CERMES Regional Project on Enhancing Management Effectiveness at Three Marine Protected Areas in St. Vincent and the Grenadines, Jamaica & Belize

Inception Training Workshop for Enhancing the Management Effectiveness of the Negril Marine Park, Jamaica, 26-27 January 2006





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Centre for Resource Management and Environmental Studies (CERMES) University of the West Indies, Faculty of Pure and Applied Sciences Cave Hill Campus, Barbados

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1. INTRODUCTION

Participants were welcomed to the workshop by Erwin Caine, Treasurer of the Negril Coral Reef Preservation Society (NCRPS). Jean Brown, President of the NCRPS, delivered opening remarks, noting in particular the opportunity for information exchange among the three project sites. The NCRPS is an NGO that has been delegated since 2002 to co-manage the Negril Marine Park (NMP) with the government of Jamaica.

The context and background to the project, as appears in the announcement (Appendix 1), was outlined by Patrick McConney, the CERMES project manager. The workshop programme (Appendix 2) was agreed to by participants (Appendix 3) who came from within the Negril Environmental Protection Area (EPA), Montego Bay and Kingston. They were drawn from governmental, non-governmental and private sector organisations that are stakeholders in the management and use of the NMP.

All of the participants had attended workshops or meetings dealing with various aspects of NMP management, but none of these events addressed marine protected area (MPA) management effectiveness as its focus. Each participant received a copy of the guidebook *How is your MPA doing?* (Pomeroy et al. 2004) and its worksheets. The workshop was held in the conference room of the Negril Gardens Beach Resort with arrangements made by Elsa Hemmings of the NCRPS.

2. MANAGEMENT GOALS, OBJECTIVES AND INDICATORS

Bob Pomeroy, the lead author of the guidebook and the project's method trainer and adviser, introduced the marine protected area management effectiveness (MPA ME) methodology. He described how the methodology had evolved and had been applied in other locations around the world. Worksheet 1 (Appendix 4) is a checklist of the steps to be followed. A key point is that evaluation must be based on the goals and objectives of the particular MPA. The NMP has a detailed management plan with 12 goals (corresponding to their programmes), each with two or more objectives (Thacker and Hanson 2003). All of the goals and objectives were entered into Worksheet 2 (Appendix 5). Participants selected those that were most relevant and feasible to evaluate by a combination of discussion and open voting. The goal short titles, or programmes, and their prioritisation by vote are shown in Table 1 with the top four noted in brackets.

Some objectives from these four goals were then selected via discussion without voting. During this process of decision-making the participants discovered that there was duplication among several of the goals and objectives in the NMP management plan. Participants also needed to refer to the plan for explanatory notes, and to the NMP Project Manager for interpretation, where the intent of some objectives was ambiguous.

Following the methodological steps presented by Bob Pomeroy, the participants used the NMP management plan goals and objectives to identify overlapping goals and objectives in the guidebook, along with a selection of associated indicators. These are also shown in Appendix 5.

Table 1 Results of voting to select management goals for evaluation

	Goal/programme	Votes awarded
1.	Administration Programme [1]	13
2.	Disaster Preparedness and Emergency Management	2
3.	Education Programme	1
4.	Enforcement Programme	6
5.	Financial Sustainability Programme [3]	11
6.	Lobbying Programme	1
7.	Public Relations Programme [4]	10
8.	Research and Monitoring Programme	5
9.	Resource Management Programme [2]	12
10	. Sustainable Community Development Programme	9
11	. Visitor Management Programme	1
12	. Zoning Programme	7

3. IMPLEMENTING THE EVALUATION

The indicators were examined in detail and prioritised (Appendix 6 with Worksheet 3). For each indicator participants then considered the following factors related to implementation:

- Human resource needs and the evaluation team (Worksheets 4 and 9)
- Equipment needs (Worksheet 5)
- Budget needs (Worksheet 6)
- Timeline
- Audience (Worksheets 7 and 8)
- Outputs

Handouts of the above additional worksheets prepared by the guidebook authors were used for guidance, but were not filled out in the workshop. The selected indicators are presented below.

3.1 B8 Water quality

NEPT is collecting recreational water quality inshore near beaches and swimming areas (TSS, coliform) in Long Bay only. NCRPS now collects terrestrial-related data (nutrients, turbidity). Sampling under this activity must be related to reef restoration (Goal 9, Obj. 9.2) more than to human health. NCRPS must sample offshore sites related to coral reef health to continue sampling previously discontinued (maybe 3 sampling sites along reef edge). Offshore samples (24 samples in total) are to be sent with NEPT inshore samples for analysis elsewhere.

Human resources

Carl Hanson will lead with Nadia Ferguson, assisted by 4 rangers and Erwin Caine. NCRPS has sufficient human resources as part of its normal operations, including data management.

Equipment

- Boat gas and oil .
- Lab glassware
- Maps at WRA .
- Office equipment .

