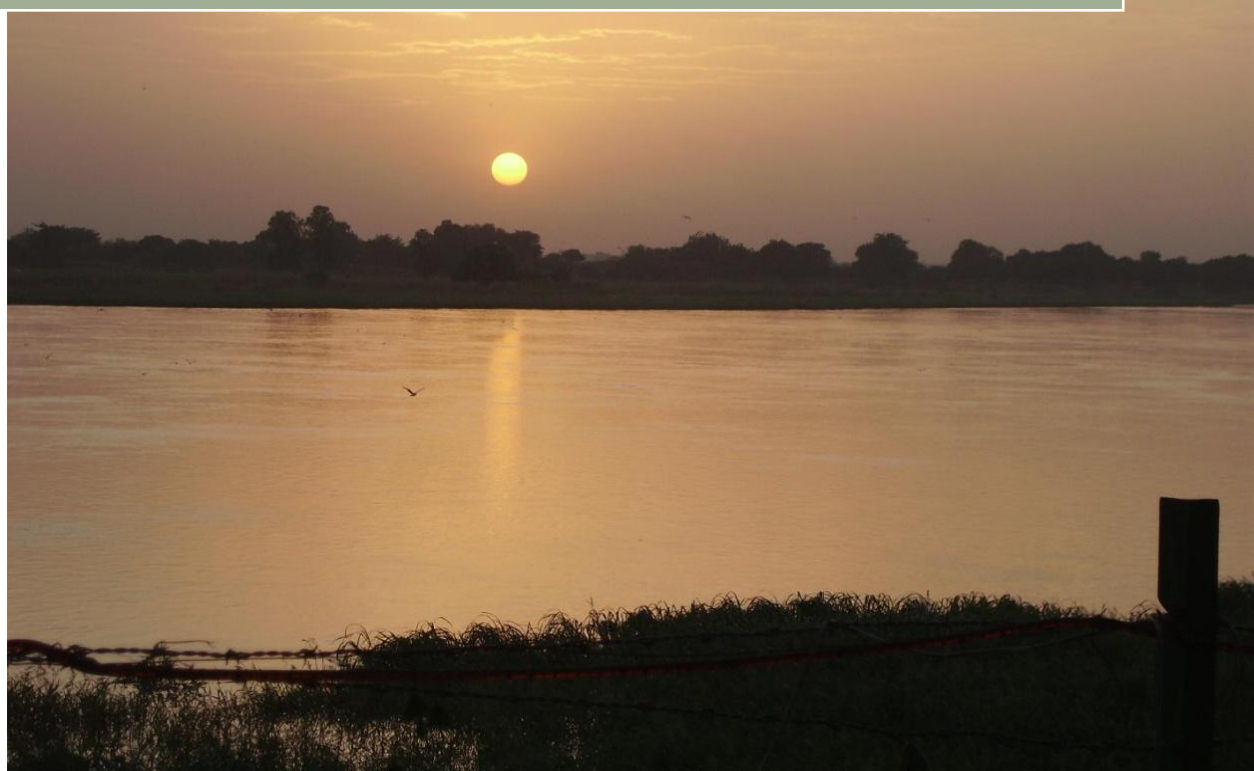


# Protected Areas Resilient to Climate Change, PARCC West Africa



2012

Protected Area Management Effectiveness: A regional framework and additional METT module for monitoring the effects of climate change



ENGLISH

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## Executive Summary

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The successful management of protected areas is complex and requires the full consideration of all threats, including the potential effects of climate change. However, existing site-focused tools for measuring protected area management effectiveness do not include the likely impacts of climate change in their assessments.

Here, we have suggested additions to the original Protected Area Management Effectiveness (PAME) framework developed by IUCN's World Commission on Protected Areas (WCPA), and integrated a new climate change component. Based on this updated framework, we have developed two new indicators related to the integration of climate change issues into site-based management effectiveness assessments. These new indicators have been proposed as additions to the existing Management Effectiveness Tracking Tool (METT) that is mandatory for use in all GEF protected area projects globally, and is also used by many nations and NGOs working with protected areas effectiveness. By adding new questions to the METT that address the planning and management response to climate change at the protected area scale, we have proposed changes to a generic tool that can be used in all protected areas to monitor management issues related to climate change.

This suggested additional module to the METT tool, and the background WCPA PAME framework, will be presented and revised at meetings in the West Africa region. The five countries involved in the PARCC project will subsequently be encouraged to test this new methodology in the field, in as many protected area sites as possible, particularly those where there has been no previous assessment of protected area management effectiveness. By bringing this tool to the national level, we will be able to field test the tool, and also help nations gather important information on the status of management in their protected area networks that will enable them to measure changes over time, including in relation to climate change.

Following the revision of the new module, we will seek endorsement of the new METT tool by WWF and The World Bank, as well as GEF and the WCPA. It is hoped that the new version will then be used worldwide to assess the management effectiveness of protected areas, including climate change effects.

## Chapter 1: Introduction

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Protected areas are one of the key tools available for nations to use to conserve biodiversity in the long term (Bertzky *et al.* 2012). In the face of a changing global environment where natural habitats continue to decline, protected areas are likely to become increasingly important as conservation tools (Thomas *et al.* 2012). It is therefore crucial to be able to assess how effective protected areas are at conserving biodiversity in consideration of all existing and potential threats.

