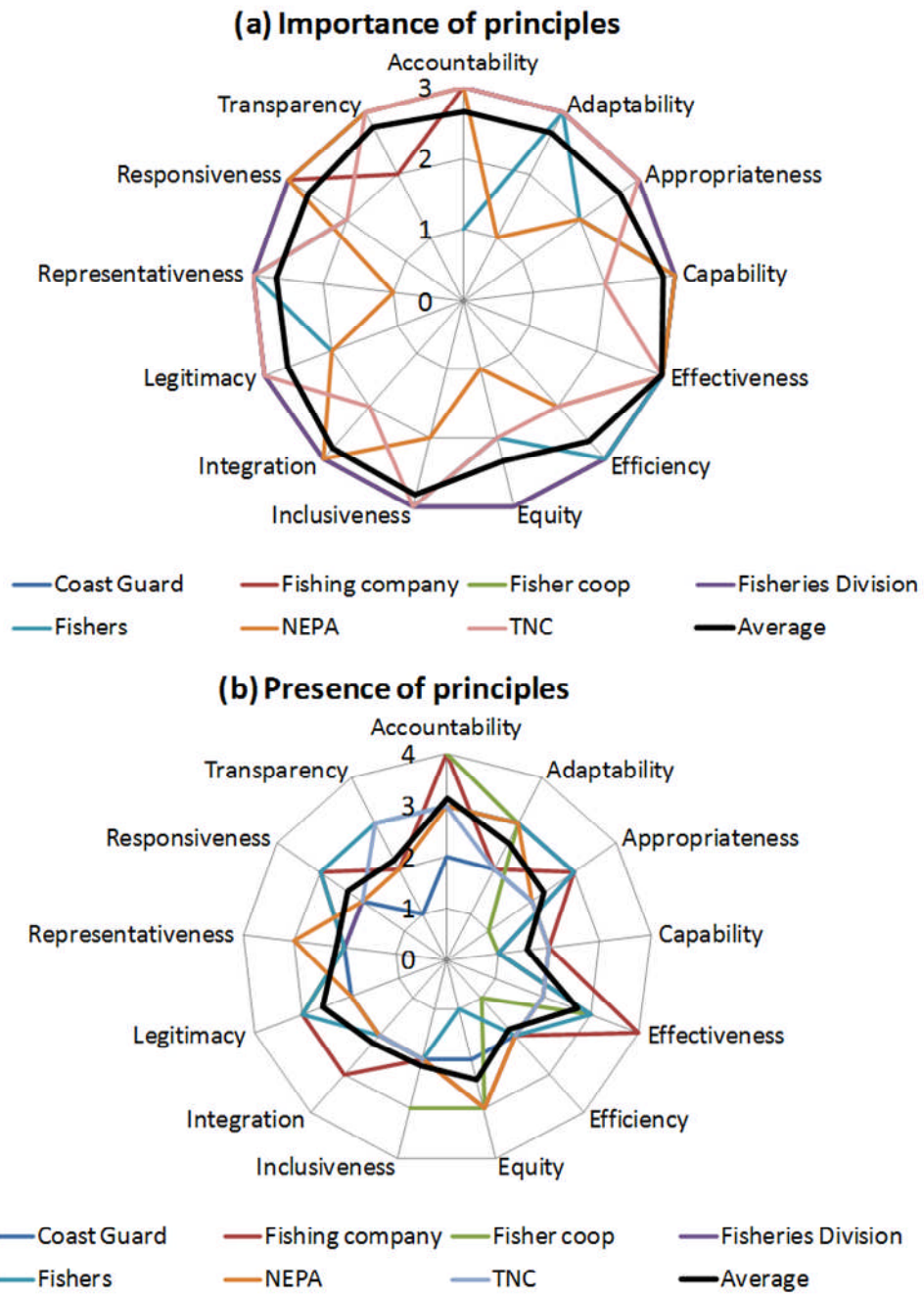


Figure A3.1. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly), in the Pedro Bank governance process for the land based sources of pollution issue.