Budget

Based on monthly sampling and half-year of supplies

Expense	Cost (USD)
Boat gas and oil	500
Boat rental (optional/contingency)	160
Chemical supplies for analyses	1400
Sample analysis (nitrates, phosphates, ammonia)	700
Laboratory glassware	300
Handheld GPS	150
Maps at WRA (10 @USD10)	100
Land transportation (fuel and maintenance)	700
Administrative costs	150
Total	4160

Timeline

Monthly sampling (Feb-Sep) results in 8 sample events (boat trips). Sampling will be done in the first week of each month, and analysis in the second week. Mid-October is for report completion.

Chemical supplies

Transportation by truck (fuel and maintenance)

Handheld GPS

Activity description	F	M	A	Μ	J	J	A	S	0
Water sampling	X								
Water sampling		X							
Water sampling			X						
Water sampling				X					
Water sampling					X				
Water sampling						X			
Water sampling							X		
Water sampling								Х	
Preparation of report for GCFI meeting									X

Audience

- NCRPS Board .
- **NEPA**

NEPT .

- National Water Commission (Advisory Monitoring Committee) ٠
- •
- Chamber of Commerce Jamaica Hotel and Tourism Association
- NGIALPA .

Outputs

• Final technical report

GCFI paper

Executive summary

• NEPT website

• NMP newsletter

3.2 B9 Area showing signs of recovery (at habitat level)

Routine video belt transects will be done at reef nine sites (2 shallow and 2 deep transects at each). Total of 36 transects to be done. One site is done per half-day boat trip, making nine trips per month. The total is 27 sampling events.

Human resources

Carl Hanson will lead, assisted by 4 rangers. Brian LaPointe may serve as Scientific Adviser and for data analysis (payment for services may be required). Three (Mar, Jun, Sep) transect months.

Equipment

- Boat Fuel and Oil
- Underwater 100m tape
- Underwater paper
- Zip-loc and mesh bags

- Video tapes
- Underwater slates
- Refreshments
- Field guides

Budget

Expense	Cost (USD)
Fuel and Oil (27 half-day trips)	1500
Boat rental contingency	560
Video tapes (?)	100
Underwater 100m tape (1)	80
Underwater slates (10)	200
Underwater paper	60
Zip-loc and mesh bags	50
Boat trip refreshments	200
Field guides [3 at usd50 each]	150
LaPointe services	500
Total	3400

Timeline

Activity description	F	M	A	Μ	J	J	A	S	0
Transect		X							
Transect					X				
Transect								X	
Preparation of report for GCFI meeting									X

Audience

- NCRPS Board
- Chamber of Commerce

• NEPT

• National Water Commission (Advisory Monitoring Committee)

- NEPA
 - Fisheries Division Dive operators
 - MoBay marine park GCFI
- NGIALPA

Outputs

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- Final technical report
- Executive summary
- NCRPS website

Jamaica Hotel and Tourism Association

• GCFI paper

• NMP newsletter

3.3 S3 Level of understanding of human impacts on resources and S14 Distribution of formal knowledge to community

Suggested to do three short surveys of less than 15 questions. Targets are:

- 1. ~10 households in 10 communities (like SocMon), so 100 total,
- 2. ~ 200 tourists and
- 3. ~100 tourism workers who commute daily from outside the EPA (Lucea or Sav and beyond).

Human resources

Malden Miller will lead, assisted by Erwin Caine and the following.

- 1. ~5 interviewers, Keisha Spencer of NEPT (personal interviews)
- 2. Watersports operators used for beach interviews with visitors. (drop-off survey)
- 3. ~5 interviewers, Keisha Spencer of NEPT. (personal interviews)

Survey design will be assisted by Pomeroy, McConney and also Keisha-Ann Mullings of SDC. Martin Hughes from CREP is to be community liaison. CREP interviewers will do worker surveys with additional assistance. Jean Brown of NCRPS and Keisha-Ann Mullings of SDC will assist especially in Savanna-la-Mar. Data analysis and presentation may be assisted by CERMES, but Malden will check upon using a teacher with SPSS experience for analysis.

Equipment

• Office equipment

Stationery

5

Budget

Expense	Cost (USD)
Interviewee stipends (JAD200/interview for 200 interviews)	615
Interviewer briefing meetings (before and after)	50
Interviewer transportation	100
Office supplies (stationery, printer cartridge)	100
Commercial copying (400 questionnaires)	60
Data analysis and reporting (NCRPS costs)	500
Transportation for survey leaders	100
Communications (phone)	50
Administrative costs	150
Communities validation meetings catering (10 meetings)	400
Total	2125

Centre for Resource Management and Environmental Studies (CERMES)

Timeline

Activity description	F	Μ	A	Μ	J	J	Α	S	0
Survey design	X								
Interviewer training	X								
Visitor interviews		Х							
Tourism worker interviews			Х						
Community surveys				Х	Х				
Data analysis and interpretation						Х	X		
Preparation of report for GCFI meeting								X	

Audience

- NCRPS Board
- NEPT
- Jamaica Hotel and Tourism Association •
- **Fisheries** Division
- Montego Bay Marine Park .
- Tourism workers .
- Mass media .