Climate change is already having an impact on the distribution of some species (Root *et al.* 2003; Parmesan and Yohe 2003), and it is projected to have an even greater impact in the future (e.g. Thomas *et al.* 2004; Hole *et al.* 2009). In some parts of Africa, a number of species are likely to be particularly affected by climate change due to their high level of exposure (IPCC 2007) and low adaptive capacity (e.g. Garcia *et al.* 2011). It is therefore crucial that protected areas, in Africa and beyond, are designed and effectively managed in a way that takes into account the current and likely impacts of climate change (Rands *et al.* 2010).

More recently it has been further recognised that there is a relationship between effective PA management and climate change adaptation and mitigation (Dudley *et al.* 2010), and that protected areas have a role to play in slowing the worst effects of climate change (e.g. Scharlemann *et al.* 2010). General recommendations have also been made on incorporating climate change in PA system design (Mawdsley *et al.* 2009); but these suggestions do not provide specific guidance for individual protected areas and how these should be managed for adaptation and mitigation.

## Chapter 2: Regional framework

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An overarching framework for Protected Area Management Effectiveness (PAME) has already been developed by the IUCN World Commission on Protected Areas (WCPA) (Hockings *et al.* 2006). According to this framework the evaluation of management effectiveness can be carried out for a variety of reasons, including providing better management in a changing environment, effective resource allocation, improved accountability and transparency, community involvement, and promotion of PA values. The WCPA framework was developed to be used globally, but can also be used at the regional or national scales. In addition, the WCPA PAME framework has been used as the basis for the development of the Management Effectiveness Tracking Tool (METT) by Stolton *et al.* (2007), which is the most widely used tool for the assessment of PAME at the scale of individual protected areas.

For the purposes of the PARCC West Africa project we use the existing WCPA PAME framework and the existing Management Effectiveness Tracking Tool (METT) as the basis of a regional framework for protected area management effectiveness. We have adapted these existing tools to integrate the impacts of climate change.

### *The existing WCPA PAME framework*

The WCPA framework divides management effectiveness into three main categories: 1. the design of individual PA sites and PA systems; 2. the adequacy of management systems and processes; and 3. the delivery of PA objectives.

Six elements are included under these three categories, which comprise the assessment of the following topics (as described in Hockings *et al.* 2006):

- *Context*: Understanding the background of the PA, including its values, the threats that it faces, and opportunities available, its stakeholders, and the management and political environment;
- *Planning*: Establishing a vision, goals, objectives and strategies to conserve values and reduce threats;
- *Inputs*: Allocating resources of staff, money and equipment to work towards the objectives;
- *Process*: Implementing management actions according to accepted processes;
- *Outputs*: Producing specific results (goods and services, usually outlined in management plans); and
- *Outcomes*: Achieving long term goals and objectives.

These elements contribute to providing a comprehensive understanding of how effectively protected areas are managed. In practice, Hockings *et al.* (2006) described a series of four steps to be followed to conduct an assessment: 1. Defining assessment objectives, scope and resourcing; 2. Choosing and developing a methodology, including establishing an assessment team and defining indicators; 3. Implementing the assessment in the field and office; and 4. Interpreting, communicating and using the results.

## *A modified WCPA PAME framework that integrates climate change*

The WCPA framework provides a solid basis for all work on protected area management effectiveness, including the considerations of climate change. Climate change impacts are mentioned in the original WCPA PAME Framework (Hockings *et al.* 2006). For instance, it is suggested that ‘climate and disaster mitigation’ should be included in the context of the assessment, and that climate change should be included in threat assessments. It is also mentioned that the design of large protected areas can contribute to increasing their resilience to climate change impacts, and that these impacts should be noted when considering assessment results. However, the PAME framework does not suggest any specific way of assessing the impacts of climate change on PAs.

Here, we adapt the framework to include the likely effects of climate change on protected areas under the different elements of the evaluation:

- *Context*: Understand the current status of the PA with regards to climate change threats;
- *Planning*: Ascertain the current ability of the PA to face climate change impacts;
- *Inputs*: Establish what is needed to make the PA resilient to the effects of climate change;
- *Process*: Define a suitable approach and interventions to allow the PA to adapt;
- *Outputs*: Measure the resilience of the PA to climate change; and
- *Outcomes*: Achieve long term effective PA management in the face of climate change.

We summarise in Table 1 below the additional climate change components which we integrated into the PAME framework.