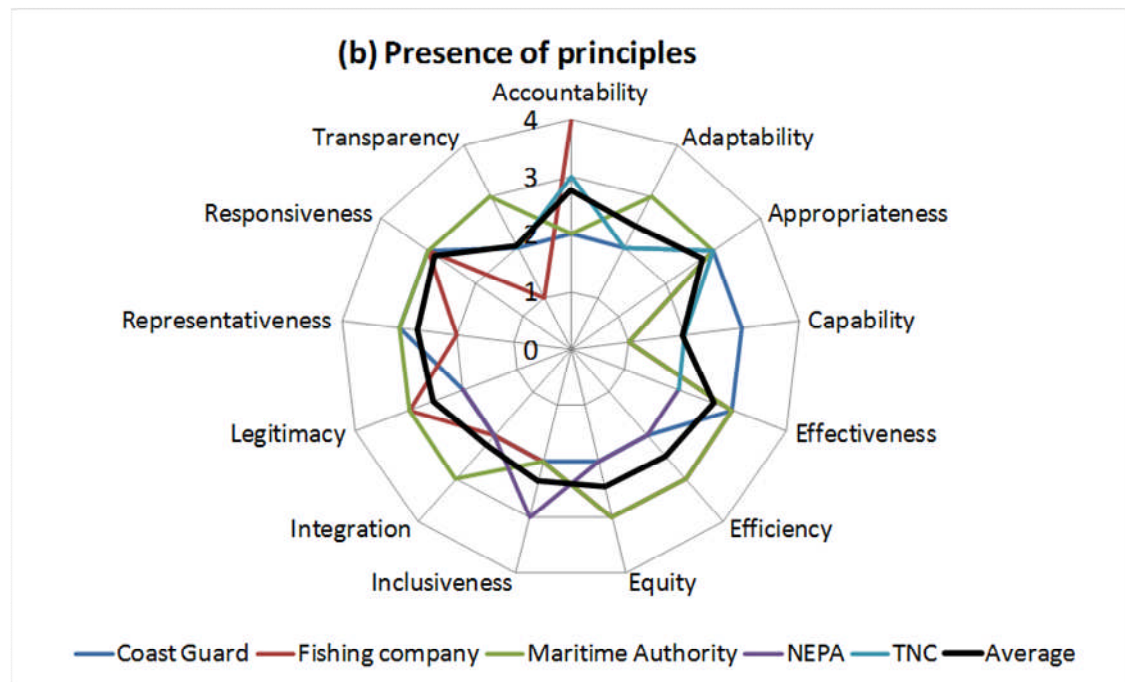
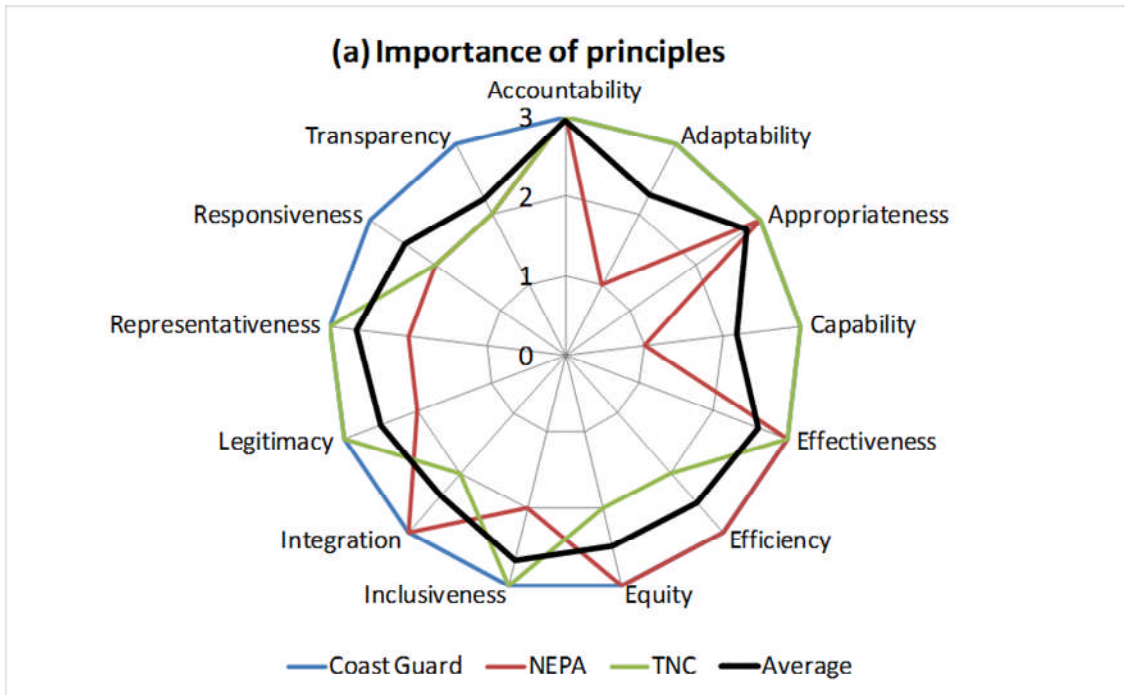


Figure A3.6. Assessment of the extent to which desired principles are considered to be (a) important (0 = none, 1 = low, 2 = medium, 3 = high) and (b) present (1 = Disagree strongly, 2 = Disagree, 3 = Agree, 4 = Agree strongly), in the Pedro Bank governance process for the marine based sources of pollution issue.

End notes

Hi Prof. Mahon,

I noticed the following footnote on pg. 3 of the Draft Governance Assessment Report,

“We need to document how many and what positions they held in an Appendix. Were representatives self-chosen, etc? Was the scoring process done individually, in a group?”