NGIALPA .

Presentations may be at meetings of tourism organisations and 'environmental events' at hotels.

Outputs

- Final technical report .
- Executive summary ٠
- Tourism stakeholders meetings presentations .
- Community validation meeting communications .
- 3.4 G2 Existence of a decision-making and management body

Mainly collection of NCRPS existing documents and their analysis

Human resources

Erwin Caine will lead with administrative resources provided by NCRPS. Jean Brown will be consultant on the Junior Ranger programme. Carl Hanson is to ensure documents are available.

Equipment Access to photocopier

Budget

Expense	Cost (USD)
Office supplies	50
Data analysis	50
Communications	50
Administrative costs	50
Total	200

GCFI paper NMP newsletter

- NCRPS website •
- Press releases .

TPDCO Dive operators

Chamber of Commerce

- . Communities
- . GCFI •

NEPA

Timeline

Activity description	F	Μ	A	Μ	J	J	A	S	0
Document identification and location	X	X							
Content analysis and reporting			X	Х					
Presentation to new Board						X			
Preparation of report for GCFI meeting							X		

Audience

- Board
- NEPA
- GCFI
- NGIALPA

Outputs

- Executive summary
- GCFI paper

- NCRPS staff
- NEPT
- Chamber of Commerce
- Final technical report

3.5 G12 Level of stakeholder participation and satisfaction in management processes and activities

Focus is on stakeholder (22 Board members, 8 member organisations and funding organisations like NEPA and EFJ) participation (contributing, lobbying) and satisfaction (with the activities undertaken and level of funds raised) in fundraising activities. Revenue and resources obtained to run the park. External evaluation preferred.

Human resources

Fisheries Division (June Masters and Tenile Grant) leads. Carl Hanson will facilitate with documentation for analysis. A short survey (perhaps by phone) is to be done with Board members, member organisations and funding organisations. Expenses include two trips of two days to examine documents.

Equipment

- Communications
- Office supplies
- Transportation

Budget

Expense	Cost (USD)
Communications	100
Office supplies	50
Transportation to Negril	100
Accommodation, meals	400
Total	650

Centre for Resource Management and Environmental Studies (CERMES)

Timeline

Activity description		M	A	Μ	J	J	A	S	0
Inform Board of survey	X								
Identify and assemble documents on stakeholder identities									
Design short survey instruments in Feb									
Conduct surveys in March		X							
Data analysis in April			X						
Report results in June					X				
Prepare GCFI paper by August							X		

Audience

- NCRPS Board
- Staff
- Funding organisations

- NEPA
- NEPT
- NCRPS members

Outputs

- Final report
- Report for board and members
- GCFI paper

3.6 [New] Success of fundraising strategies (revenue and diversity of sources) that form part of the business plan

The focus will be on the fundraising strategy and activities as part of the business plan and annual operations plan. Projected and received revenue and resources obtained to run the park from various sources will be measured. External evaluation is preferred.

Human resources

NEPA (Bernard Blue) will lead, assisted by Rupert Price from NEPA's internal audit branch. Carl Hanson is to facilitate with documentation for analysis. Analysis is to cover financial years 2004-2005 and 2005-2006; maybe first quarter of 2006-2007. This will require one trip of two days to examine documents.

Equipment

- Communications
- Transportation

Budget

Expense	Cost (USD)
Communications	25
Office supplies	25
Transportation to Negril	50
Accommodation, meals	400
Total	500

• Office supplies

Centre for Resource Management and Environmental Studies (CERMES)

Timeline

Activity description	F	Μ	A	Μ	J	J	A	S	0
Inform Board of analysis	X								
Identify and assemble financial and planning documents		X	X	X	Х				
Data/document analysis in April			X						
Optional further data/document analysis (Q1 2006-2007)						Х			
Report results							Χ		
Prepare GCFI paper								X	

Audience

- Board
- Staff
- Funding organisations

- NEPA
- NEPT
- NCRPS members

Outputs

- Final report
- Report for board and members
- GCFI paper

3.7 G6 Availability and allocation of MPA administrative resources

This consists mainly of collection of NCRPS existing documents and their analysis (personnel records, budget, operations plan, equipment inventory/assets)

Human resources

Erwin Caine leads with administrative resources provided by NCRPS. Jean Brown is to assist. Carl Hanson is to ensure documents are available.

Equipment

• Access to photocopier

Budget

Expense	Cost (USD)
Office supplies	50
Data analysis	50
Communications	50
Administrative costs	50
Total	200

Timeline

Activity description		M	A	Μ	J	J	A	S	0
Obtain documents (2005-06 and 2006-07 operations plans)									
Data/document analysis									
Content analysis and reporting		X							
Presentation to Board		X							
Optional further data/document analysis (Q1 2006-2007)						X			
Presentation to new Board in July						X			
Presentation of results for GCFI by August							Х		

Audience

- NCRPS Board
- NCRPS staff
- GCFI

Outputs

- Reports to the Board(s)
- Final technical report
- GCFI paper

3.8 Evaluation team

The evaluation team was assembled as the workshop progressed. Core members are the activity leaders under the overall coordination of Carl Hanson the park manager. He will be the contact person, administrative head and financial manager for all matters concerning the Negril Marine Park management effectiveness evaluation.