Elements of Evaluation	Explanation	Criteria that are assessed	Focus of Evaluation	<i>Climate change (CC) component</i>
Context	<b>Where are we now?</b> Assessment of importance, threats and policy environment	<ul style="list-style-type: none"> <li>• Significance</li> <li>• Threats</li> <li>• Vulnerability</li> <li>• National Context</li> <li>• Partners</li> </ul>	Status	<i>Status of PA regarding CC threat and CC Vulnerability Assessment</i>
Planning	<b>Where do we want to be?</b> Assessment of protected area design and planning	<ul style="list-style-type: none"> <li>• Protected area legislation and policy</li> <li>• Protected area system design</li> <li>• Reserve design</li> <li>• Management planning</li> </ul>	Appropriateness	<i>Extent to which planning documents address likely CC impacts and propose mitigation and adaption responses</i>
Inputs	<b>What do we need?</b> Assessment of resources needed to carry out management	<ul style="list-style-type: none"> <li>• Resourcing of agency</li> <li>• Resourcing of site</li> </ul>	Resources	<i>Availability of information on CC predictions and likely impacts as a basis for planning and decision making</i>

Processes	<b>How do we go about it?</b> Assessment of the way in which management is conducted	<ul style="list-style-type: none"> <li>• Suitability of management processes</li> </ul>	Efficiency and appropriateness	<i>Approach and management interventions to enable PA to adapt to CC</i>
Outputs	<b>What were the results?</b> Assessment of the implementation of management programmes and actions; delivery of products and services	<ul style="list-style-type: none"> <li>• Results of management actions</li> <li>• Services and products</li> </ul>	Effectiveness	<i>Measuring resilience of species and PA to CC</i>
Outcomes	<b>What did we achieve?</b> Assessment of the outcomes and extent to which they achieved objectives	<ul style="list-style-type: none"> <li>• Impacts: effects of management in relation to objectives</li> </ul>	Effectiveness and Appropriateness	<i>Success of PA design and management in the face of CC and long term monitoring of CC impacts</i>

**Table 1.** Summary of the WCPA PAME framework (Hockings *et al.* 2006) with the addition of new climate change elements in the last column in italics.

### *Development of indicators*

Following our assessment and adaptation of the WCPA PAME framework and a review of the existing METT tool for site scale assessment of management effectiveness, we believe that two main issues need to be added to assess whether the PA is likely to adapt to the impacts of climate change: 1. whether the PA has been designed or planned to consider the actual or probable impacts of climate change, and 2. whether it is being specifically managed for the actual or probable impacts of climate change.

For each of these two additional issues, we developed a set of 4 indicators with a score of 0 to 3 for each indicator (which will be subsequently used in the development of the additional METT modules). These two questions and corresponding four levels of performance in relation to indicators are as follows:

1. Has the protected area been designed to take into account the likely effects of climate change?
  - 1.0: Climate change was not taken into account during PA design, and no subsequent consideration has been given to address its impact
  - 1.1: Climate change was not taken into account during PA design, some planning, but no action has been taken to address its impact
  - 1.2: Climate change was not taken into account during PA design, but planning and some action to address its impact has taken place
  - 1.3: Climate change was taken into account during PA design or in subsequent planning for impacts and has resulted in changes to the PA design



2. Is the protected area being consciously managed to adapt to climate change?
- 2.0: There have been no efforts to consider adaptation to climate change in management.
  - 2.1: Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans.
  - 2.2: Detailed plans have been drawn up about how to adapt management to predicted climate change, but these have yet to be translated into active management.
  - 2.3: Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented.

This core set of performance indicators could possibly be modified and/or expanded at national level, after having been refined and tested the methodology at the regional level. Based on this framework, we present in Chapter 2 an additional METT module on climate change to be integrated to the METT assessment form.

## Chapter 3: Development of an additional METT module to cover climate change

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### *Introduction to the METT*

The Management Effectiveness Tracking Tool was initially developed by the World Wide Fund for Nature (WWF) and the World Bank in 2005, and subsequently revised in 2007, with the aim of improving the management of forest protected areas (Stolton *et al.* 2007). It is based on the framework for PAME developed by the WCPA (Hockings *et al.* 2006), presented and updated in Chapter 1.

The aim of the METT is to track progress in the management of protected areas, harmonise the different reporting approaches across multiple sites, and provide important information to park managers and protected area management authorities. The data collected for the METT also allow measurement of progress towards the CBD Aichi Target 11 that relates to management effectiveness of protected areas (Bertzky *et al.* 2012). The existing METT questionnaire is designed to be quick and easy to complete, and relies on site-based expert knowledge. It is a self-assessment system ideally meant to be completed by protected area managers. Carrying out repeat assessments allow managers to highlight trends in effectiveness through time, and the impact of project support to strengthen different elements of management at the site scale. The METT tool is a mandatory part of all protected area projects supported by the Global Environment Facility, and is also widely applied by different national protected area authorities, and in projects supported by large conservation NGOs such as WWF, Conservation International, BirdLife International, and funding bodies such as the Critical Ecosystem Partnership fund. METT data are compiled globally and managed in a database under the coordination of the IUCN WCPA management effectiveness working group.

The current METT consists in 2 main sections:

- Datasheets where contextual information is stored, including the PA objectives and threats; and
- An Assessment Form; this consists of a questionnaire with 4 alternative text answers to 30 questions; as well as text fields to record qualitative justification for the assessment. All questions have been designed to be easily answered by protected area staff, without the need for additional research.

The full assessment form, including the new climate change module can be found in Annex 1.

