

A Framework for Developing and Implementing Management Plans for South African National Parks

1. INTRODUCTION
- 1.1 Objectives and structure of this manual
2. POLICY CONTEXT: SANPARKS' MANDATE AND VALUES
- 2.1 Biodiversity and biodiversity conservation
- 2.2 SANParks biodiversity conservation values
- 2.3 SANParks' organisational structure and focus
- 2.4 Core components of Protected Area management
 - Conservation activities
 - Sustainable tourism
 - Building co-operation
 - Effective park operations
 - Integrative support services
- 2.5 Legislative requirements for the contents of Protected Area Management Plans
3. APPROACHES TO ECOSYSTEM MANAGEMENT
- 3.1 Strategic and value-based approaches to ecosystem management
- 3.2 Adaptive management
- 3.3 Adaptive Management in South Africa: Strategic Adaptive Management
 - Bounding and defending the Desired State: Setting Thresholds of Potential Concern (TPCs)
- 3.4 Systematic Conservation Planning
4. BUILDING COOPERATION: PRINCIPLES OF PARTICIPATORY DECISION-MAKING
 - Focus on the future
 - Avoid compromise; seek consensus
 - Respect the rules
 - Level the playing field for mutual learning
 - Lay a firm foundation for long-term cooperation
5. OVERVIEW OF SANPARKS POLICY AND PLANNING CYCLES
- 5.1 The park management planning and approval process
6. A STEP-BY-STEP PROTECTED AREA MANAGEMENT PLANNING PROCESS
- 6.1 Developing a vision for a desired future state and translating it into achievable objectives

Step 1: Reach consensus on the vision and operating principles

Step 2: Provide the context for setting the objectives

Step 3: Document the vital attributes of the system to be managed

Step 4: Evaluate and consolidate the attributes

Step 5: Record all the determinants of, and constraints and threats to, the vital attributes

Step 6: Formulate the high level objectives

Step 7: Prioritize the high level objectives

Step 8: Set lower level objectives

Step 9: Setting TPCs as a decision support system

6.2 A spatial representation of the desired state

Park Zoning Plan based on the Conservation Development Framework

Park expansion planning

Objectives for the 'Park interface zone'

6.3 Policy and planning for different stages of Protected Area development

6.4 Review and reflection

Measures of success: characteristics of a good plan

7. FORMAT FOR A NATIONAL PARK MANAGEMENT PLAN

REFERENCES

APPENDIX 1: Marakele National Park management plan

LIST OF FIGURES

- Figure 2.1: Noss Components of biodiversity
- Figure 2.2: SANParks institutional framework
- Figure 2.3: Core components of protected area management
- Figure 3.1: Strategic adaptive management (SAM) process
- Figure 3.2: TPCs as boundaries of the desired state
- Figure 3.3: Consensus versus compromise
- Figure 5.1: Overview of SANParks policy and planning cycles at the corporate and park level
- Figure 5.2: The park management planning and approval process
- Figure 5.3: Stakeholder participation in the management planning process
- Figure 6.1: Process of developing a desired future state represented by an Objectives Hierarchy
- Figure 6.2: Hierarchy of objectives
- Figure 6.3: An adaptive management decision support system using TPCs
- Figure 6.4: The SAM cycle for parks at different stages of development
- Figure 6.5: Different stages of protected area development
- Figure 6.6: An example of an adaptive review process for protected area management

LIST OF TABLES

- Table 6.1: An example of a matrix used in the initial evaluation of the strengths (O - complementary, X - conflicting, ? - unknown).
- Table 6.2: An example of a section of the matrix used in assigning determinants, threats and constraints to the particular vital attributes of Nylsvley Nature Reserve.

LIST OF BOXES

- BOX 1: The universal characteristics of strategic management (from Meffe *et al.*, 2002)
- BOX 2: Principles for the Practice of Adaptive Management (from Salafsky, Margoluis & Redford, 2001)
- BOX 3: Definitions for terms used in SANParks participation processes
- BOX 4: Guidelines for administering the planning process
- BOX 5: Outline of the contents and layout of a park management plan

GLOSSARY AND ACRONYMS

BA	National Environment Management: Biodiversity Act (No. 10 of 2004)
BSC	Balanced Score Card
Biodiversity	Biodiversity refers to the variety of life and its processes: this encompasses compositional (what is there), structural (how it is distributed in space and time) and functional (what it does) elements of ecosystems, each being manifest at multiple levels of interconnected organisation ranging from genes to species, communities and ecosystems and landscapes.
Constraints	Constraints are V-STEPP factors within an organisation that inhibit the determinant or vital attribute itself, or inhibit the pursuit of an objective or the vision itself.
Determinants	Those factors or processes that determine, strengthen or ensure persistence of the vital attributes
CDF	Conservation Development Framework
CPF	Coordinated Policy Framework
DEAT	Department of Environmental Affairs and Tourism
Desired state	The park ecosystem desired state is based on a collectively developed vision of a set of desired future conditions (that are necessarily varying)
Hierarchy of objectives	An Objectives Hierarchy begins with a "vision" at the top of the hierarchy. This vision is progressively disaggregated through a series of "objectives" of increasing focus. The finest level of the hierarchy is defined by achievable "goals" for tourism, building cooperation, biodiversity conservation and operations.
Initiatives	Balanced scorecard term - actions that must be undertaken in order to achieve the target.
Measures	Balanced scorecard term - variables used to measure and track strategic success.
NEMA	National Environment Management Act (No. 107 of 1998)
NEM:PAA	National Environment Management: Protected Areas Act (No. 57 of 2003)
NEM:BA	National Environment Management: Biodiversity Act (No. 10 of 2004)
Objective	Objectives are qualitative articulations of the values defined in the vision, principles, context and vital attributes, which form a foundation for developing quantitative, operational outcomes. An objective is more precise than the vision but it is not necessarily achievable in the short term. Consequently the objective might change before it is fully achieved if improved understanding of the system being managed leads to better, more achievable or more appropriate objectives. Objectives support achievement of the higher level vision by expanding upon the key elements of the vision and providing a broader, more rigorous information base for setting outcomes.

Outputs and Outcomes	When setting goals and reviewing performance it is important to make a distinction between outputs and outcomes. A report on how to manage biodiversity would be an output and a specific change in some aspect of biodiversity in response to a management action would be an outcome.
PAA	National Environmental Management: Protected Areas Act (No. 57 of 2003)
SAM	Strategic Adaptive Management
SANBI	South African National Biodiversity Institute
SCP	Systematic Conservation Planning
Target	Balanced scorecard term, describes the expected level of performance or improvement required in the future.
Threats	Threats are factors outside an organisation which inhibit the determinant or strength itself, or inhibit the pursuit of the vision.
TPC	Threshold of Potential Concern
Values	Values are the principles we use to evaluate the consequences of actions or inaction, to propose and chose between alternative options and decisions. Values may be held by individuals, organisations or even society. A group's values must reflect the values of the individuals in that group.
Vision	A broad philosophical statement of intent. A vision is durable beyond changes in personnel and organizational structure. Synonymous with a "mission statement" and "strategic objective" (Keeney, 1992). In this scheme vision is synonymous with mission. Values should therefore be the driving force behind our decisions but they are often not clear enough for us to recognise them. Conservation is a very value laden endeavour so it is essential for conservation managers and organisation to be very explicit about the values that drive their decisions. Conservationists have to carefully balance their own values against those of society because in the long run the decisions they make should be compatible with societal values.
Vital attributes	Vital attributes are the most important characteristics/properties of the system to be managed - which make the system unique and which are valued by various stakeholders.
VSTEEP	Values – Social, Technological Ecological, Economic, and Political.

1. INTRODUCTION

Effective custodianship of South Africa's biodiversity heritage is the primary mandate of South African National Parks (SANParks) and the chief purpose of the protected areas it maintains. The McKinsey report of 2003 highlighted SANParks' lack of a formal biodiversity policy, and the absence of management plans for most national parks. In addition, it found poor cohesion across parks and directorates and a lack of co-operative governance and public participation policies or processes. The report concluded that there was a need for three operational emphases within SANParks: biodiversity custodianship, tourism development and constituency building.

Recent policy and legislation has reiterated these priorities. The Biodiversity Act (No. 10 of 2004) calls for integrated and cooperative governance of biodiversity conservation in South Africa. The Protected Areas Act (No. 57 of 2003) stipulates a comprehensive and consultative planning process for the management of National Parks and other protected areas.

In response to these imperatives, SANParks embarked on an initiative to develop and implement a management planning framework, which would meet the requirements of new legislation in the outcome and process of protected area management. This framework was required to "distil consensus on an integrated strategic direction for biodiversity custodianship that is in synergy with other core business of SANParks, and provides the principles needed to defend actions against outside pressures, needs and aspirations."