4. CONCLUSION

Informally, participants assessed the workshop as having been useful. An optional formal evaluation sheet was provided for those who wished to use it. Administrative setup of the project will take place in January and early February 2006. The field evaluation period will be February – September 2006 prior to the meeting at the Gulf and Caribbean Fisheries Institute (GCFI) in Belize in November 2006. After this phase, emphasis will be on documenting lessons learned and setting up the follow-up grants for adaptive management.

Patrick McConney thanked those attending for their very active participation and NCRPS for the assistance with local logistics. He noted that the summary workshop report would be circulated early in February during which month the inception training workshop in Belize is scheduled to take place. It was noted that the budget for the NMP evaluation probably exceeds the funding available under the MPA ME project alone. Once all three inception workshops and draft budgets were finished there may need to be trade-offs to ensure that implementation is feasible.

Participants were reminded that, besides this project, CERMES would continue to assist in NMP socio-economic monitoring and fisheries management planning through its outreach initiatives.

Jean Brown, President of the NCRPS, closed the workshop on a positive note by observing that despite the many challenges faced in establishing and sustaining the NMP, progress was being made. She noted the large number of partners that maintained an interest in the NMP and the dedication of staff to evaluating past and present management, learning from successes and failures, and implementing adaptive management to ensure sustainability under all conditions.

5. REFERENCES

Pomeroy, R. S., J. E. Parks, and L. M. Watson. 2004. How Is Your MPA Doing? A guidebook of natural and social indicators for evaluating marine protected area management effectiveness. The World Conservation Union (IUCN). Gland, Switzerland. 230 pp.

Thacker, K. and C. Hanson. 2003. Negril Marine Park Management Plan. Negril Coral Reef Preservation Society. 130p.

6. APPENDICES

Appendix 1: Project announcement

The Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies (UWI) Cave Hill Campus is implementing a project to evaluate marine protected area (MPA) management effectiveness, and to learn lessons from this process, at three MPA sites in the Caribbean:

Belize — Sapodilla Cayes Marine Reserve (other Belize MPAs already have similar projects planned)

Jamaica — Negril Marine Park (currently doing a socioeconomic study which this should complement)

St. Vincent and the Grenadines — Tobago Cays Marine Park (currently rearranging its management)

Why a project about MPA management effectiveness?



MPAs are important ecological, economic, social and cultural assets for Caribbean countries and beyond, partly due to their significance to tourism earnings in the region. Despite many projects and proposals, and good intentions, management authorities and small field staffs have struggled with very inadequate capacity to manage most MPAs in the region. This situation needs to be remedied immediately.

A recent guidebook entitled "How is your MPA doing?" sets out new methods for evaluating how a marine park is being managed. Bio-physical,

socio-economic and governance indicators of MPA management are assessed using existing information, natural and social science surveys, and various other means of data collection.

What will actually be done from October 2005 to March 2007?

The summary specific objectives for this project funded by a NOAA Coral Reef Conservation Grant are:

To conduct participatory management effectiveness research and evaluations by training at least 30 people across three MPA sites.

To improve MPAs in the region by monitoring outcomes documented in lessons learned combined with training and communication materials for coursework, research, management and coastal policy.

The project has four main components:

Inception site-specific training workshops in MPA management effectiveness and evaluation Participatory management effectiveness research and evaluations at the three MPA locations A terminal joint workshop on lessons learned and the consequent adaptation of management Production of training materials based on experiences of the process and on lessons learned

What are likely to be the main benefits from this project?

The goal is to promote and institutionalise improved and adaptive coastal management practices and policies in the Caribbean through use of applied research and interdisciplinary training. The project will contribute towards building capacity in MPA management effectiveness evaluation in the Caribbean. Project participants will assess MPA management effectiveness under three main headings:

Bio-physical ... status of the resources, fish populations, water quality, environmental conditions, etc.

Socio-economic ... value of the area to various users, culture, livelihoods, sources of income, etc.

Governance ... achieving goals and objectives, capacity for management, stakeholder groups, etc.

Knowing the strengths and weaknesses of management in the past facilitates making improvements. Integration with the university's communications network, teaching and research programmes, curriculum development and other initiatives will add value to the project and its regional impact through sharing lessons learned and disseminating output products. Participatory and community-based approaches will facilitate stakeholder involvement and adaptive management to ensure that the best practices are institutionalized based upon the lessons learned and the skills acquired during the project or afterwards.