Here is the information (to the best of my knowledge – not sure of the titles/positions):

Agency/Organisation	Who Involved/Positions	Self-chosen?
Fisheries Division	Mr. Stephen Smikle (2 nd in charge)	I sent the document by email to Messrs. Kong & Smikle as top management. I gave a hard copy to Mr. Smikle when I met with himself and a team of Officers. I don't know if he liaised with Mr. Kong in completing the form
NEPA	Ms. Yvette Srong (head of Dept) Ms. Andrea Donaldson Mr. Sean Green	I sent the document to Ms. Donaldson, Mr Green & Mr. Henry (as the persons on the Pedro Mgmt Committee) but Ms. Donaldson was the only one who responded so I liaised with her. She involved Mr. Green and indicated that they would have to involve Ms. Strong as head of the Dept.
Coast Guard	Lt. Aceion Prescott Lt. Alvin Gayle	I sent Lt. Prescott and Lt. Alvin Gayle the form as they were the ones initially attending the Pedro Committee meetings
Maritime Authority	Mr. Bertrand Smith Director – Legal Affairs	I sent the form to Rear Admiral Brady (head of the Maritime Authority) and he asked me to liaise with Mr. Bertrand Smith for my meetings with the Maritime Authority in regard to Pedro Cays generally
Small-scale fishers	Mr. Winston Kerr	Mr. Kerr is one of the long-time fishers that TNC is thinking of involving as a Community Enforcement Officer due to his interest and knowledge
NGO (TNC)	Mrs. Donna Blake	Mrs. Blake is head of TNC - Jamaica
Commercial Fishers	Mr. Ricky Francis B&D Trawling Co. Ltd.	Mr Francis is CEO of the company and the only commercial fisher I was able to talk to (others did not respond to calls/messages left)
Jamaica Fisherman Cooperative Union	Mr. Anthony Drysdale	Mr. Drysdale indicated that the Board went through the form and answered it together, at one of their meetings.

ⁱ Questions that arose in discussing the area to be managed

Will the MPA be a NEPA MPA vs Fisheries Fish Sanctuary. What about an NRCA Environmental Protection Area – that is broad enough to include land and marine provisions. Management areas are sufficiently outlined in current draft fisheries act...entire area of cays considered fish landing beach

Role and relationship of NCOCZM? To be explored?

Look at the Act for Pedro and Morant Cays Act 1907 (rev 1975). Is there provision for management of communities, species? What is the role of the KSAC?

Fisheries Division indicated that the project should proceed based on the new Fisheries legislation.

What is the status of Pedro Bank Committee? Is it formal? What is required to formalize it to take action?

ⁱⁱ This page provides an overview of all the arrangements in the system and their status.

ⁱⁱⁱ There is the question of how far down in detail these should go. This can be a matter of choice, and part of the flexibility of the system, but it should ideally be to the level where the transboundary issue requires a separate arrangement for management. To use a fishery example, individual species or groups of species may each require their own assessment and measures, but may all be handled in one institutional arrangement. However, for geopolitical reasons, some species or groups of species may require separate processes and should be treated as separate issues needing separate arrangements. Ideally, these issues should be identified and quantified in a TDA. If not, experts knowledgeable about the system may have to identify them.

^{iv} This should be based on the TDA but may have to be based on expert judgement, or other sources of regional information. It is to be scored from 0-3.

^v The incompleteness score given in this column will be derived from the completeness scores allocated on the arrangement specific page (Tables 2-7) by subtracting the latter score from 21, which is the maximum possible. This score will then be reallocated into a category where none = 0, low = 1, medium = 2 and high = 3) for input into the Priority for intervention column.

^{vi} This priority would be calculated as the product of the 'collective priority for countries involved for the issue' and 'incompleteness'. It can range from 0-9. Another way of examining the data in the incompleteness and collective priority columns would be a 2x2 high/low matrix.

^{vii} This provides the opportunity for brief comments that may help the user interpret the information provided on the summary page, but is not intended to be a substitute for annotation.

^{viii} Average.

^{ix} This column list the governance function that are considered to be necessary at two levels (a) the policy setting level and (2) the policy cycle level.

^x Organisation or organisations responsible for the function should be listed here

^{xi} These are the institutional scale level or levels at which the function is performed (local, national, subregional, regional, extra-regional)

^{xii} Rate on a scale of 0 = absent, 1 = low (*ad hoc*, irregular, unsupported by formal documentation or little known by stakeholders), 2 = medium, 3 = high (clearly identifiable, regular, documented or supported by policy and legislation and widely known among stakeholders)

^{xiii} This provides the opportunity for brief comments that may help the user interpret the information provided, but is not intended to be a substitute for annotation.

^{xiv} Assume each step is equally important and receives equal weighting.