Development of this framework followed a consultative process, using workshops and eliciting the inputs of a variety of participants across SANParks. This process sought to rationalize and integrate existing policy that was considered to be applicable to management planning under the new legislation.

This manual presents the outcome of this initiative, in the form of a framework to initiate and guide the development of Protected Area management plans. The framework (termed the Protected Area Management Planning Framework) is now the overarching policy and planning tool for directing Protected Area management.

Other tools developed or used by SANParks which interface with this framework are as follows:

Coordinated Policy Framework (CPF):

The NEM: PAA requires a policy framework to give guidelines to the management of all National Parks. To fulfil this requirement SANParks has developed the CPF (SANParks, 2006) which outlines overarching policy standpoints applicable to all national parks under its custodianship.

Balanced Score Card (BSC):

The Balanced Scorecard translates the vision and strategy of SANParks into objectives and performance measures that can gauge the success of SANParks in meeting their overall aims. This is evaluated from 4 perspectives:

- Financial: How do we add value for stakeholders while controlling costs?
- Customer: Who do we define as our customers/stakeholders? How do we create value for them?
- Internal Processes: At which business processes must we excel if we are to satisfy customers?
- Learning and growth: How do we enable ourselves to grow and change, while meeting ongoing demands?

Internal processes include: Conservation, Tourism, Constituency Building, Corporate Governance.

The four perspectives are described in terms of:

- Objectives
- Measures
- Targets
- Initiatives

The BSC is a tool used by SANParks to evaluate/audit whether the strategy outcomes are on track. The Balanced Score Card is based on the organisational objectives (classified into Financial, Customer, Internal Processes, Learning & Growth). Biodiversity custodianship goals for individual national parks form part of the BSC for Internal Processes. This process is not discussed in detail in this document as it is still under development, and needs to be aligned more closely with the adaptive management strategy followed in the management plans.

Systematic conservation planning (SCP):

SCP is an approach to protected area planning that seeks to ensure that the goals of representativeness and persistence of biodiversity are met through the location, expansion and zoning of parks. SCP is used within the SANParks management planning process to define spatially explicit and quantified objectives for the desired state of parks and their surrounding areas, to plan park expansion and to design Conservation Development Frameworks for parks.

1.1 Objectives and structure of this manual

This manual is aimed at conservation scientists, managers and stakeholders who are interested in the management of South African National Parks. It has particular significance to SANParks employees, at both the corporate and protected area level, who need to understand, support and/or apply the management planning process.

However, protected area management is required to be a consultative process and involves a broad range of both government and societal stakeholders, representing the interests of conservation, tourism, neighbouring communities and local economic development. It is hoped that this document will enable such stakeholders to understand their roles, responsibilities and opportunities to participate in the protected area management process.

This manual includes an overview of the contextual and theoretical basis for management planning adopted by SANParks, as well as detailed guidelines to assist those undertaking planning processes in individual National Parks. These guidelines range from the technical aspects of setting goals for ecosystem management, to approaches to engaging stakeholders and integrating their inputs in the planning process.

The manual is structured as follows:

Chapter 2 introduces the higher level policy context informing the content of management plans, and explores the concept of biodiversity conservation and other core components of SANParks' mandate.

Chapter 3 outlines the theoretical concepts underpinning the chosen approach to protected area policy, planning and management - in particular, Adaptive Resource Management, Strategic Adaptive Management.

Chapter 4 provides principles for participatory decision-making within the Strategic Adaptive Management process.

Chapter 5 provides an overview of the SANParks policy and planning cycles, including the interface between corporate and park level operations.

Chapter 6 presents detailed guidelines to achieve the outputs of the sequential phases of the protected area planning cycle.

Chapter 7 sets out the format to be used for all national park management plans.

A glossary and index are provided, and further explanation of concepts and terminology can be found in text boxes located in various chapters.

2. POLICY CONTEXT: SANPARKS' MANDATE AND VALUES

Together, national legislation and SANParks' mandate, corporate and conservation values form the overall policy context within which protected area management must take place. This context sets the boundaries of the management planning process and content.

According to the Public Finance Management Act (No. 1 of 1999 as amended by Act 29 of 1999), SANParks is a Schedule 3(a) "public entity" that functions under the ambit of the National Environmental Management: Protected Areas Act (No. 57 of 2003). The core mandate of SANParks is the conservation of South Africa's biodiversity, landscapes and associated heritage assets, through its system of national parks. SANParks also promotes and manages nature-based tourism and delivers both conservation management and tourism services through a people-centred approach.

The organisation's operations are guided by its vision statement and mission statement:

- **Vision:** "National Parks will be the pride and joy of all South Africans."
- **Mission:** "To acquire and manage a system of national parks that represents the indigenous wildlife, vegetation, landscapes and associated cultural assets of South Africa, for the joy and benefit of the nation."
- **Transformation mission:** "To ensure effective transformation both within SANParks and the broader society and economy, through the implementation of broad-based Black Economic Empowerment in support of the Constitution of South Africa."

SANParks' mandate is therefore multi-objective (and these objectives may sometimes be in conflict) but it clearly prioritises 'biodiversity custodianship' as the primary purpose. The requirements of biodiversity conservation may thus not be put at risk through the activities of other, secondary, objectives. A comprehensive understanding of the concept of biodiversity and biodiversity conservation is thus crucial to effectively planning and prioritising protected area management.

2.1 Biodiversity and biodiversity conservation

Biodiversity is a complex concept that is often misunderstood and thus potentially misused or abused. Biodiversity is *not* simply the number of species in a particular area as it also incorporates habitat.

SANParks uses the now widely accepted definition of biodiversity first published by Reid Noss (1990). Biodiversity refers to the variety of life and its processes: this encompasses compositional (what is there), structural (how it is distributed in space and time) and functional (what it does) elements of ecosystems, each being manifest at multiple levels of interconnected organisation ranging from genes to species, communities and ecosystems and landscapes.

Similarly, the Biodiversity Act defines biological diversity or biodiversity as "the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems."

For example, SANParks is involved in countering threats to:

- Compositional biodiversity: Controlling alien plants which invade national parks and decrease the species richness of invaded areas.
- Structural biodiversity: In KNP the number of trees of various height classes is monitored to detect long-term changes over time.

- Functional biodiversity: Sedimentation of rivers in KNP reduces the diversity of habitats for aquatic organisms and riparian tree species.

And at the level of:

- Genes: Elephants from Kruger have been introduced to Addo Elephant National Park to increase the genetic diversity of the Addo elephant population.
- Species: Species that are known to have occurred in an area but are now absent are reintroduced, e.g. the reintroduction of Black Rhino to Karoo National Park.
- Landscapes: The conservation status of vegetation types in South Africa was used to delineate the low and high elephant impact zones of the Kruger National Park.

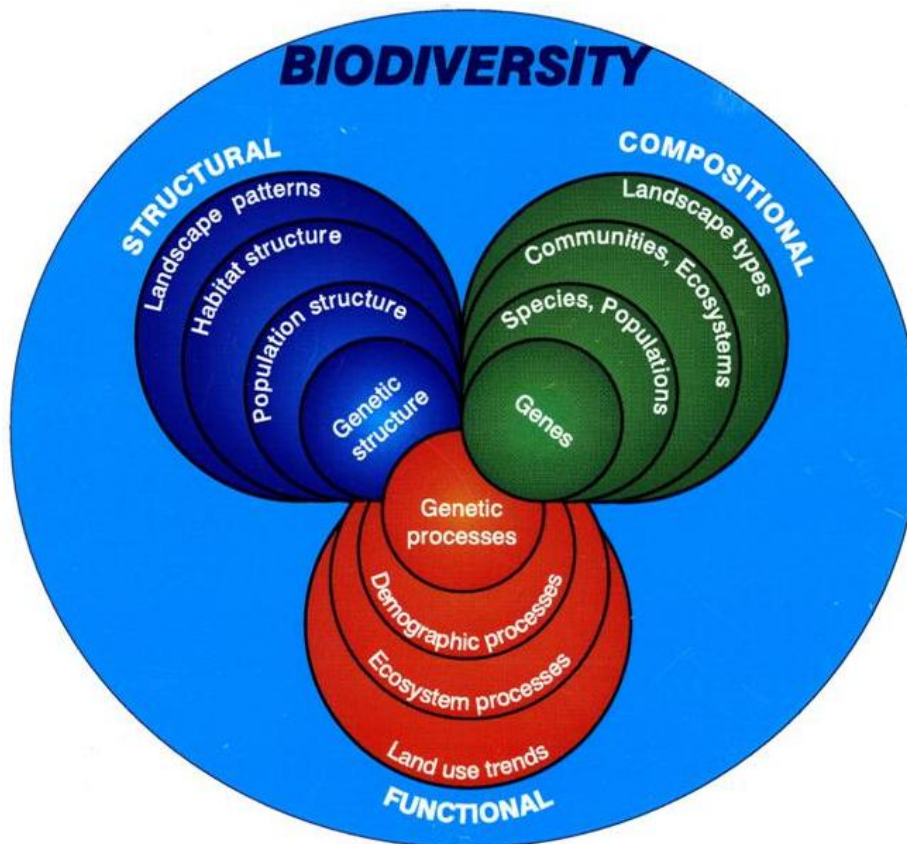


Figure 2.1: Noss components of biodiversity

2.2 SANParks biodiversity conservation values

Conserving biodiversity in its fullest sense is thus a complex endeavour, and provides the focus for an extensive body of local and international theory and research. Approaches to conserving biodiversity and managing and using ecosystems are informed not only by science, but by societal and organisational values, ethics, perceptions and preferences for the management of risk. Conservation management often involves making trade-offs between conflicting objectives under a variety of operational constraints.