Appendix 2: Programme

When: Thursday 26th – Friday 27th January 2006

Where: Negril Gardens Beach Resort, Negril, Jamaica

Workshop goals and objectives

The **goal** of this workshop is for marine protected area (MPA) managers and key stakeholders in the Negril Marine Park (NMP) to learn how to conduct an evaluation of management effectiveness for the MPA using the methods in the WCPA/WWF "*How Is Your MPA Doing*?" guidebook. There are **three objectives** associated with this inception training workshop:

- 1. To select the most appropriate biophysical, socioeconomic and governance indicators with which to assess the management effectiveness of the NMP
- 2. To understand the process, expected outputs, and resource needs to complete an evaluation
- 3. To develop a feasible work plan and timeline for the evaluation based on the Guidebook.

Day One: Thursday 26 January 2006

Time	Agenda Items				
08:30	Registration and document distribution				
08:45	Update on socioeconomic monitoring and fisheries management planning projects				
09:00	Welcome and Introduction				
	 Welcome to participants and trainer 				
	 Review workshop goals and objectives 				
	 Workshop logistics, questions & answers 				
09:15	Session One: Introduction to the guidebook				
	 Overview of the MPA Management Effectiveness Initiative 				
	 Introduction to the indicators and evaluation process 				
09:45	Break				
10:00	Session Two: Match your MPA aims against those in the guidebook				
	 Overview of part 1; introduce and complete steps 1-1(a) through (e) 				
11:00	Session Three: Select a relevant set of possible indicators				
	 Introduce and complete steps 1-2(a) and (b) 				
12:00	Lunch				
13:00	Session Four: Review and prioritize which indicators you will measure				
	 Introduce and complete steps 1-3(a) through (d) 				
14:00	Session Five: Identify how the selected indicators relate to one another				
	 Introduce and complete steps 1-4 				
15:00	Break				
15:30	Session Six: Assess Resource Needs for Conducting the Evaluation				
	• Overview of Part 2; Introduce and complete steps 2-1(a) through (d)				

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Time	Agenda Items			
16:30	Session Seven: Determine the Audience(s) for the Results			
	 Introduce and complete steps 2-2(a) and (b) 			
17:00	Session Eight: Determine Who Should Participate in the Evaluation			
	 Introduce and complete steps 2-3(a) through (d) 			
17:30	Day wrap-up			
1800	Social event			

Day Two: Friday 27 January 2006

Time	Agenda Items
08:00	 Review of previous day's activities
08:30	 <u>Session Nine</u>: Indicator selection, prioritization and assigning the resources Participants briefly present results of: (a) MPA goals & objectives matched; (b) indicators selected and prioritized; (c) target audience(s); and (d) expected evaluation participants
09:30	Break
10:00	 <u>Session Ten</u>: Develop an Evaluation Timeline and Work plan Introduction to Steps 2-4(a) through (c) Implementation of work: (1) biophysical indicators; (2) socioeconomic indictors; (3) governance indicators; (4) training materials and outreach communication
12:00	Lunch
13:00	 <u>Session Twelve</u>: Collecting and Analyzing the Data; Using the Results Overview of Parts 3 (Steps 3-1 through 3-5) and 4 (Steps 4-1 & 4-2)
14:30	 <u>Session Thirteen:</u> Next Steps Short-term: finalizing implementing and work plans Long-term: follow-up technical assistance and funds
15:00	Break
15:30	 <u>Session Fourteen</u>: Workshop Evaluation and Close Review progress against workshop goal and objectives, participant expectations Closing remarks
16:00	Departures or weekend stayover

Appendix 3: Participants

Name	Organisation or other affiliation
Malden Miller	Caribbean Regional Environmental Programme (CREP)
Martin Hughes	Caribbean Regional Environmental Programme (CREP)
June Masters	Fisheries Division
Tenile Grant	Fisheries Division
Charles Campbell	Marine Police
Brian Zane	Montego Bay Marine Park (MBMP)
Clayton Powell	Montego Bay Marine Park (MBMP)
Linval Getten	NCRPS Chief Ranger
Lloyd Nelson	NCRPS director, Green Island fisher
Ceylon Clayton	NCRPS director, Little Bay fisher
Oscar Reckord	NCRPS director, Orange Bay fisher
Deanne Grant	NCRPS Peace Corps Volunteer
Jean Brown	NCRPS President
Carl Hanson	NCRPS Project Manager
Ansurd Carey	NCRPS Ranger
Vernon Sommerville	NCRPS Ranger
Erwin Caine	NCRPS Treasurer
Nadia Ferguson	Negril Area Environmental Protection Trust (NEPT)
Bridgette Williams	Negril Watersports Association
Cecil Brown	Negril Watersports Association
Keisha-Ann Mullings	Social Development Commission (SDC)
Robert Pomeroy	University of Connecticut
Patrick McConney	University of the West Indies, CERMES

Not all participants attended all workshop sessions. Some visited only for a short period.