The effectiveness score for each reserve can be calculated as a percentage for each of the six elements of the WCPA framework: context, planning, inputs, process, outputs and assessments (Stolton *et al.* 2007). These overall scores have been used in various publications to assess the effectiveness of protected area management at global and regional scales (Leverington *et al.* 2010<sup>a, b</sup>, Berksky *et al.* 2012) and are becoming the global standard for the measurement of progress towards the CBD targets, and the elements of

other conventions (such as the World Heritage and Ramsar Convention) that also require the assessment of management effectiveness.

The existing METT already includes some questions related to climate change. Notably, in the section on Protected Areas Threats: Data Sheet 2, question 11 focuses on ‘Climate change and severe weather’. However, there is no specific question on climate change impacts in the Assessment Form.

### *Additional module*

The suggested addition of new METT questions to track the effects of climate change on protected areas has already been informally proposed by WWF (2009) as METT adaptation to support REDD mechanisms.

Based on the proposed framework and indicators developed in Chapter 1, the additional METT module we propose to add to the Assessment Form consists in two new questions to assess whether the PA design took into consideration the likely climate change impacts on the PA, and if the PA is being managed in a way that takes climate change into account, with 4 different criteria for each question. This additional module is presented in Table 2 below.

Issue	Criteria	Score	Comment / Explanation	Next steps
31a. Has the protected area been designed to take into account the likely effects of climate change?	Climate change was not taken into account during PA design, and no subsequent consideration has been given to address its impact	0		
	Climate change was not taken into account during PA design, some planning, but no action has been taken to address its impact	1		
	Climate change was not taken into account during PA design, but planning and some action to address its impact has taken place	2		
	Climate change was taken into account during PA design or in subsequent planning for impacts and has resulted in changes to the PA design	3		
31b. Is the protected area being consciously managed to adapt to climate change?	There have been no efforts to consider adaptation to climate change in management	0		
	Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans	1		

	Detailed plans have been drawn up about how to adapt management to predicted climate change, but these have yet to be translated into active management	2		
	Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented	3		

**Table 2.** Additional METT questions and criteria on climate change issues to be integrated to the Assessment Form.

### *Field testing and next steps*

This additional METT module will be assessed and revised at a regional workshop based on the input of national experts. Following the workshop, the new METT including the additional climate change module will be tested in the five countries of the project.

After this field testing, we will present the revised and updated METT tool to the WCPA Management Effectiveness Task force and the main users of the METT (GEF, WWF, Conservation International and some selected countries) for their review of the proposed new version.

After this review has been completed, we will seek endorsement for this new tool and will try and ensure that this new version becomes the one used across the protected area networks of the world. If this can be achieved, the issue of climate planning and climate management within protected areas will have been largely mainstreamed into the data collection processes, and the data could be used by countries to report at national and global levels on responses at the protected area level to climate change.

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## Annex 1. Management Effectiveness Tracking Tool (METT), including new module on climate change

### *Reporting on Progress at PA sites: Data Sheet 1*

Name, affiliation and contact details for person responsible for completing the METT (email etc.)				
Date assessment carried out				
Name of protected area				
WDPA site code (these codes can be found on <a href="http://www.unep-wcmc.org/wdpa/">www.unep-wcmc.org/wdpa/</a> )				
Designations	National	IUCN Category	International (please also complete sheet overleaf )	
Country				
Location of protected area (province and if possible map reference)				
Date of establishment				
Ownership details (please tick)	State	Private	Community	Other
Management Authority				
Size of protected area (ha)				
Number of staff	Permanent		Temporary	
Annual budget (US\$) – excluding staff salary costs		Recurrent (operational) funds		Project or other supplementary funds
What are the main values for which the area is designated				
List the two primary protected area management objectives				
Management objective 1				
Management objective 2				
No. of people involved in completing assessment				
Including: (tick boxes)	PA manager <input type="checkbox"/>	PA staff <input type="checkbox"/>	Other PA agency staff <input type="checkbox"/>	NGO <input type="checkbox"/>
	Local community <input type="checkbox"/>	Donors <input type="checkbox"/>	External experts <input type="checkbox"/>	Other <input type="checkbox"/>
Please note if assessment was carried out in association with a particular project, on behalf of an organisation or donor.				

Information on International Designations			
<b>UNESCO World Heritage site (see: <a href="http://whc.unesco.org/en/list">whc.unesco.org/en/list</a>)</b>			
Date listed	Site name	Site area	Geographical co-ordinates
Criteria for designation (i.e. criteria i to x)			
Statement of Outstanding Universal Value			
<b>Ramsar site (see: <a href="http://www.wetlands.org/RSDB/">www.wetlands.org/RSDB/</a>)</b>			
Date listed	Site name	Site area	Geographical Number
Reason for Designation (see Ramsar Information Sheet)			
<b>UNESCO Man and Biosphere Reserves (see: <a href="http://www.unesco.org/mab/wnbrs.shtml">www.unesco.org/mab/wnbrs.shtml</a>)</b>			
Date listed	Site name	Site area Total: Core: Buffer: Transition:	Geographical co-ordinates
Criteria for designation			
Fulfilment of three functions of MAB (conservation, development and logistic support.)			
Please list other designations (i.e. ASEAN Heritage, Natura 2000) and any supporting information below			
Name:	Detail:		
Name:	Detail:		
Name:	Detail:		
Name:	Detail:		
Name:	Detail:		
Name:	Detail:		



## Protected Areas Threats: Data Sheet 2

Please tick all relevant existing threats as either of high, medium or low significance. Threats ranked as of **high** significance are those which are seriously degrading values; **medium** are those threats having some negative impact and those characterised as **low** are threats which are present but not seriously impacting values or **N/A** where the threat is not present or not applicable in the protected area.