SANParks' approach to fulfilling its mandate for biodiversity custodianship is guided by a set of 'conservation values'. These constitute deeply held beliefs which *guide the formation of principles for decision-making and action*.

As an underlying premise, it was recognised that:

- SANParks, as custodian, should take the lead in formulating values to be upheld in national parks.
- The values formulated by SANParks are viewed as proposals that should be tested against societal values. They are expected to evolve over time.

It is recognized that values can to an extent be separated from principles. Thus important principles that follow from the values are identified below.

The following value statements, and the principles derived from these, define the decision space for all SANParks activities that involve, or influence, biodiversity custodianship.

The conservation values commit us to:

- Respect the complexity, as well as the richness and diversity of the socio-ecological systems making up each national park and the wider landscape and context. Respect the interdependency of the fundamental drivers of landscape diversity, the associated biotic and landscape diversity, and the aesthetic, cultural, educational and spiritual attributes^[1]. Leverage all these for creative and useful learning.
- Strive to maintain natural processes in ecosystems, along with the uniqueness, authenticity and worth of cultural heritage, so that these systems and their elements can be resilient and hence persist.
- Manage with humility the systems under our custodianship, recognising and influencing the wider socio-ecological context in which we are embedded.
- Strive to maintain a healthy flow of ecosystem and cultural goods and services (specifically preserving cultural artefacts), and to make these available, also through access to national parks, thereby promoting enjoyment, appreciation and other benefits for people.
- When necessary, intervene in a responsible and sustainable manner, complementing natural processes as far as possible, using only the level of interference needed to achieve our mandate.
- Do all the above in such a way as to preserve all options for future generations, while also recognizing that systems change over time.
- Finally, acknowledge that conversion of some natural and cultural capital has to take place for the purpose of sustaining our mandate, but that this should never erode the core values above.

Overall principles, as ways of thinking:

- Biodiversity forms an important basis of the ecosystem services that sustain the benefits that humans derive from conservation.
- The Web of Life^[2] is seen as a fundamental notion, evoked in all thought processes.
- People are seen as part of ecosystems, though the ways in which they interact with ecosystems may vary widely in different parks and circumstances.
- Thoughtful experimentation is seen as essential, to promote learning.
- Multiple ways of knowing and acquiring knowledge are acknowledged, appreciated and integrated.
- We aim to interpret the meaning of cultural, biodiversity and landscape assets through careful documented recognition of their significance, including their tangible and intangible value, and full natural and cultural context, by fostering productive

^[1] **Biodiversity** (explained as biotic and landscape diversity above) includes structure, function and composition of biotic and all underlying abiotic elements. **Cultural Heritage** includes moveable, immovable, tangible and intangible assets, even living arts.

^[2] The term **Web of Life** is used in the sense given to it in Convention on Biological Diversity, which states that "Biodiversity.....forms the web of life of which we are an integral part and upon which we so fully depend."

involvement of all stakeholders and associated communities in the development and implementation of interpretative values.

- We measure our performance in all that we are mandated to do.

Principles underlying social and regional linkages:

- We are responsive to the impact of other value systems on biodiversity such as cultural and tourism values. In this context we use the acronym V-STEEP (Values – Social, Technological Ecological, Economic, and Political) to encompass the range of value systems that together inform an acceptable vision of the future.
- We are concerned, and responsible, for the implications of our conservation management decisions/actions, within and without a park/SANParks, for other (V-STEEP) systems at local, regional and global levels.
- Co-operative governance is seen as a central guiding principle, and collaborative methodologies are thus seen as fundamental.
- We manage in a bio-regional context to promote connectivity across all landscape elements.
- The acquisition and restoration of land are guided by the values and principles set out in this Policy Framework.
- We strive for continuous, and co-operative, improvement of public perception of our rationale for conservation practice and beneficiation of biodiversity/ecosystem services.
- Our understanding and management must reflect the social imperatives (e.g. transformation, equity, efficiency, empowerment, growth) of an emerging African democracy.
- Whenever feasible and justifiable, we strive to implement the option which best serves local community needs.

Principles of biodiversity planning and implementation:

- We aim at the persistent achievement of biodiversity representivity and complementarity to promote resilience and ensure ecosystem integrity.
- We treat all biodiversity elements (all species, ecosystems, processes, structural components, etc.) with equity.
- We ensure representivity while accounting for uniqueness.
- Where human-induced influences warrant, interference, even severe interference, is acceptable for achieving our biodiversity custodianship mandate.
- *A laissez-faire* approach may be used but it will be a conscious and informed choice.

Principle of integration:

- We strive to maintain a balance between the management of biodiversity and cultural heritage.

In addition, SANParks is committed to adhere to the internationally accepted five principles of good governance, identified by the Vth World Parks Congress (Graham *et al.*, 2003).

- Legitimacy and voice: participation and consensus orientation.
- Direction: strategic vision; including human development and historical, cultural and social complexities.
- Direction: strategic vision; including human development and historical, cultural and social complexities.
- Performance: responsiveness of institutions and processes to stakeholders, effectiveness and efficiency.
- Accountability: accountability to the public and to institutional stakeholders, transparency.
- Fairness: equity, rule of law.

2.3 SANParks' organisational structure and focus

At the broadest institutional level, SANParks aims to make a specific contribution to the conservation of national biodiversity and heritage assets, and to contribute positively to the country's Gross Domestic Product. SANParks' business operations are founded on three pillars:

- **Biodiversity conservation:**
The primary mandate of SANParks is the conservation of South Africa's biodiversity, landscapes and associated heritage assets through a system of national parks.
- **Nature-based tourism:**
The organisation has a significant role in the promotion of South Africa's nature-based tourism, or ecotourism business, targeted at both international and domestic tourism markets. The eco-tourism pillar of the business architecture provides for the organisation's self-generated revenues from commercial operations that is necessary to supplement government seed funding of conservation management. A significant element of the ecotourism pillar is the Commercialisation Strategy (which through the implementation of Public Private Partnerships) has as its objective reducing the cost of delivery, improving service levels by focusing on core business and leveraging private capital and expertise as well as the objective of expansion of tourism products and the generation of additional revenue for the funding of conservation and constituency building.
- **Constituency building towards a people-centred conservation and tourism mandate:**
SANParks is required to build constituencies at international, national and local levels, in support of the conservation of the natural and cultural heritage of South Africa. It has to ensure that a broad base of South Africans participate and get involved in biodiversity initiatives, and further that all its operations have a synergistic existence with neighbouring or surrounding communities for their socio-economic benefit.

In addition to the three core pillars of Conservation, Tourism and Constituency building, SANParks needs to deliver the generic **corporate support functions** of Finance, Human Resources, Corporate Communications, Corporate Support Services (including Information and Communications Technology as well as GIS), Environmental Management and Legal Services.

Finally, the **operational component** of SANParks business is delivered through the maintenance and management of individual national parks.