Appendix 4: Worksheet 1 — Form to use in tracking the steps of an evaluation

Part 1: Selecting Your Indicators

1-1 Identify your MPA goals and objectives

- Locate the management plan and other relevant information relating to your MPA 1-1a
- 1-1b Review the documents and identify the goals and objectives (see Box 4, The Goals and Objectives of an MPA)
- 1-1c List the goals and objectives of your MPA on the worksheet provided (Worksheet 2)
- 1-1d Identify the goals and associated objectives of your MPA that overlap with those listed in the summary tables of goals and objectives (see Figures 2, 3 and 4 in Section 2)
- 1-1e List the overlapping goals and objectives on the worksheet (using the numbers and names in the summary tables)

1-2 Match relevant indicators to your MPA goals and objectives

- Identify the indicators that match your list of goals and objectives (see Figures 2, 3 and 4 1-2a in Section 2)
- 1-2b List the relevant indicators on the worksheet (using the numbers and names in the summary tables)

Review and prioritize the indicators identified

- 1-3a Review each indicator identified from the description in Appendix 1
- 1-3b Determine the feasibility of measuring the indicators identified
- 1-3c If it is not feasible to measure all indicators, prioritize them
- 1-3d Complete the list of selected indicators

1-4 Identify how the selected indicators relate to one another

Part 2: Planning your evaluation

1-3

2-2

2-1 Assess resource needs for measuring your indicators

- 2-1a Determine the estimated human resources needed to measure and analyze the selected indicators
- 2-1b Determine the equipment needed to measure and analyze the selected indicators
- 2-1c Estimate the budget that will be needed for the evaluation
- 2-1d Analyze the available human resources, equipment and budget; if not sufficient, develop a plan to secure funds. Secure additional resources as necessary.
- Determine the audience(s) who will receive the evaluation results
- 2-2a Identify the target audience(s)
 - 2-2b Determine and prioritize the primary audience(s)

2-3 Identify who should participate in the evaluation

- 2-3a Determine the level of expertise that is needed to conduct the evaluation
- 2-3b Determine which staff or non-staff will conduct the evaluation
- 2-3c Determine how and when to involve the stakeholders

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2-3d Create the evaluation team and determine the people responsible for each task

Develop a timeline and a workplan for the evaluation

- 2-4a Determine the amount of time needed for each activity
- 2-4b Determine when the data need to be collected
- 2-4c Develop an evaluation workplan

Part 3: Conducting your evaluation

2-4

(The checklist may be open at this step for many months while the chosen indicators are evaluated, surveys carried out, and reports completed in accordance with the evaluation techniques suggested in Section 2)

3-1	Implen	nent your evaluation workplan	
3-2	Collect	data	
	3-2a	Study and understand the data collection methods	
	3-2b	Familiarize yourself with the best practices and principles for collecting data in the field	
	3-2c	Determine the sampling approach	
	3-2d	Ensure everything is in place for data collection	
3-3	Manag	e collected data	
	3-3a	Determine who will be the 'data manager'	
	3-3b	Determine how collected data will be submitted to the data manager	
	3-3c	Code the data	
	3-3d	Develop a system for storing and entering the data	
	3-3e	Collate and review the data set	
	3-3f	Determine how to make the data available for analysis and sharing	
3-4	Analyz	e collected data	
	3-4a	Review the questions being asked by the evaluation	
	3-4b	Complete a preliminary analysis	
	3-4c	Determine and prepare analysis	
	3-4d	Capture and prepare results	
3-5	Encou	rage peer review and independent evaluation of results	
Part 4	4: <u>Con</u>	nmunicating results and adapting management	

4-1 Share results with target audiences

- 4-1a Determine which format to use to provide evaluation results and to reach the target audience most effectively
- 4-1b Develop a strategy and a timeline for delivery of results

4-2 Use results to adapt management strategies

(This step should never be closed since adaptive management is an open-ended tool).

Appendix 5: Worksheet 2 — Form on which to list your goals, objectives and indicators

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GOALS RELATED TO YOUR MPA	OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	OBJECTIVES RELATED TO YOUR MPA	OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)
		1.5. Hire additional staff as permitted according to funding availability and space.	1D Human and financial resources sufficient and used efficiently and effectively	G6 Availability and allocation of MPA administrative resources
		1.6. Ensure that staff has the training, equipment and materials to facilitate their jobs.	1D Human and financial resources sufficient and used efficiently and effectively	G6 Availability and allocation of MPA administrative resources
2. Mitigate negative impacts on the natural and infrastructural resources of the park in the event of a disaster or accident. (Disaster Preparedness and Emergency Management)		2.1. Prepare a Disaster Preparedness Plan that will take into account the handling of all emergencies, including, but not limited to hurricanes and flooding, oil spills, and safety in general		
		2.2. Purchase and store supplies needed for emergency management, including a stretcher board, life rings, tarps, plastic containers, etc.		
		2.3. Train staff so that they are adequately prepared to handle any emergency.		
3. Provide the knowledge and skills needed for the development of appropriate attitudes and behaviour amongst park personnel, members of		3.1. Heighten awareness of the public on the importance of conservation of the marine environment.		