### 1. Residential and commercial development within a protected area

Threats from human settlements or other non-agricultural land uses with a substantial footprint

High	Medium	Low	N/A	
				1.1 Housing and settlement
				1.2 Commercial and industrial areas
				1.3 Tourism and recreation infrastructure

### 2. Agriculture and aquaculture within a protected area

Threats from farming and grazing as a result of agricultural expansion and intensification, including silviculture, mariculture and aquaculture

High	Medium	Low	N/A	
				2.1 Annual and perennial non-timber crop cultivation
				2.1a Drug cultivation
				2.2 Wood and pulp plantations
				2.3 Livestock farming and grazing
				2.4 Marine and freshwater aquaculture

### 3. Energy production and mining within a protected area

Threats from production of non-biological resources

High	Medium	Low	N/A	
				3.1 Oil and gas drilling
				3.2 Mining and quarrying
				3.3 Energy generation, including from hydropower dams

### 4. Transportation and service corridors within a protected area

Threats from long narrow transport corridors and the vehicles that use them including associated wildlife mortality

High	Medium	Low	N/A	
				4.1 Roads and railroads (include road-killed animals)
				4.2 Utility and service lines (e.g. electricity cables, telephone lines,)
				4.3 Shipping lanes and canals
				4.4 Flight paths

### 5. Biological resource use and harm within a protected area

Threats from consumptive use of "wild" biological resources including both deliberate and unintentional harvesting effects; also persecution or control of specific species (note this includes hunting and killing of animals)

High	Medium	Low	N/A	
				5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)
				5.2 Gathering terrestrial plants or plant products (non-timber)
				5.3 Logging and wood harvesting
				5.4 Fishing, killing and harvesting aquatic resources

### 6. Human intrusions and disturbance within a protected area

Threats from human activities that alter, destroy or disturb habitats and species associated with non-consumptive uses of biological resources

High	Medium	Low	N/A	
				6.1 Recreational activities and tourism
				6.2 War, civil unrest and military exercises
				6.3 Research, education and other work-related activities in protected areas
				6.4 Activities of protected area managers (e.g. construction or vehicle use, artificial watering points and dams)
				6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors

**7. Natural system modifications**

Threats from other actions that convert or degrade habitat or change the way the ecosystem functions

High	Medium	Low	N/A	
				7.1 Fire and fire suppression (including arson)
				7.2 Dams, hydrological modification and water management/use
				7.3a Increased fragmentation within protected area
				7.3b Isolation from other natural habitat (e.g. deforestation, dams without effective aquatic wildlife passages)
				7.3c Other 'edge effects' on park values
				7.3d Loss of keystone species (e.g. top predators, pollinators etc)

**8. Invasive and other problematic species and genes**

Threats from terrestrial and aquatic non-native and native plants, animals, pathogens/microbes or genetic materials that have or are predicted to have harmful effects on biodiversity following introduction, spread and/or increase

High	Medium	Low	N/A	
				8.1 Invasive non-native/alien plants (weeds)
				8.1a Invasive non-native/alien animals
				8.1b Pathogens (non-native or native but creating new/increased problems)
				8.2 Introduced genetic material (e.g. genetically modified organisms)

**9. Pollution entering or generated within protected area**

Threats from introduction of exotic and/or excess materials or energy from point and non-point sources

High	Medium	Low	N/A	
				9.1 Household sewage and urban waste water
				9.1a Sewage and waste water from protected area facilities (e.g. toilets, hotels etc)
				9.2 Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, e.g. unnatural temperatures, de-oxygenated, other pollution)
				9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)
				9.4 Garbage and solid waste
				9.5 Air-borne pollutants
				9.6 Excess energy (e.g. heat pollution, lights etc)

**10. Geological events**

Geological events may be part of natural disturbance regimes in many ecosystems. But they can be a threat if a species or habitat is damaged and has lost its resilience and is vulnerable to disturbance. Management capacity to respond to some of these changes may be limited.

High	Medium	Low	N/A	
				10.1 Volcanoes
				10.2 Earthquakes/Tsunamis
				10.3 Avalanches/ Landslides
				10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)

**11. Climate change and severe weather**

Threats from long-term climatic changes which may be linked to global warming and other severe climatic/weather events outside of the natural range of variation

High	Medium	Low	N/A	
				11.1 Habitat shifting and alteration
				11.2 Droughts
				11.3 Temperature extremes
				11.4 Storms and flooding

**12. Specific cultural and social threats**

High	Medium	Low	N/A	
				12.1 Loss of cultural links, traditional knowledge and/or management practices
				12.2 Natural deterioration of important cultural site values
				12.3 Destruction of cultural heritage buildings, gardens, sites etc

## Assessment Form

The new module on climate change impacts is presented at the end of this table (module number 31) in green.