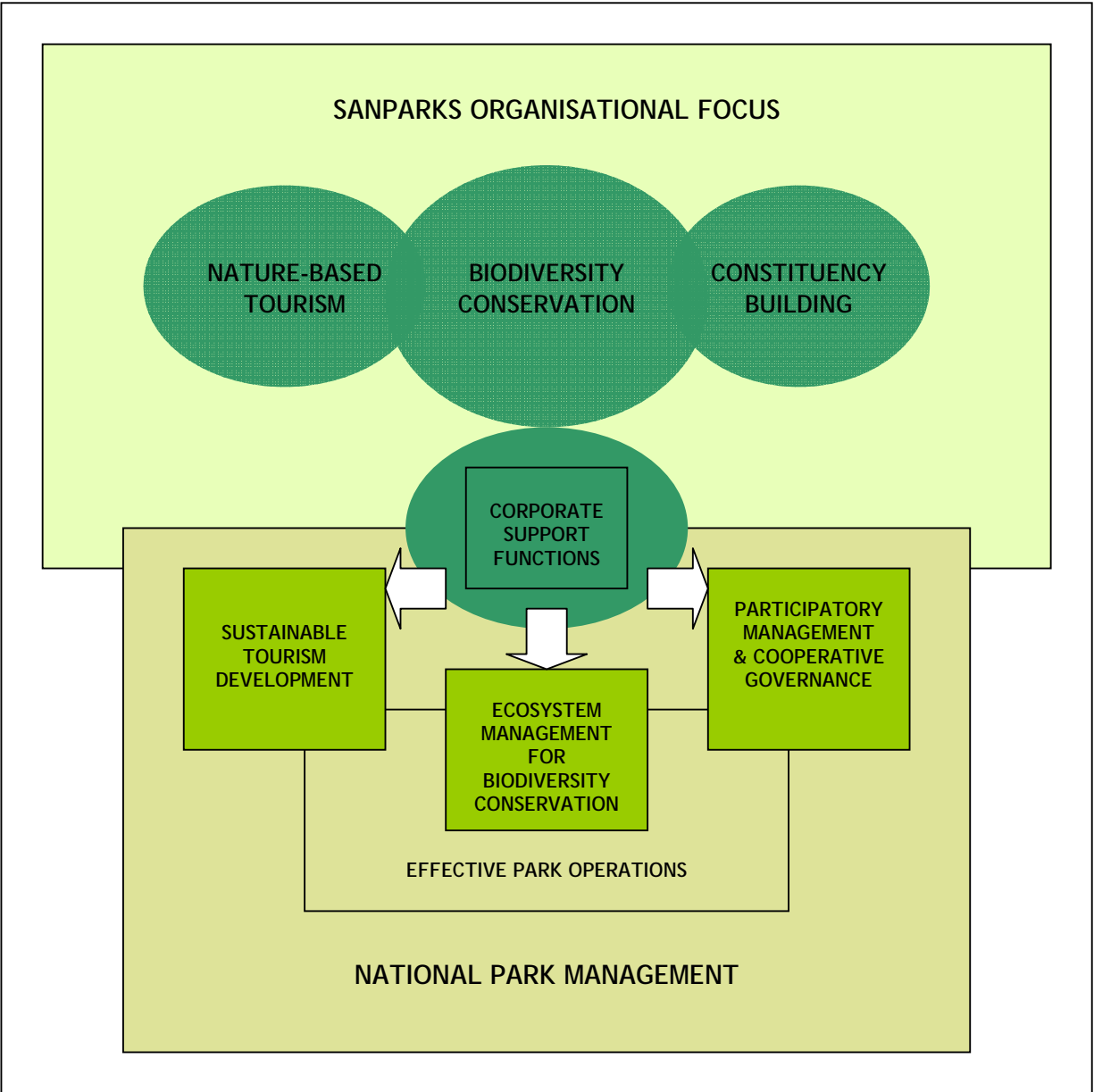


Figure 2.2: SANParks institutional framework

The interface between corporate and protected area activities is depicted in Figure 2.2. Corporate foci (top half of diagram) give priorities to protected area management and corporate activities provide support to operational activities of the protected area managers (bottom half of diagram). Each park has to operationalise the institutional focus through developing sustainable tourism, managing ecosystems to conserve biodiversity, and engaging stakeholders, both inside and outside government, in planning and management. The details of these core components of protected area management are discussed in the next section.

The SANParks' Value Proposition has been translated into the key Balanced Score Card strategic objectives. These strategic objectives are categorised into the four focus areas of the BSC, namely:

- Financial
- Customers and stakeholders
- Internal processes
- Learning and growth

2.4 Core components of Protected Area management

Five sets of management activities, or core operational components, can be delineated for protected area managers (Figure 2.3). Each of these components requires a clear set of objectives and will form a broad performance area against which national park management will be reviewed. This compartmentalising of activities and objectives is intended to help managers better focus their work and performance reporting.

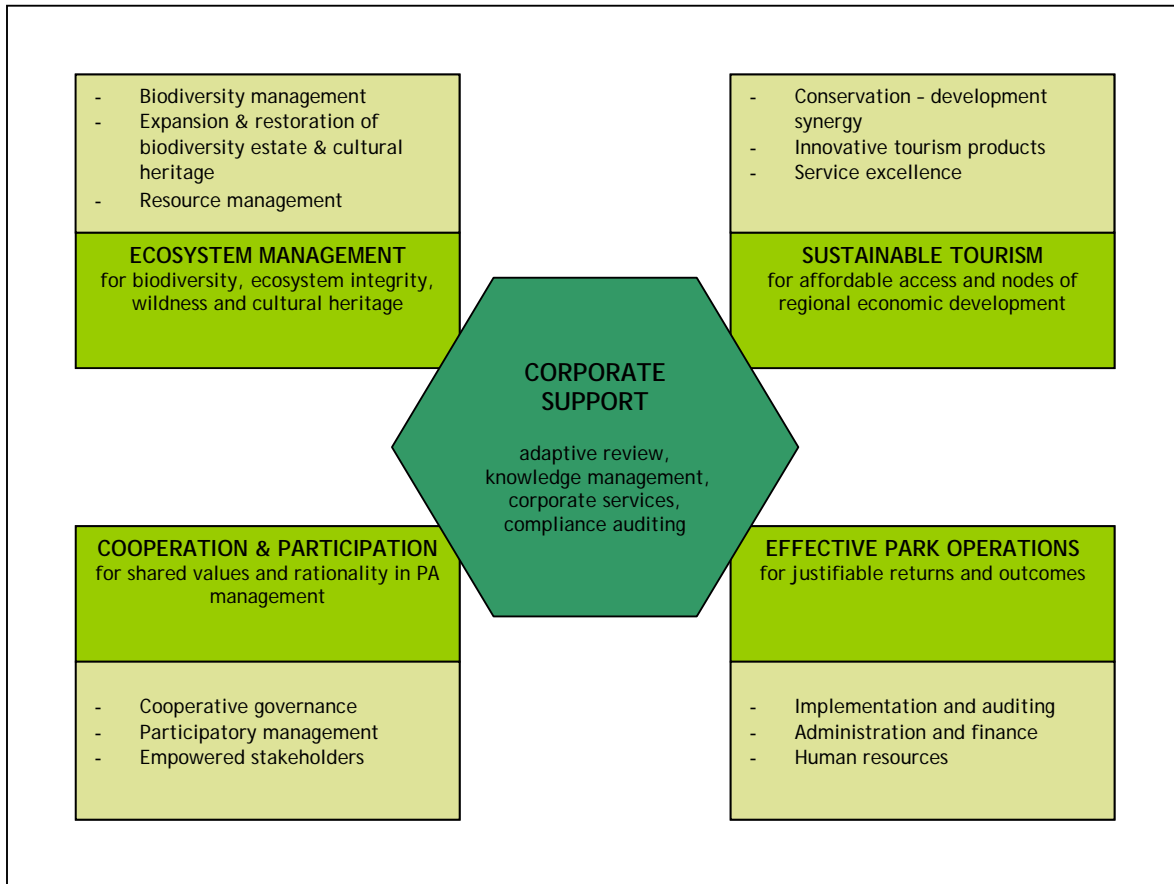


Figure 2.3: Core components of protected area management

The five sets of activities are:

- Ecosystem management aimed at conservation of biodiversity and cultural heritage.
- Sustainable Tourism in synergy with conservation and socio-economic development.
- Building co-operation with stakeholders through cooperative governance and participatory management.
- Managing day to day operations effectively and within budget.
- Providing, or using, support services to ensure accountable and cost effective management that meets corporate values, principles and vision.

These components and activities are interdependent. Ecosystem management must take place in a co-operative manner that includes, and empowers all stakeholders. At the same time

biodiversity provides the basis for tourism that must be sustainable within those biodiversity constraints.

The content of the boxes in Figure 2.3 is not comprehensive or prescriptive, and only gives a general list of the applicable management activities and tools. Management plans and activities must be customised to meet the different emphases in individual national parks.

Conservation activities

The fundamental purpose of a national park is to conserve certain national public assets. These can be described as biodiversity, the integrity of the protected ecosystems, a defined character of wildness and any associated cultural resources and artefacts. There are three sets of conservation activities:

The direct management for specific biodiversity outcomes:

There must be clear statements of the state and nature of biodiversity that management is aiming to achieve in a national park and how these will be achieved. The SANParks biodiversity values must guide management decision making. All other activities in, and objectives for, a national park will have to be traded off against these values and objectives.

Expanding and, where necessary, restoring the biodiversity estate and cultural resources:

There is a national drive to increase the area under formal conservation protection. Each organisation with a mandate to manage protected areas has a strategy to increase the area conserved and to restore degraded systems to meet the biodiversity objectives. Cultural heritage associated with that estate will also be restored.

