Management Effectiveness Workshop
ICRI Meeting Cairns 17th July 2012

Marinating Management Effectiveness - assessing management of Marine Protected Areas

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Vice-Chair, IUCN World Commission on Protected Areas
Role of evaluation in protected area management

Protected areas play a critical role in biodiversity conservation’ ... are ‘natural solutions’ to climate change...

and are vital to community health and well-being.

Effective management is increasingly essential to allow PAs to play this role in the face of escalating challenges – climate change, increasing resource demands, invasive species...
Evaluation can:

• Help us manage better (adaptive management)
• Help reporting (promote accountability and transparency)
• Help allocate resources efficiently (prioritising)
• Help build a supporting constituency (stakeholder participation and understanding)
Management effectiveness

The WCPA Framework

Evaluating Effectiveness
A framework for assessing management effectiveness of protected areas 2nd Edition
Marc Hookings, Sue Stallard, Fiona Lexington, Nigel Dudley and Joel Coupland
Peter Valentine, Series Editor

Context:
status and threats
Where are we now?

Planning
Where do we want to be and how will we get there?

Output
What did we do and what products or services were produced?

Inputs
What do we need?

Management process
How do we go about it?

Evaluation
## Introduction to MEE

### WCPA assessment framework

<table>
<thead>
<tr>
<th>Elements of evaluation</th>
<th>Context</th>
<th>Planning</th>
<th>Inputs</th>
<th>Process</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>Where are we now?</em></td>
<td><em>Where do we want to be?</em></td>
<td><em>What do we need?</em></td>
<td><em>How do we go about it?</em></td>
<td><em>What were the results?</em></td>
<td><em>What did we achieve?</em></td>
</tr>
<tr>
<td><strong>Criteria</strong></td>
<td>Significance</td>
<td>PA legislation and policy</td>
<td>Resourcing of agency</td>
<td>Suitability of management processes</td>
<td>Results of management actions</td>
<td>Impacts: effects of management in relation to objectives</td>
</tr>
<tr>
<td></td>
<td>Threats</td>
<td>PA system design</td>
<td>Resourcing of site</td>
<td></td>
<td>Services and products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vulnerability</td>
<td>Reserve design</td>
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<td></td>
<td>National policy</td>
<td>Management planning</td>
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<td></td>
<td>Engagement of Partners</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Focus of evaluation</strong></td>
<td>Status</td>
<td>Appropriateness</td>
<td>Economy</td>
<td>Efficiency</td>
<td>Effectiveness</td>
<td>Effectiveness Appropriate-ness</td>
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</tbody>
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### Impact Assessment

- **Effects**: outcomes of management in relation to objectives
- **Outputs**: results of management actions
- **Economy**: resourcing of site
- **Suitability**: resourcing of agency
- **Efficiency**: resourcing of site
- **Effectiveness**: management planning
- **Appropriateness**: engagement of partners
- **Where are we now?**: status
- **Where do we want to be?**: planning
- **What do we need?**: inputs
- **How do we go about it?**: process
- **What were the results?**: outputs
- **What did we achieve?**: outcomes
Methodologies vary in terms of:

- Level of detail in assessment (rapid, intermediate, in-depth)
- Scale (single site, system)
- Type of data collected (qualitative, quantitative, mixed)
- WCPA elements assessed
- Management dimensions addressed
- Self assessment vs External assessment
- Internal or public reporting
Diverse methodologies
Introduction to MEE

Site level assessments

• Provide detailed information that can be used to understand and improve management
• Involves site managers in evaluation – value of the process
• Can link to annual work programming and site management planning
• Focus on applying the information to adapt management
Introduction to MEE

System level assessments

1. Most assessment system focus on the site level
2. There are a number of aspects of effective management of PAs that depend on system level characteristics and are not captured even when all PAs in a system are individually assessed
3. Adaptation of management at the system level may be essential to improve overall management and this should be guided and monitored by assessments at this scale
4. Can provide an opportunity for stakeholder and external expert input into assessments that is not possible with large site level assessment exercises
International Context

Management Effectiveness Evaluation has become part of the international agenda for protected area management.
4.2.1 Develop and adopt, by 2006, appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected area management and governance ...

4.2.2 Implement management effectiveness evaluations of at least 30 percent of each Party’s protected areas by 2010... (increased to 60% by 2015 at COP10 in Nagoya)

4.2.3 Include information resulting from evaluation of protected areas management effectiveness in national reports under the Convention on Biological Diversity.