Issue	Criteria	Score: Tick only one box per question		Comment / Explanation	Next steps
<b>1. Legal status</b> Does the protected area has legal status (or in the case of private reserves is covered by a covenant or similar)?  <i>Context</i>	The protected area is not gazetted/covenanted	0			
	There is agreement that the protected area should be gazetted/covenanted but the process has not yet begun	1			
	The protected area is in the process of being gazetted/covenanted but the process is still incomplete (includes sites designated under international conventions, such as Ramsar, or local/traditional law such as community conserved areas, which do not yet have national legal status or covenant)	2			
	The protected area has been formally gazetted/covenanted	3			
<b>2. Protected area regulations</b> Are appropriate regulations in place to control land use and activities (e.g. hunting)?  <i>Planning</i>	There are no regulations for controlling land use and activities in the protected area	0			
	Some regulations for controlling land use and activities in the protected area exist but these are major weaknesses	1			
	Regulations for controlling land use and activities in the protected area exist but there are some weaknesses or gaps	2			
	Regulations for controlling inappropriate land use and activities in the protected area exist and provide an excellent basis for management	3			
<b>3. Law enforcement</b> Can staff (i.e. those with responsibility for managing the site) enforce protected area rules well enough?  <i>Input</i>	The staff have no effective capacity/resources to enforce protected area legislation and regulations	0			
	There are major deficiencies in staff capacity/resources to enforce protected area legislation and regulations (e.g. lack of skills, no patrol budget, lack of institutional support)	1			
	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain	2			

	The staff have excellent capacity/resources to enforce protected area legislation and regulations	3			
<b>4. Protected area objectives</b>  Is management undertaken according to agreed objectives?  <i>Planning</i>	No firm objectives have been agreed for the protected area	0			
	The protected area has agreed objectives, but is not managed according to these objectives	1			
	The protected area has agreed objectives, but is only partially managed according to these objectives	2			
	The protected area has agreed objectives and is managed to meet these objectives	3			
<b>5. Protected area design</b>  Is the protected area the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?  <i>Planning</i>	Inadequacies in protected area design mean achieving the major objectives of the protected area is very difficult	0			
	Inadequacies in protected area design mean that achievement of major objectives is difficult but some mitigating actions are being taken (e.g. agreements with adjacent land owners for wildlife corridors or introduction of appropriate catchment management)	1			
	Protected area design is not significantly constraining achievement of objectives, but could be improved (e.g. with respect to larger scale ecological processes)	2			
	Protected area design helps achievement of objectives; it is appropriate for species and habitat conservation; and maintains ecological processes such as surface and groundwater flows at a catchment scale, natural disturbance patterns etc...	3			
<b>6. Protected area boundary demarcation</b>  Is the boundary known and demarcated?  <i>Process</i>	The boundary of the protected area is not known by the management authority or local residents/neighbouring land users	0			
	The boundary of the protected area is known by the management authority but is not known by local residents/neighbouring land users	1			
	The boundary of the protected area is known by both the management authority and local residents/neighbouring land users but is not appropriately demarcated	2			
	The boundary of the protected area is known by the management	3			

	authority and local residents/neighbouring land users and is appropriately demarcated				
<b>7. Management plan</b> Is there a management plan and is it being implemented? <i>Planning</i>	There is no management plan for the protected area	0			
	A management plan is being prepared or has been prepared but is not being implemented	1			
	A management plan exists but it is only being partially implemented because of funding constraints or other problems	2			
	A management plan exists and is being implemented	3			
<i>Additional points: Planning</i>					
7a. Planning process	The planning process allows adequate opportunity for key stakeholders to influence the management plan	+1			
7b. Planning process	There is an established schedule and process for periodic review and updating of the management plan	+1			
7c. Planning process	The results of monitoring, research and evaluation are routinely incorporated into planning	+1			
<b>8. Regular work plan</b> Is there a regular work plan and is it being implemented? <i>Planning/Outputs</i>	No regular work plan exists	0			
	A regular work plan exists but few of the activities are implemented	1			
	A regular work plan exists and many activities are implemented	2			
	A regular work plan exists and all activities are implemented	3			
<b>9. Resource inventory</b> Do you have enough information to manage the area? <i>Input</i>	There is little or no information available on the critical habitats, species and cultural values of the protected area	0			
	Information on the critical habitats, species, ecological processes and cultural values of the protected area is not sufficient to support planning and decision making	1			
	Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient for most key areas of planning and decision making	2			
	Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient to support all areas of planning and decision making	3			
<b>10. Protection systems</b>	Protection systems (patrols, permits etc) do not exist or are not effective in	0			