Management of natural resources within the national park:

A national park is a storage house of ecosystem goods and services, and cultural resources. These may be sustainably utilised as long as this use does not compromise the biodiversity mandate for that national park. A policy and strategy for this use must be developed at the park level according to the corporate values. The policy must consider *inter alia* issues of game capture, translocation and sales, culling, alien biota control, and management of cultural resources associated with the biodiversity estate.

Sustainable tourism

Every protected area is required to develop policy and manage for sustainable tourism which, in turn, needs to promote affordable access to citizens, contribute to regional and national economic development and be in synergy with biodiversity conservation objectives. Important tools for achieving this synergy include Conservation Development Frameworks (CDF) and a host of tools used in monitoring the compliance of development with organisational, national and international environmental standards (e.g. IEM procedures/systems, ISO protocols).

Tourism resource uses in protected areas are both consumptive and non-consumptive. They consist of a spectrum from natural to highly developed tourism landscapes. Within the continuum of tourist uses there exist multiple, overlapping and potentially conflicting, uses and user groups.

Building co-operation

The South African Constitution and various Acts of Parliament passed since 1994 emphasise the need to democratise decision making and the management of common property resources such as protected areas. Where appropriate, society must be able to participate in decision making and management. These requirements go beyond merely providing the public with an opportunity to comment on plans and activities already developed by a management authority. Management must therefore move toward a more participatory approach and not simply rely on consultation with interested and affected parties.

In addition, the Constitution, Biodiversity and Protected Areas Acts require organs of state to practice “cooperative governance” in their dealings with each other. In the case of protected areas management, relevant interagency interactions include national, provincial and local government and their development planning processes.

Effective park operations

Meeting conservation, co-operation and tourism objectives requires a great many logistical, administrative and human resource management skills. Overall management has to apply these skills to achieve biodiversity outcomes whilst also achieving justifiable economic and social returns from the operation of the national park.

Integrative support services

Management of national parks will invariably be supported by various corporate level policies and services. Among these would be a knowledge management system that generates, synthesises and disseminates information to improve decision making. Human resource management, financial, marketing, review and auditing services all contribute to effective management.

2.5 Legislative requirements for the contents of Protected Area Management Plans

In addition to requiring that SANParks produces management plans for all national parks in consultation with stakeholders, the Protected Areas Act (Section 41 (1) to (3)) provides more specific requirements for the contents and process of management planning.

Management plans must contain:

- The terms and conditions of any applicable plans for biodiversity management within the bioregional context.
- A coordinated policy framework.
- Planning measures, controls and performance criteria.
- An implementation programme for the plan, with costing.
- Procedures for public participation.
- Where appropriate, the implementation of community-based natural resource management.
- Zoning plan indicating the conservation objectives of each area and what activities may take place there.

Management plans may also contain:

- Development of economic opportunities within and adjacent to the park in terms of the Integrated Development Plan framework.
- Development of local management capacity and knowledge exchange.
- Financial and other support to ensure effective administration and implementation of a co-management agreement.

Preparation of park management plans is also governed by related legislation such as the Biodiversity Act, national policy, and international conventions that have been ratified by the South African government.

There are also biodiversity conservation planning processes at the national and regional level that take place outside of protected area management, under the auspices of other government agencies such as SANBI and DEAT. South Africa's current biodiversity planning context outside of park management is based on explicit spatial targets and systematic conservation planning. There are well-articulated national conservation targets within the national spatial biodiversity assessment (NSBA) and the national biodiversity strategy and action plan (NBSAP). A Protected Areas Expansion Strategy is currently being developed by SANBI and SANParks. SANParks is required to incorporate these national conservation objectives into its management planning process, as well as report against these national objectives.

3. APPROACHES TO ECOSYSTEM MANAGEMENT

This chapter serves to introduce and outline the major theoretical concepts underpinning SANParks approach to Protected Area management and the design of a management planning framework.

The management and decision-making process is required to be:

- **Strategic and value based:**
 - Purposeful and goal-directed, with the first step in planning and management being the description of a desired future state of the protected area based on scientific and societal needs and values.
- **Adaptive:**
 - In the face of uncertainty management actions are treated as an opportunity to learn by doing. Management is planned as a learning experience and improves through frequent review of policy and action.
- **Participatory**
 - Meaningfully involving all stakeholders to serve their needs, access their inputs and secure their cooperation.
 - Governing cooperatively with other agencies to coordinate and integrate goals and actions.

These principles draw on current theory and research on appropriate ecosystem and natural resource management approaches, in particular Adaptive Resource Management and its local derivative Strategic Adaptive Management (SAM) (Biggs and Rogers, 2003). These approaches are outlined briefly, followed by guidelines on facilitating participatory decision-making within SAM.

3.1 Strategic and value-based approaches to ecosystem management

The Protected Areas and Biodiversity Acts have introduced the requirement for conservation management in South Africa to be more goal-directed than has previously been achieved. Strategic management is not merely strategic planning (planning one's future actions) – it is “*acting with a purpose*”. This acknowledges that “the better you know where you are going the more likely you are to get there”. The ‘purpose’ of management needs to be made explicit and operational. The ultimate purpose of Protected Area management is informed by science, societal values and the mandate afforded to SANParks through democratic governance.

Articulating a vision for the desired future state of a protected area is the first step in management planning. It limits and directs all future management actions. This desired future condition is defined by the qualities of an ecosystem, or its components, which an organisation seeks to develop through its decisions and actions.

Prioritising a vision for a desired future state ensures that management employs what Keeney (1992) describes as “value-based decision-making”, which is oriented toward long-term goals serving ultimate values. Without explicit consideration of the values a decision must serve, the process defaults to alternatives-based thinking which is limited to selecting between only the most readily available current strategy options, which are then usually evaluated relative to short-term priorities and goals. A vision encourages strategic thinking with longer term purpose in mind.

BOX 1: The universal characteristics of strategic management (from Meffe *et al.*, 2002)

Strategic management is explicit. Strategic approaches define what an organisation, group or individual intends to do, how and why those actions were selected and whether or not they are accomplished. Being explicit means everyone knows what the group is doing, it *exposes hidden agendas* (because if some does or proposes something else it is easily evident) and makes everyone *accountable*.

Strategic management sets direction but allows flexibility. It focuses people on the agreed intentions of the group. When focussed on the longer-term outcomes people are free to use the best means to advance their common goals.

Strategic management promotes action. When the purpose is explicit and agreed on, people are *empowered* to act.

Strategic management starts at the top. That is it starts with a high level purpose that guides decisions that must fit within its context. Effective management is about choices and a strategic approach helps make good choices to ensure individuals or groups are doing what they should be doing, rather than using resources on actions not directly related to their goals.

Strategic management involves all stakeholders. The purpose must be set and accepted by the full group of people who have an interest in the decisions.

Strategic management requires good communication. Actions will be occurring in many different places implemented by many different individuals or groups. Good communication is needed to sustain energy and commitment and to ensure actions stay aligned with the purpose.

Strategic management seeks improvement not perfection. A supposedly perfect plan will take so long to develop that it will be obsolete before it is finished. Ecosystem management requires major changes in resource allocation which can seldom be achieved in one go. It must be tackled in an *evolutionary* manner.

3.2 Adaptive management

Effective ecosystem management is challenged by complexity and uncertainty. Levin (1999 p. 231) defines complexity as “an interconnected network of components that cannot be described by a few rules; generally manifest in structure, order and functioning emerging from the interactions among diverse parts”.

There are four sources of uncertainty and complexity in ecosystems that profoundly affect management decisions and a manager’s ability to achieve a set of desired conditions (from Meffe *et al.*, 2002):

- Environmental uncertainty (variable weather, natural catastrophes).
- Biological uncertainty (variable weather, natural catastrophes).
- Non-independence of events and interactions (indirect/cascading effects, synergistic/contingency effects and cumulative effects).

- Uncertainties about or caused by human behaviour (human-induced catastrophes, insufficient knowledge, effects of random variation or noise, unpredictable social, institutional, and economic changes).

There are four potential methods of dealing with uncertainty and complexity (Meffe *et al.*, 2002):

- Get as many people as possible thinking holistically about the system (biophysical, socioeconomic and institutional) and events likely to occur there.
- Use mathematical and computer modelling and statistical analyses that account for random events.
- Make decisions with buffers to absorb surprises.
- Employ adaptive management which seeks changes in direction as new information becomes available.

Adaptive Management (Holling, 1978, Walters, 1986, Walters and Holling, 1990) is an approach to natural resource and ecosystem management that acknowledges the uncertainty and complexity inherent in natural systems and which limits our knowledge and understanding of ecosystem functioning. Adaptive management offers a means of dealing with this uncertainty by incorporating research into conservation action. Specifically, it is the integration of design, management, and monitoring to *systematically test assumptions in order to adapt and learn*.