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GOALS RELATED TO YOUR MPA	OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	OBJECTIVES RELATED TO YOUR MPA	OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)
NCRPS and the general public, which will contribute to the conservation of coastal and marine resources within the Negril Marine Park. (Education		3.2. Make the public aware of existing rules and regulations within the park.		
r togramme)		3.3. Educate and train the youth in the area through school based and other structured programmes.		
		3.4. Increase knowledge and action and affect change in terms of sustainable living and income generating practices within the Negril Environmental Protection Area (EPA), particularly as this relates to use of the marine and coastal environment.		
		3.5. Establish visitor information and interpretation services that heighten awareness of the park's purposes and policies.		

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(Fig	VERLAPTING GOALS OM SUMMARY TABLES gures 2, 3 and 4 in Section 2)	OBJECTIVES RELATED TO YOUR MPA	OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	RELEVANI INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)
Ired percent ine Park		4.1. Train and empower marine park staff to enforce the marine park		2
laws designed to sources within		regulations and management zones, other environmental laws within the		
Negril		boundaries of the Marine Park and		
ction Area. mme)		Environmental Protection Area in collaboration with the Jamaica		
		Constabulary Force, the National		
		Environmental and Planning Agency,		
		the Negril Area Environmental		
		Protection 1 rust, Public Health Department/ Environmental Control		
		Division, and other relevant agencies.		
		4.2. Educate users and the		
		general public about the resources		
		within the park and how to protect		
		them through voluntary compliance with regulations and laws.		
		4.3 Develor a good working		
		relationship with the Marine Police,		
		Resort Patrol, Tourism Liaison police		
		and Judiciary for effective		

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RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)		G6 Availability and allocation of MPA administrative resources G12 Level of stakeholder participation and satisfaction in management processes and activities	[New] Success of fundraising strategies (revenue and diversity of sources) that form part of the business plan	
OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)		1D Human and financial resources sufficient and used efficiently and effectively	[Nothing close in guidebook to this objective]	
OBJECTIVES RELATED TO YOUR MPA	4.4. Maintain a physical presence in the Park through regular patrols so that the public is encouraged to interact with and rely on Marine Park personnel for education and awareness as well as enforcement of regulations and laws.	5.1. Generate sufficient income to support the maintenance and sustainability of the park.	5.2. [Through fundraising efforts] Heighten community awareness of the importance of financial sustainability as it relates to protection of the coral reef ecosystem, which is the tourism product. (See management plan)	6.1. Develop a list of issues the Marine Park is actively lobbying for and can be used in correspondence with government, education programmes, and public relations.
OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)		Gov Goal 1 Effective management structures and strategies maintained		
GOALS RELATED TO YOUR MPA		5. Develop and implement a financial sustainability plan which will ensure that adequate funds are available to manage the Negril Marine Park in a way that fulfills the objectives of the management plan. (Financial Sustainability Programme)		6. Influence the community and government to adopt policies that support the Marine Park's goals and objectives. (Lobbying Programme)

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GOALS RELATED TO YOUR MPA				Create and maintain an areness and understanding H hin the local community, among a tourist population, and k oughout the international arena	the Negril Marine Park and vironmental Protection Area PA). (Public Relations ogramme)	
OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)				Socio Goal 6 Environmental awareness and knowledge enhanced		
OBJECTIVES RELATED TO YOUR MPA	6.2. Participate on committees and other groups which influence policy and action in the area.	6.3. Provide information i.e. from research and monitoring activities to support action being promoted by the park.	6.4. Comment on all relevant, proposed policy, programmes and developments which may impact on the park.	7.1. Keep the public up to date and aware of the status of the park through its educational programmes and media recesses.	7.2. Involve the public as much as possible on plans and decision making surrounding the Marine Park	7.3. Use conflict as the fuel for constructive criticism and change rather than as an avenue for displaying negative and non productive behaviour.
OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)				6B Public's understanding of environmental and social 'sustainability'		
RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)				S14 Distribution of formal knowledge t community		

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RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	S3 Level of understanding of human impacts on resources S14 Distribution of formal knowledge to community			
OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	6B Public's understanding of environmental and social 'sustainability' improved			
OBJECTIVES RELATED TO YOUR MPA	7.4. Assist local groups and support their efforts with the understanding of the need for a balanced, well rounded community.	8.1. Maintain current coral reef monitoring programme and database established in 1997 on a long term basis, so that seasonal as well as yearly changes can be recorded.	8.2. Maintain the Reef Check coral reef monitoring programme and database established in 1998 on a long term basis with the International Coral Reef Initiative (ICRI).	8.3. Maintain coastal water quality monitoring programme and database established in 1998 on a long term basis.
OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)				
GOALS RELATED TO YOUR MPA		8. Gather, interpret and disseminate information pertinent to the Park on a continual, long term basis, so that changes can be noted over time, analyzed by appropriate scientific personnel and other technical experts, and used to make sound management	decisions. (Research and Monitoring Programme)	

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DATED TO YOUR OVERLAPPING DA OVERLAPTING DA OVERLAPTING DA SUMMARY TABLE PA (Figures 2, 3 and 4 in Section 2) e current capacity Section 2) oratory to include Section 2) plan so that Section 2) plan so that the Section 2) community and Section 2) generating Image: Section 2) nd bunkity and Section 2) spects to the Image: Section 2) orangleting an Image: Section 2) nd further develop Image: Section 2) nd further develop Image: Sects of the nd further develop Image: Sects of the naintain and Park's natural spects of the Image: Sects of the sin the Park. Sin the Park.