<p>Are systems in place to control access/resource use in the protected area?</p> <p><i>Process/Outcome</i></p>	controlling access/resource use				
	Protection systems are only partially effective in controlling access/resource use	1			
	Protection systems are moderately effective in controlling access/resource use	2			
	Protection systems are largely or wholly effective in controlling access/resource use	3			
<p><b>11. Research</b></p> <p>Is there a programme of management-orientated survey and research work?</p> <p><i>Process</i></p>	There is no survey or research work taking place in the protected area	0			
	There is a small amount of survey and research work but it is not directed towards the needs of protected area management	1			
	There is considerable survey and research work but it is not directed towards the needs of protected area management	2			
	There is a comprehensive, integrated programme of survey and research work, which is relevant to management needs	3			
<p><b>12. Resource management</b></p> <p>Is active resource management being undertaken?</p> <p><i>Process</i></p>	Active resource management is not being undertaken	0			
	Very few of the requirements for active management of critical habitats, species, ecological processes and cultural values are being implemented	1			
	Many of the requirements for active management of critical habitats, species, ecological processes and, cultural values are being implemented but some key issues are not being addressed	2			
	Requirements for active management of critical habitats, species, ecological processes and, cultural values are being substantially or fully implemented	3			
<p><b>13. Staff numbers</b></p> <p>Are there enough people employed to manage the protected area?</p> <p><i>Inputs</i></p>	There are no staff	0			
	Staff numbers are inadequate for critical management activities	1			
	Staff numbers are below optimum level for critical management activities	2			
	Staff numbers are adequate for the management needs of the protected area	3			
<p><b>14. Staff training</b></p>	Staff lack the skills needed for protected area management	0			

<p>Are staff adequately trained to fulfill management objectives?</p> <p><i>Inputs/Process</i></p>	Staff training and skills are low relative to the needs of the protected area	1			
	Staff training and skills are adequate, but could be further improved to fully achieve the objectives of management	2			
	Staff training and skills are aligned with the management needs of the protected area	3			
<p><b>15. Current budget</b></p> <p>Is the current budget sufficient?</p> <p><i>Inputs</i></p>	There is no budget for management of the protected area	0			
	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage	1			
	The available budget is acceptable but could be further improved to fully achieve effective management	2			
	The available budget is sufficient and meets the full management needs of the protected area	3			
<p><b>16. Security of budget</b></p> <p>Is the budget secure?</p> <p><i>Inputs</i></p>	There is no secure budget for the protected area and management is wholly reliant on outside or highly variable funding	0			
	There is very little secure budget and the protected area could not function adequately without outside funding	1			
	There is a reasonably secure core budget for regular operation of the protected area but many innovations and initiatives are reliant on outside funding	2			
	There is a secure budget for the protected area and its management needs	3			
<p><b>17. Management of budget</b></p> <p>Is the budget managed to meet critical management needs?</p> <p><i>Process</i></p>	Budget management is very poor and significantly undermines effectiveness (e.g. late release of budget in financial year)	0			
	Budget management is poor and constrains effectiveness	1			
	Budget management is adequate but could be improved	2			
	Budget management is excellent and meets management needs	3			
<p><b>18. Equipment</b></p> <p>Is equipment sufficient for management needs?</p> <p><i>Input</i></p>	There are little or no equipment and facilities for management needs	0			
	There are some equipment and facilities but these are inadequate for most management needs	1			

	There are equipment and facilities, but still some gaps that constrain management	2			
	There are adequate equipment and facilities	3			
<b>19. Maintenance of equipment</b>	There is little or no maintenance of equipment and facilities	0			
Is equipment adequately maintained?	There is some <i>ad hoc</i> maintenance of equipment and facilities	1			
<i>Process</i>	There is basic maintenance of equipment and facilities	2			
	Equipment and facilities are well maintained	3			
<b>20. Education and awareness</b>	There is no education and awareness programme	0			
Is there a planned education programme linked to the objectives and needs?	There is a limited and <i>ad hoc</i> education and awareness programme	1			
<i>Process</i>	There is an education and awareness programme but it only partly meets needs and could be improved	2			
	There is an appropriate and fully implemented education and awareness programme	3			
<b>21. Planning for land and water use</b>	Adjacent land and water use planning does not take into account the needs of the protected area and activities/policies are detrimental to the survival of the area	0			
Does land and water use planning recognise the protected area and aid the achievement of objectives?	Adjacent land and water use planning does not takes into account the long term needs of the protected area, but activities are not detrimental the area	1			
<i>Planning</i>	Adjacent land and water use planning partially takes into account the long term needs of the protected area	2			
	Adjacent land and water use planning fully takes into account the long term needs of the protected area	3			
<i>Additional points: Land and water planning</i>					
21a: Land and water planning for habitat conservation	Planning and management in the catchment or landscape containing the protected area incorporates provision for adequate environmental conditions (e.g. volume, quality and timing of water flow, air pollution levels etc) to sustain relevant habitats.	+1			
21b: Land and water planning for connectivity	Management of corridors linking the protected area provides for wildlife passage to key habitats outside the protected area (e.g. to allow	+1			