Within an adaptive approach management policies are treated as experiments – the practicality of trial and error learning is combined with the rigour and explicitness of the scientific method, to produce learning that is both relevant and valid. Learning together in this way is the basis of a partnership between scientists and managers. Three different categories of adaptive management have been recognised:

Active adaptive management:

This follows the classic Holling and Walters method which is a series of steps that resemble the scientific method but are applied in large scale management settings. It has been attempted in full only a few times and has been successfully implemented even less. The basic steps of active adaptive management are as follows:

- List imaginative policy options.
- Undertake explicit modelling of how the system functions and how it might respond to the new policy.
- During the modelling exercise identify gaps in knowledge that prevent the new approach from being implemented.
- Design management actions to gather information about the gaps. The management experiment would reference sites for making comparisons.
- As management proceeds collect data to measure performance.
- Modify the model on the basis of experimental outcome to help decide on best policy.

Passive adaptive management:

The most common adaptive approach is less experimentally demanding and means a few aspects of an experiment are missing although learning remains the major objective. The most common differences are that there is no construction of elaborate models, and sites are chosen non-randomly on more immediate, pragmatic needs. Reference sites may be used for comparison with the managed sites but often this is not possible. For example, in adaptive management of a river there can be no replicates or reference sites because there is only one river and it changes down its course.

Documented trial and error adaptive management:

Trial and error learning can also resemble adaptive management as long as the implementers collect data, analyse them objectively and share their learning with others. Almost any task

can be turned into a learning opportunity by asking a few questions, while ensuring one is rigorous and explicit.

BOX 2: Principles for the Practice of Adaptive Management (from Salafsky, Margoluis & Redford, 2001)

- Principle 1: Do Adaptive Management Yourself
- Principle 2: Promote Institutional Curiosity and Innovation
- Principle 3: Value Failures
- Principle 4: Expect Surprise and Capitalize on Crisis
- Principle 5: Encourage Personal Growth
- Principle 6: Create Learning Organizations and Partnerships
- Principle 7: Contribute to Global Learning
- Principle 8: Practice the Art of Adaptive Management

3.3 Adaptive Management in South Africa: Strategic Adaptive Management

The term “adaptive management” is used quite often in South Africa but such management seldom systematically tests assumptions. It is generally “trial and error management” and is not really adaptive at all. Occasionally there is documentation but it is usually after the fact, and is not explicitly built into a clearly defined learning process. It would therefore be inappropriate to call it “Documented Trial and Error Adaptive Management”.

In 1996 a group of conservation and river scientists and managers developed a formal process termed “Strategic Adaptive Management” (SAM) (Rogers and Bestbier, 1997) which aimed to move environmental management away from reactive, conflict-driven management of human impacts, to consensus-driven, learning-oriented management for explicitly stated ecosystem goals.

The SAM approach is similar to what Meffe *et al.* (2002) describe as Ecosystem Management: “an approach to maintaining or restoring the composition, structure and function of natural and modified ecosystems for the goal of long term sustainability” and which is “based on a collectively developed vision of desired future conditions that integrates ecological, socioeconomic and institutional perspectives applied within a geographic framework defined primarily by natural ecological boundaries.”

However SAM differs from Meffe *et al.*'s Ecosystem Management in five important respects:

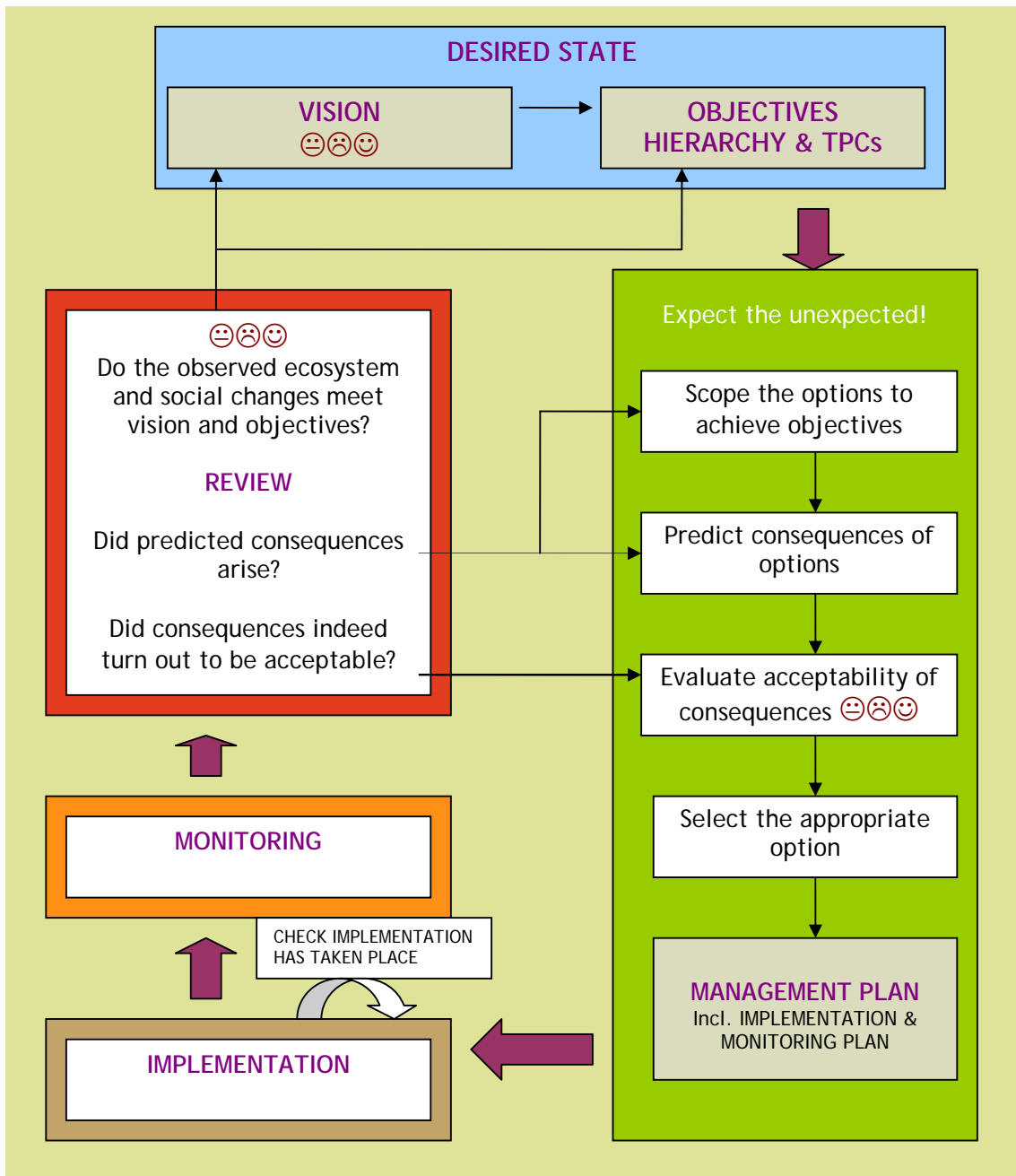
- The formal recognition of the role played by values in decision making. Consensus seeking methods are used to align stakeholder values in the definition of desired future conditions.
- A process for developing an ‘objectives hierarchy’ to translate a broad values-based vision into achievable science-based ecosystem outcomes.
- A process for defining spatially and temporally explicit ecosystem/biodiversity outcomes expressed as hypotheses of ecosystem response to natural flux and management actions. Thresholds of Potential Concern (TPCs) are the upper and lower levels along a continuum of change in selected indicators, and are hypotheses of acceptable change in ecosystem structure, function and composition.
- The use of multiple modes and paths of scientific enquiry to improve understanding. Thus it can better deal with ecosystem level “noise”, synergistic, cumulative and indirect effects, than can experimental approaches. Experimentation, in a scientific

method sense, is of very limited value in a complex, dynamic social-ecological system.

- Explicit theory and guidelines for institutional change needed to align previously bureaucratic organisations with the imperatives of becoming an adaptive or learning institution.

The basic steps in SAM are (Figure 3.1):

- **DESCRIBE THE DESIRED STATE:**
 - **Visioning:** Understand, with stakeholders, the social, economic and ecological context of the system to be managed, and the principles/values that guide management. Develop a broadly acceptable vision of the future.
 - **Translate vision into ecosystem objectives/outcomes:** Develop an ‘objectives hierarchy’ that documents the sequential reasoning used in translating a broad societal values-based vision into science-based ecosystem outcomes.
 - **Generate a set of TPCs to define the acceptable levels of change in ecosystem/biodiversity composition, structure and function.**
- **DEVELOP A PLAN TO ACHIEVE OR MAINTAIN THE DESIRED STATE:**
 - **Expect the unexpected:** Use a variety of tools (scenario planning, systems thinking, models, historical records, etc.) to scope the range, and likely spatiotemporal limits, of unusual events and their implications for management towards the desired future conditions.
 - **Scope the range of management options** to achieve the desired future conditions and predict (formally or informally) their likely outcomes under different scenarios.
 - **Select the best options:** In co-operation with stakeholders decide which management options provide the best potential learning opportunities, and social-ecological system outcomes.
- **IMPLEMENT:**
 - **Implement the planned management interventions.**
- **MONITOR:**
 - **Monitor and audit achievements:** Use a range of research projects, traditional monitoring, modeling and surveys to understand system response to natural flux and management intervention. Weigh this against the desired outcomes.
- **REVIEW:**
 - **Reflect at each step:** Is thinking and action congruent with principles, values and vision? What does knowledge gained tell us about (1) our understanding of the ecosystem, (2) its responses, (3) how realistic are the desired outcomes and (4) how useful are the processes used to achieve them?