4.2.4 Implement key recommendations arising from site- and system-level management effectiveness evaluations, as an integral part of adaptive management strategies.
Target 11 calls for at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas to be conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas.
**International Context**

- Coverage of Protected Areas
- Overlay of protected areas with key areas for biodiversity
- Protected Area Management Effectiveness (PAME)

**2010 Biodiversity Indicators – Protected Area Indicators**
International Context

2010 Biodiversity Indicator Results

Diagram showing various indicators and trends over time.
Global Study of PA Management Effectiveness (PAME)

Three Key Objectives

1. **What has been done?** – Assess progress towards the PoWPA targets for PAME
2. **Status of parks, key threats, factors influencing effectiveness of management.**
3. **Integrate management effectiveness information into the World Database on Protected Areas.**
Adopt PAME systems

1. PAME studies undertaken in 128 countries using more than 45 methodologies (most based in IUCN-WCPA PAME Framework)
2. Systems for PAME adopted in Korea, Finland, India, many Central and South American countries, Australia, Mexico etc.
3. Systems being developed in South Africa, Thailand, Scotland
4. Many other systems that we are learning about through this and other studies
1. Global MEE database records assessments from 355 MPAs over period 1999-2009
2. A number of significant MPA studies undertaken since 2009 (Thailand MPA study, Galapagos assessment)
3. Other MEE studies include MPAs (Colombia AEMAPPS, Victorian State of Parks)
4. Other studies reported today that are not included in the Global Study dataset
<table>
<thead>
<tr>
<th>MPA’s assessed</th>
<th>Overall</th>
<th>Africa</th>
<th>Asia</th>
<th>Europe</th>
<th>LAC</th>
<th>Oceania</th>
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<td>0</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
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<td>2003</td>
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<td>2</td>
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<td>0</td>
<td>4</td>
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<td>2004</td>
<td>29</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2005</td>
<td>54</td>
<td>2</td>
<td>31</td>
<td>5</td>
<td>9</td>
<td>7</td>
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<tr>
<td>2006</td>
<td>118</td>
<td>20</td>
<td>3</td>
<td>11</td>
<td>82</td>
<td>2</td>
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<tr>
<td>2007</td>
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<td>14</td>
<td>0</td>
<td>1</td>
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<td>2008</td>
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<td>2</td>
<td>8</td>
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<td>0</td>
<td>9</td>
<td>6</td>
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<td>Total</td>
<td>158</td>
<td>56</td>
<td>49</td>
<td>40</td>
<td>110</td>
<td>29</td>
</tr>
</tbody>
</table>
1. Data is available from approximately half of the PAME studies
2. Grouped individual indicators into 45 “headline” indicators and rescaled results into a common 0 to 1 format
Common reporting format and management effectiveness indicator

Diverse systems
Grid classification
Common reporting format
WDPA ME Indicator set
WCPA Framework Elements