	migratory fish to travel between freshwater spawning sites and the sea, or to allow animal migration).				
21c: Land and water planning for ecosystem services & species conservation	"Planning addresses ecosystem-specific needs and/or the needs of particular species of concern at an ecosystem scale (e.g. volume, quality and timing of freshwater flow to sustain particular species, fire management to maintain savannah habitats etc.)"	+1			
<b>22. State and commercial neighbours</b>  Is there co-operation with adjacent land and water users?  <i>Process</i>	There is no contact between managers and neighbouring official or corporate land and water users	0			
	There is contact between managers and neighbouring official or corporate land and water users but little or no cooperation	1			
	There is contact between managers and neighbouring official or corporate land and water users, but only some co-operation	2			
	There is regular contact between managers and neighbouring official or corporate land and water users, and substantial co-operation on management	3			
<b>23. Indigenous people</b>  Do indigenous and traditional peoples resident or regularly using the protected area have input to management decisions?  <i>Process</i>	Indigenous and traditional peoples have no input into decisions relating to the management of the protected area	0			
	Indigenous and traditional peoples have some input into discussions relating to management but no direct role in management	1			
	Indigenous and traditional peoples directly contribute to some relevant decisions relating to management but their involvement could be improved	2			
	Indigenous and traditional peoples directly participate in all relevant decisions relating to management, e.g. co-management	3			
<b>24. Local communities</b>  Do local communities resident or near the protected area have input to management decisions?  <i>Process</i>	Local communities have no input into decisions relating to the management of the protected area	0			
	Local communities have some input into discussions relating to management but no direct role in management	1			
	Local communities directly contribute to some relevant decisions relating to management but their involvement could be improved	2			
	Local communities directly participate in all relevant decisions	3			

	relating to management, e.g. co-management				
<i>Additional points Local communities/indigenous people:</i>					
24 a. Impact on communities	There is open communication and trust between local and/or indigenous people, stakeholders and protected area managers	+1			
24b. Impact on communities	Programmes to enhance community welfare, while conserving protected area resources, are being implemented	+1			
24c. Impact on communities	Local and/or indigenous people actively support the protected area	+1			
<b>25. Economic benefit</b> Is the protected area providing economic benefits to local communities, e.g. income, employment, payment for environmental services? <i>Outcomes</i>	The protected area does not deliver any economic benefits to local communities	0			
	Potential economic benefits are recognised and plans to realise these are being developed	1			
	There is some flow of economic benefits to local communities	2			
	There is a major flow of economic benefits to local communities from activities associated with the protected area	3			
<b>26. Monitoring and evaluation</b> Are management activities monitored against performance? <i>Planning / Process</i>	There is no monitoring and evaluation in the protected area	0			
	There is some <i>ad hoc</i> monitoring and evaluation, but no overall strategy and/or no regular collection of results	1			
	There is an agreed and implemented monitoring and evaluation system but results do not feed back into management	2			
	A good monitoring and evaluation system exists, is well implemented and used in adaptive management	3			
<b>27. Visitor facilities</b> Are visitor facilities adequate? <i>Outputs</i>	There are no visitor facilities and services despite an identified need	0			
	Visitor facilities and services are inappropriate for current levels of visitation	1			
	Visitor facilities and services are adequate for current levels of visitation but could be improved	2			
	Visitor facilities and services are excellent for current levels of visitation	3			
<b>28. Commercial tourism operators</b> Do commercial tour operators contribute to	There is little or no contact between managers and tourism operators using the protected area	0			
	There is contact between managers	1			

protected area management? <i>Process</i>	and tourism operators but this is largely confined to administrative or regulatory matters				
	There is limited co-operation between managers and tourism operators to enhance visitor experiences and maintain protected area values	2			
	There is good co-operation between managers and tourism operators to enhance visitor experiences, and maintain protected area values	3			
<b>29. Fees</b> If fees (i.e. entry fees or fines) are applied, do they help protected area management? <i>Inputs/Process</i>	Although fees are theoretically applied, they are not collected	0			
	Fees are collected, but make no contribution to the protected area or its environs	1			
	Fees are collected, and make some contribution to the protected area and its environs	2			
	Fees are collected and make a substantial contribution to the protected area and its environs	3			
<b>30. Condition of values</b> What is the condition of the important values of the protected area as compared to when it was first designated? <i>Outcomes</i>	Many important biodiversity, ecological or cultural values are being severely degraded	0			
	Some biodiversity, ecological or cultural values are being severely degraded	1			
	Some biodiversity, ecological and cultural values are being partially degraded but the most important values have not been significantly impacted	2			
	Biodiversity, ecological and cultural values are predominantly intact	3			
<i>Additional Points: Condition of values:</i>					
30a: Condition of values	The assessment of the condition of values is based on research and/or monitoring	+1			
30b: Condition of values	Specific management programmes are being implemented to address threats to biodiversity, ecological and cultural values	+1			
30c: Condition of values	Activities to maintain key biodiversity, ecological and cultural values are a routine part of park management	+1			
<b>31. Climate change</b> 31a: Climate change Has the protected area been designed to take into account the likely effects of	Climate change was not taken into account during PA design, and no subsequent consideration has been given to address its impact	0			
	Climate change was not taken into account during PA design, some	1			

climate change?	planning, but no action has been taken to address its impact				
	Climate change was not taken into account during PA design, but planning and some action to address its impact has taken place	2			
	Climate change was taken into account during PA design or in subsequent planning for impacts and has resulted in changes to the PA design	3			
31b: Climate change Is the protected area being consciously managed to adapt to climate change?	There have been no efforts to consider adaptation to climate change in management	0			
	Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans	1			
	Detailed plans have been drawn up about how to adapt management to predicted climate change, but these have yet to be translated into active management.	2			
	Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented	3			
<b>TOTAL SCORE</b>					