☺☺☺ Stakeholder involvement crucial

Figure 3.1: Strategic adaptive management (SAM) process

Bounding and defending the Desired State: setting Thresholds of Potential Concern (TPCs)

The desired state is based on a vision for a set of desired future ecosystem conditions. It is important to note that this refers to a ‘desired set of varying conditions’ rather than a static state. Ecosystem conditions are not fixed but inherently dynamic. We cannot aim to achieve specific and unchanging ecosystem conditions, but only to maintain natural variation and processes as the basis for ecosystem resilience – resilient ecosystems are able to absorb environmental stressors without undergoing an irreversible change in their state.

But some changes may be undesirable as they form part of a long-term trend moving the ecosystem away from the desired state. Over time this trend may become irreversible. The desired outcomes of management are therefore expressed as limits of acceptable change – termed Thresholds of Potential Concern (TPCs). TPCs are upper and lower levels of change in selected indicators. If TPCs are reached it is very likely that the desired state will not be achieved or will not be able to be achieved into the future.

In parks that are within the desired state, TPCs are red flags to managers warning that management intervention could be necessary to defend the desired state. Modelling is also used to predict the results of future monitoring and thus give early warning that a TPC is likely to be breached. For parks that are in the process of rehabilitation toward a desired state, TPCs represent achievable goals for management to work toward.

For example, KNP uses about ten major TPC groupings. Jointly, these represent a multidimensional envelope in which park management and stakeholders wish the system to remain, “bouncing around” as much as possible, without going to the undesirable zone.

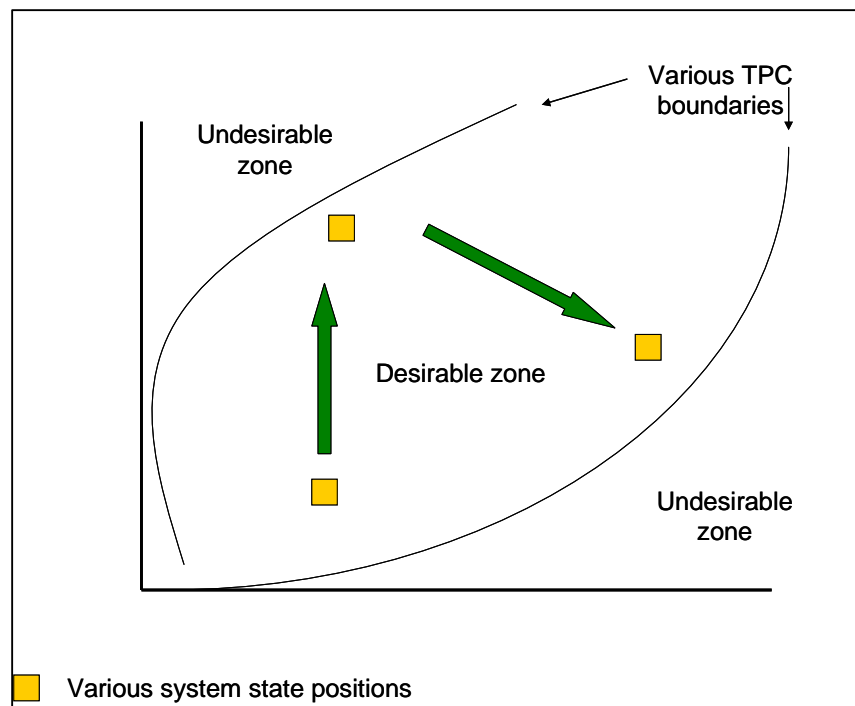


Figure 3.2: TPCs as boundaries of the desired state

3.4 Systematic Conservation Planning

Systematic conservation planning (Margules and Pressey, 2000) is a structured and systematic approach to locating and designing protected areas so that they achieve representativeness (represent the full variety of biodiversity ideally at all levels of organisation) and persistence (promote the long-term survival of the biodiversity they contain). Because conservation planning has generally not been systematic in the past, existing systems of protected areas worldwide contain a biased sample of biodiversity, generally being that of areas that are very remote or have little value for commercial use.

SANParks uses SCP to address specific issues of protected area management planning within the broader context of the SAM process. SCP helps to quantify some of the spatial biodiversity and landscape objectives that are identified in the adaptive management process. SCP provides a spatial framework with which to quantitatively monitor and evaluate the attainment of these spatial biodiversity objectives within a park. Additionally, the process/tool is useful in prioritizing management actions and activities in attaining the desired state/objectives.

Systematic planning goes through a number of steps, which can be mapped onto the various phases of the Strategic Adaptive Management cycle.

- Measure and map biodiversity in as systematic and uniform a way as possible. (This contributes to an assessment of context and current state as part of a desired state process.)
- Set quantified targets for the biodiversity features and processes that have been identified. (This provides spatially explicit quantified objectives as part of a spatial desired state.)
- Evaluate the current state against these objectives. (Comparison of the current and desired state identifies the need for management intervention.)
- Identify and prioritise actions which are required to move from the current state to the desired state, which typically takes the form of identifying areas that require some sort of conservation action. (This forms part of the process of considering and selecting management actions.)
- Implement the actions to achieve the desired state.
- Monitor and evaluate the attainment of the objectives against the quantitative targets.

SCP is used within 4 key areas of SANParks management planning:

- To better understand the context for decision making in SAM.
- Park expansion planning.
- Internal land use planning to produce a Conservation Development Framework (CDF).
- External land use planning to analyse spatial aspects of threats (in the 'park interface zone') to biodiversity in a park.

4. BUILDING COOPERATION: PRINCIPLES OF PARTICIPATORY DECISION-MAKING

One of the objectives of the Protected Areas Act is to “promote participation of local communities in the management of protected areas” (Section 2 (f)). When preparing a protected area management plan the management authority must consult municipalities, other organs of state, local communities and other interested and affected parties. As biodiversity and ‘wilderness’ can be considered to be a national and even international resource, stakeholders in protected area management can range beyond local and regional borders.

As the Strategic Adaptive Management cycle shows, stakeholders are involved at three main points in the review cycle, at which decision-making is strongly value-based, with multiple, often conflicting, objectives at stake. These are:

- Setting the vision.
- Evaluating the acceptability of predicted consequences of potential management options.
- Reviewing the outcome of management relative to the vision.

SANParks has developed the following principles to which all stakeholder participation processes undertaken by the organisation must conform:

- Have a clearly stated purpose.
- Identify the stakeholders to participate in the selected process.
- Define and communicate levels of decision-making and stakeholder involvement.
- Seek to notify stakeholders of participation processes through appropriate mechanisms.
- Seek to obtain commitment from all stakeholders to a participatory process based on relevance, integrity, mutual respect, transparency and inclusiveness in order to seek the best possible solution.
- Ensure that the process provides the opportunity for input from all stakeholders within reasonable timeframes, emphasising the sharing of information, joint-learning and capacity building.
- Ensure that processes recognise all knowledge, indigenous and ordinary, as well as the diversity of values and opinions that exist between stakeholders.
- Promote participation by stakeholders through timeous and full disclosure of all relevant and appropriate information.
- Provide feedback on the outcome of the process to stakeholders and demonstrate how their inputs have been considered in the decision making process.
- Ensure that methodologies accommodate the context of the issue at hand and the availability of resources (people, time, money) and do not conflict with these guiding principles.
- Promote effective co-operative governance at a national, provincial and local level.
- Give particular attention to ensuring participation by marginalised communities, communities with specific concerns, or communities that have contractual rights in the National Park.
- Effect capacity building within SANParks to support these guiding principles for stakeholder participation.

SAM ultimately proposes an approach to stakeholder involvement which is participatory and not merely consultative. Consultative management only requires managers to either consult with, or offer an opportunity for comment, to interested and affected parties. The manager does not need to act on that consultation. By contrast, participatory management requires that stakeholders have a role within, and influence on, decision making. This does not mean they make all the decisions because the ultimate responsibility always lies with the designated manager/management institution. It does, however, mean that stakeholders must have the opportunity to make constructive input to management decisions that concern them. The law, SANParks values and the park management plan set the boundaries of what constitutes an

acceptable decision. Moving beyond consultation to truly participatory management is a complex task. A balance must be struck between exercising the authority vested in National Park management, and co-operating with society to meet their expectations and ensure their rights.