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RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	B8 Water quality B9 Area showing signs of recovery				
OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	5C Habitat quality and/or quantity restored or rehabilitated				
OBJECTIVES RELATED TO YOUR MPA	9.2. Establish and maintain a reef restoration programme.	9.3. Improve fish stocks through the implementation of a fisheries management programme.	9.4. User information gleaned from research and monitoring programme to lobby government to make sound management decisions that protect the Park's natural marine resources.	10.1. Employ permanent and temporary staff for the Negril Marine Park from amongst the local community as much as possible.	10.2. Support and implement training programmes that promote projects designed to sustain the community economically and protect the resources.
OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)					
GOALS RELATED TO YOUR MPA				10. Implement programmes in collaboration with local citizens that benefit the community economically, while protecting the natural resources within the Marine Park. (Sustainable	Community Development Programme)

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R MPA OVERLAPPING GOALS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	S OBJECTIVES RELATED TO YOUR MPA	OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)
	10.3. Assist other organizations in the development of community based activities that promote the protection of the Marine Park and EPA's natural resource base.		
	10.4. Maintain, expand and develop a marketing plan for current community based projects within the Negril Marine Park.		
	11.1. Develop and implement a carrying capacity for the Negril Marine Park in collaboration with the Tourism Product Development Company (TPDCO).		
	11.2. Develop an educational tour programme that educates visitors about the Park's resources, promotes the natural attractions in a sustainable way, and provides income for the park.	N	
	11.3. Develop and implement a visitor's centre in the Headquarters that provides a place where visitors can obtain information about the Park and its attractions.		

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PA FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	OBJECTIVES RELATED TO YOUR OI St MPA 12.1. Provide protection for	OVERLAPPING OBJECTIVES FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)	RELEVANT INDICATORS FROM SUMMARY TABLES (Figures 2, 3 and 4 in Section 2)
	critical habitats and ecosystems (i.e. Coral reefs, seagrass beds, mangroves, fish stocks, etc.) as recommended by the scientific advisory council.		
	12.2. Preserve areas of the marine park (as recommended by the scientific advisory council), undisturbed by humans except for purposes of scientific research or education.		
	12.3. Allow regulated human activity with certain zones of the Marine Park, as recommended by the scientific advisory council, for specific activities. (i.e.: recreation, fishing)		
	12.4. Minimize conflict between user groups.		
	12.5. Clearly demarcate all zones for the convenience of users and enforcement personnel.		

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Selected	Yes	Yes		Yes	Yes
Priority (hi/med/lo)	Ξ	'n		ii	, İ
Feasibility (0-4)	m	7		с л	<i>c</i> 0
Known requirement or equipment gaps	NMP lab, supplies. Cannot do heavy metals and coliforms (cost ~JAD\$1900 for set of replicates sent to Kingston).	Basic equipment is available. Have access to own or rented boat. Need base maps (from Port Authority) and to buy handheld GPS. Need assistance to map from IKONOS image.		No known fieldwork gaps. SDC can assist with design. Consider a graduate student. Data analysis through student supervision or otherwise.	No known fieldwork gaps. SDC can assist with design. Consider a graduate student. Data analysis through student supervision or otherwise.
Known technical capacity gaps	NMP has people, but may need more training. NEPT does WQ sampling as does NEPA.	Already doing habitat transects and Reef Check at determined sites in collaboration. Not yet using GIS for data management.		Trained people available. No gaps if particular survey instrument is explained.	Trained people available. No gaps if particular survey instrument is explained. Need to address outputs (disseminated by NCRPS) and outcomes.
Difficulty rating (1-5)	m	σ		m	7
Relevant indicators identified (taken from worksheet 2)	Biophysical 1) B8 Water quality	2) B9 Area showing signs of recovery (total habitat level)	Socioeconomic	1) S3 Level of understanding of human impacts on resources	2) S14 Distribution of formal knowledge to community

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Relevant indicators identified (taken from worksheet 2)	Difficulty rating (1-5)	Known technical capacity gaps	Known requirement or equipment gaps	Feasibility (0-4)	Priority (hi/med/lo)	Selected
Governance						
1) G2 Existence of a decision- making and management body	2	Documentation exists	No known gaps	4	hi	Yes
2) G6 Availability and allocation of MPA administrative resources	2	Documentation exists	No known gaps	4	hi	Yes
3) G12 Level of stakeholder participation and satisfaction in management processes and activities	3	Documentation exists on event participants. Some covered in SocMon	No known gaps	4	н	Yes
4) [New] Success of fundraising strategies (revenue and diversity of sources) that form part of the business plan						Yes

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