Thousands of indicators
‘translation’ rules
45 headline indicators
14 indicators
6 indicators
<table>
<thead>
<tr>
<th>WCPA Framework Element</th>
<th>WDPA ME indicator</th>
<th>Common reporting format ‘headline indicators’</th>
</tr>
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<tr>
<td><strong>Context</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>1. Value and significance</strong></td>
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<td>Five important values</td>
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<tr>
<td></td>
<td></td>
<td>Level of significance</td>
</tr>
<tr>
<td><strong>2. Threats and constraints</strong></td>
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<td>Five important threats</td>
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<tr>
<td></td>
<td></td>
<td>Level of extent and severity of threats</td>
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<td></td>
<td></td>
<td>Trend of threats</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Constraint or support from external political and civil environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main constraining factors of external political and civil environment</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. Site design and establishment</strong></td>
<td></td>
<td>Park gazetral and tenure security</td>
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<tr>
<td></td>
<td></td>
<td>Adequacy of legislation</td>
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<tr>
<td></td>
<td></td>
<td>Marking and security/ fencing of park boundaries</td>
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<tr>
<td></td>
<td></td>
<td>Appropriateness of design</td>
</tr>
<tr>
<td><strong>4. Management Planning</strong></td>
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<td>Management plan</td>
</tr>
<tr>
<td>WCPA Framework Element</td>
<td>WDPA ME indicator</td>
<td>Common reporting format ‘headline indicators’</td>
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<tr>
<td>------------------------</td>
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<td>---------------------------------------------</td>
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<tr>
<td><strong>5. Management resources</strong></td>
<td>Adequacy of staff numbers</td>
<td>Adequacy of current funding</td>
</tr>
<tr>
<td></td>
<td>Adequacy of current funding</td>
<td>Security/ reliability of funding</td>
</tr>
<tr>
<td></td>
<td>Adequacy of infrastructure, equipment and facilities</td>
<td>Adequacy of relevant and available information for management</td>
</tr>
<tr>
<td><strong>6. Information base</strong></td>
<td>Adequacy of relevant and available information for management</td>
<td></td>
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<tr>
<td>WCPA Framework Element</td>
<td>WDPA ME indicator</td>
<td>Common reporting format ‘headline indicators’</td>
</tr>
<tr>
<td>------------------------</td>
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<td>---------------------------------------------</td>
</tr>
</tbody>
</table>
| 7. Internal management systems and processes | Effectiveness of administration including financial management  
Effectiveness of governance and leadership  
Management effectiveness evaluation undertaken  
Model of governance  
Adequacy of building and maintenance systems  
Adequacy of human resource management policies and procedures  
Adequacy of staff training  
Staff morale  
Staff/ other management partners skill level |
| 8. Law enforcement | Adequacy of law enforcement capacity  
List (up to) five main issues for law enforcement |
| 9. Stakeholder relations | Appropriate program of community benefit/ assistance  
Communication program  
Involvement of communities and stakeholders  
List community benefit/ assistance program |
| 10. Visitor management | Character of visitor facilities and services  
Level of visitor use  
Visitors catered for and impacts managed appropriately |
| 11. Natural and cultural resource management systems | Natural resource and cultural protection activities undertaken  
Sustainable resource use - management and audit  
Research and monitoring of natural/ cultural management  
Threat monitoring |
<table>
<thead>
<tr>
<th>WCPA Framework Element</th>
<th>WDPA ME indicator</th>
<th>Common reporting format ‘headline indicators’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>12. Achievement of work program</td>
<td>Achievement of set work program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Activities/ services and outputs have been produced</td>
</tr>
<tr>
<td>Outcomes</td>
<td>13. Conservation outcomes</td>
<td>Proportion of stated objectives achieved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation of nominated values - trend</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation of nominated values - condition</td>
</tr>
<tr>
<td></td>
<td>14. Community outcomes</td>
<td>Effect of park management on local community</td>
</tr>
</tbody>
</table>
Overall effectiveness of Protected Area Management

Histogram of Mean

- **Lowest third** – management clearly inadequate: 14%
- **Middle third** – basic management: 27%
- **Top third** – management ‘sound’: 38%
Global ME Database overall scores for MPAs

Mean score for MPAs identical to mean for all PA data
PAME Global study results

Performance of indicators

- 8 Park gazettal
- 17 Effectiveness of governance and leadership
- 9 Marking and security/fencing of park boundaries
- 8a Tenure issues
- 23 Staff/other management partners skill level
- 45 Threat monitoring
- 10 Appropriateness of design
- 41 Conservation of nominated values - condition
- 6 Constraint or support
- 43 Effect of park management on local community
- 40 Proportion of stated objectives achieved
- 16 Adequacy of relevant and available information
- 12 Adequacy of staff numbers
- 38 Achievement of set work program
- 22 Adequacy of staff training
- 39 Results and outputs have been produced
- 26 Adequacy of law enforcement capacity
- 11 Management plan
- 37 Research and monitoring
- 15 Adequacy of infrastructure, equipment and facilities
- 19 Effectiveness of administration
- 24 Adequacy of hr policies and procedures
- 33 Visitors catered for and impacts managed appropriately
- 28 Involvement of communities and stakeholders
- 29 Communication program
- 21 Adequacy of building and maintenance systems
- 20 Management effectiveness evaluation undertaken
- 13 Adequacy of current funding
- 14 Security/reliability of funding
- 30 Appropriate program of community benefit/assistance
Marine Protected Areas

Performance of indicators

- 8 Park gazettal
- 46 Adequacy of pa legislation
- 10 Appropriateness of design
- 16 Adequacy of relevant and available information
- 45 Threat monitoring
- 38 Achievement of set work program
- 8a Tenure issues
- 41 Conservation of nominated values -condition
- 19 Effectiveness of administration
- 25 Staff morale
- 37 Research and monitoring
- 24 Adequacy of hr policies and procedures
- 3 Level of extent and severity of threats
- 6 Constraint or support
- 15 Adequacy of infrastructure, equipment and...
- 21 Adequacy of building and maintenance systems
- 20 Management effectiveness evaluation...
- 14 Security/ reliability of funding
- 13 Adequacy of current funding
### Global Study Results

## Summary by WCPA Element

<table>
<thead>
<tr>
<th>Element</th>
<th>Mean</th>
<th>Sample</th>
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<tbody>
<tr>
<td>Average inputs</td>
<td>0.50</td>
<td>2302</td>
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<tr>
<td>Average planning</td>
<td>0.64</td>
<td>2305</td>
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<tr>
<td>Average process</td>
<td>0.49</td>
<td>2336</td>
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<tr>
<td>Governance processes</td>
<td>0.51</td>
<td>2301</td>
</tr>
<tr>
<td>Community processes</td>
<td>0.45</td>
<td>2189</td>
</tr>
<tr>
<td>Environmental processes</td>
<td>0.49</td>
<td>2199</td>
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<tr>
<td>Average output</td>
<td>0.53</td>
<td>1368</td>
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<tr>
<td>Average outcome</td>
<td>0.60</td>
<td>2196</td>
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</table>
Most commonly reported threats

5.1 Hunting, killing & collecting terrestrial animals
5.3 Logging & wood harvesting
5.2 Gathering terrestrial plants or plant products (non-timber)
6.1 Recreational activities
7.3c Edge effects, adjacent land use, buffer zone issues
2.3 Livestock farming & grazing within protected area
7.3 Other Ecosystem Modifications
1.1 Housing & settlement within protected area
7.1 Fire & Fire Suppression
9 Pollution (all types)
8.1 Invasive Non-Native/Alien Plants
3.2 Mining & quarrying
7.3a Fragmentation within protected area
2.1 Annual & perennial non-timber crops within protected area
5.4 Fishing, killing & harvesting aquatic resources
4.1 Roads & Railroads
7.2 Dams & Water Management/Use
8.1a Invasive Non-Native/Alien Animals
11.1 Habitat shifting & alteration
3.3 Renewable Energy
7.3b Increased isolation from other natural habitat
4.2 Utility & Service Lines
7.3a Fragmentation within protected area
3.1 Oil & gas drilling
12.3 Destruction of cultural heritage

Number of reports nominating threat
Strongest aspects of management

1. Park establishment (gazettal, boundary marking, tenure issues, PA design)
2. Conservation of key values, achievement of management outputs and outcomes.
3. Governance
Marine Protected Areas

**Strongest aspects of management**

1. Park establishment (gazettal, tenure issues, PA design)
2. Adequacy of legislation
3. Governance
Weakest aspects of management

1. Programs of community benefit and assistance
2. Adequacy, security and reliability of funding
3. Communication programs
4. Involvement of communities and stakeholders
5. Building and maintenance systems
Marine Protected Areas

Weakest aspects of management

1. Adequacy of staffing, training, skill levels
2. Adequacy, security and reliability of funding
3. Visitors catered for and impacts managed
4. Programs of community benefit and assistance
5. Management effectiveness studies
Highest correlation of individual indicators with overall Management Effectiveness

1. Communication program
2. Natural and cultural resource management programs
3. Management plans
4. Involvement of communities and stakeholders
PAME Global study results

Highest correlations with Outcomes

Biodiversity outcomes
1. Skills of staff
2. Resolution of tenure issues
3. Achievement of work program
4. Effectiveness of law enforcement

Community outcomes
1. Communication program
2. Program of community benefit
3. Involvement of communities and stakeholders
## Marine Protected Areas

### Correlations between indicators

<table>
<thead>
<tr>
<th>Headline indicators</th>
<th>Outcome indicators</th>
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</thead>
<tbody>
<tr>
<td>Conservation of nominated values - condition</td>
<td>Conservation of nominated values –trend</td>
</tr>
<tr>
<td>Level of significance</td>
<td>0.86** (21)</td>
</tr>
<tr>
<td>Level of extent and severity of threats</td>
<td>0.45** (13)</td>
</tr>
<tr>
<td>Constraint or support</td>
<td>0.47** (55)</td>
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<tr>
<td>Tenure issues</td>
<td>0.74** (10)</td>
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<td>Management effectiveness evaluation undertaken</td>
<td></td>
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<tr>
<td>Staff/ other management partners skill level</td>
<td>0.53* (10)</td>
</tr>
<tr>
<td>25 Staff morale</td>
<td>0.60** (28)</td>
</tr>
<tr>
<td>32 Sustainable resource use</td>
<td>-0.75** (13)</td>
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<tr>
<td>39 Results and outputs have been produced</td>
<td>0.61* (10)</td>
</tr>
</tbody>
</table>
Introduction to MEE

Thank you