Some central principles for achieving a more participatory management and decision-making process are:

- Focus on the future, shared needs and values.
- Use a consensus-seeking approach.
- Involve stakeholders early in the process, allowing them to take part in describing the context, defining the 'problem', determining the vision, objectives and operating principles for management.
- Aim to learn together and share information, not to educate stakeholders, or to present and defend a near-final plan or proposal for their approval.

Focus on the future

Processes aimed at reaching agreement on objectives within or between organisations will entail dealing with peoples' perspectives, sensitivities, values and prejudices. Since strategic and co-operative management is new to conservation, especially in South Africa, any attempt to initiate it, and to develop common objectives, will encroach on people's comfort zones. Resistance to change, if not properly managed, will lead to conflict, and decreasing commitment and motivation. It is important to recognise that this resistance is natural. It arises out of a fear of losing stability and of the unknown. South Africa is a country in change, a developing democracy, so implementing our new laws has the potential to attack old comfort zones. Rather focus on what the future can bring, than how the present or past will change.

Overcoming resistance to change hinges on developing an atmosphere of trust. The best way of achieving this is to ensure that the process of change focuses on future needs, of both individuals and institutions, rather than present or past problems. Needs involve values and a structured process of negotiation is the best way to integrate values and meet needs. A focus on values and the future has the remarkable tendency to dissipate the conflict that often arises from defence of current territory, personal desires/beliefs, or present ownership.

Avoid compromise; seek consensus

To many people negotiation means reaching compromise on solutions to the respective party's problems. In general such negotiation for compromise (Figure 3.3) leads to pragmatic but short-term solutions. However they are value neutral and are not durable beyond the specific negotiation circumstances. Each time another problem arises, no matter how small, decisions have to be renegotiated. Annual wrangles between unions and employers are a typical example. This would clearly not be suitable for strategic management where one wants to develop a plan that takes one well into the future.

An alternative approach (Figure 3.3) focuses on developing a common understanding among parties of the values and needs which the future must hold. This is a far more useful approach toward conflict resolution. More importantly, it forms a firm foundation for value-based decision making so fundamental to effective conservation management.

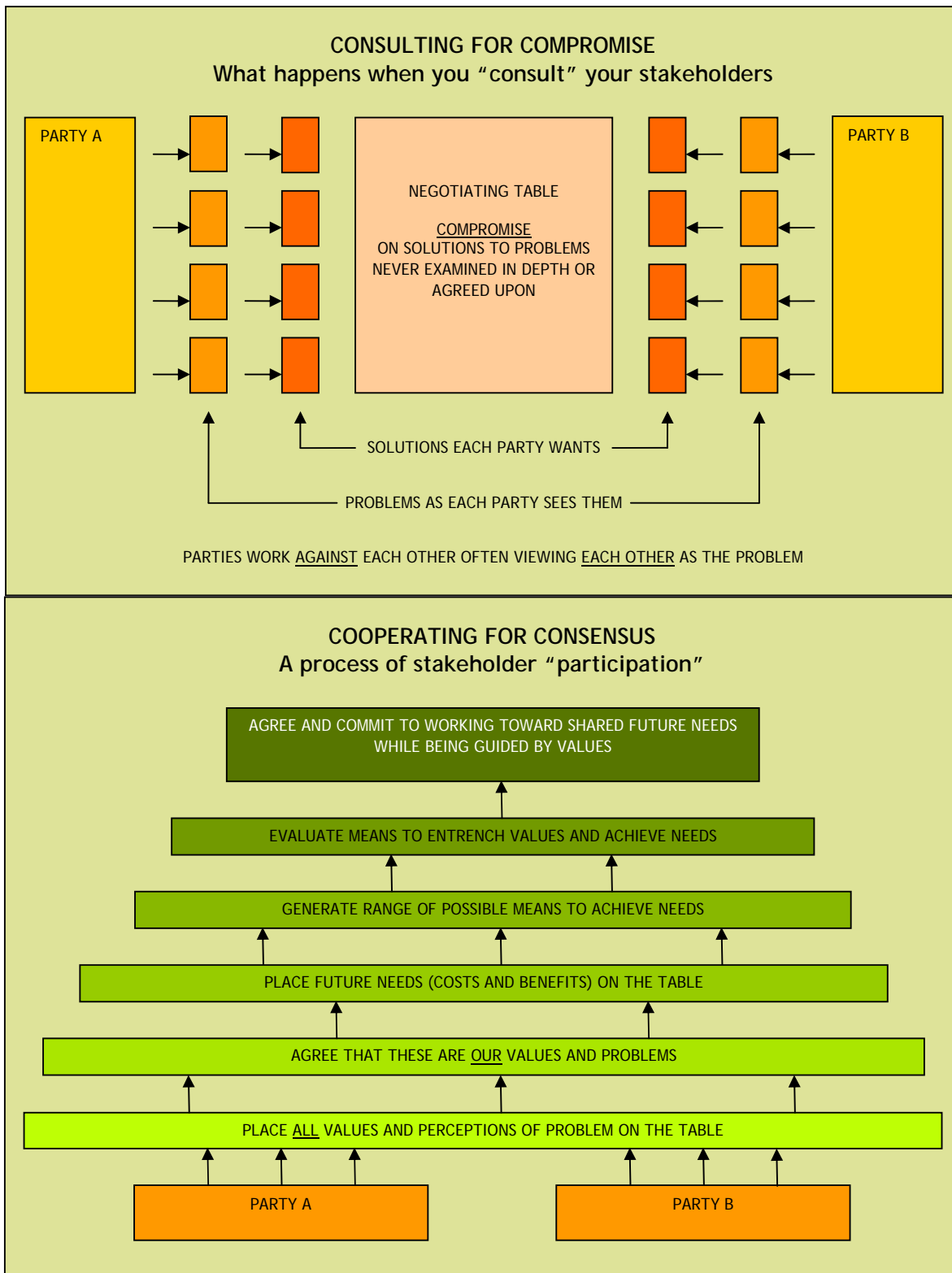


Figure 3.3: Consensus versus compromise

Note: Consensus is defined as general, or widespread, agreement. Achieving consensus does not mean that everyone is in complete agreement with everyone else. Consensus can be achieved if people agree to hold different views on a subject, or even agree that there is more than one legitimate view. Sufficient consensus is when there is sufficient agreement to proceed with a course of action though some participants may disagree. Consensus is

therefore often a judgment call that must be made by the group of people concerned, in the best interests of the group.

Respect the rules

The key to consensus and acceptance is how one gets there rather than the specific end point achieved. The most important procedure in this alternative approach to negotiation is to have all parties lay their values, needs and problems on the table, at the start of the exercise. The best way to achieve this is simply to go around the room and ask each person to say what they think the problem is, and what they think a good future situation would be. Write each comment down on a flip chart with the persons name next to it. To avoid people keeping their agendas hidden and/or having unreasonable demands the facilitator should introduce the only three rules of the “game”:

- Recognise that the best way to achieve what you need is to help others achieve what they need.
- Follow the maxim – Seek first to understand then to be understood.
- Accept other people’s views and understanding of the issue at hand. Ask another person to explain what they said in more detail, or why they feel the way they do, but their perspective must be accepted. It is part of the playing field.

Following these three rules means that all the ‘cards’ are laid on the table and each person knows how others see the problem and the future. The resultant list of perceptions of the problem and the future forms the basis for all other steps. Everyone now knows what the others want and what they value. This basic procedure, laying all the cards on the table before attempting to discuss their merits, can be used at any point in a planning process. Now all parties have been *exposed to ALL the possible solutions to a problem before attempting to select one to implement*. All too often people try to select the best of the immediately obvious solutions without sufficient analysis of either the problem, or the possible solutions. Unnecessary, or even antagonistic, debate is then inevitable because the foundations for making a decision have not been properly laid.

Level the playing field for mutual learning

All too often consultation processes are tacked on to the end of an internal or expert planning process and then used to ‘sell’ or defend a near-final decision or proposal to stakeholders. This cannot achieve stakeholder buy-in or cooperation or elicit the stakeholder needs, values, knowledge or experience that can create wise, fair or durable decisions. Instead, from the earliest stages everyone must be given the opportunity to voice their perception or analysis of the “problem” in a ‘round table’ setting where specialist, management and stakeholder contributions are given equal consideration. Honestly look for the best outcome using everyone’s suggestions. Everyone should be prepared to accept an outcome that may be different from their original perceptions, as long as this is still within the law, value set and policy. This can be a source of anxiety for managers who are used to making their own decisions, but it is the only way to build cooperation toward a truly shared vision of the future.

Lay a firm foundation for long-term cooperation

Successful participatory management does not involve or require continually polling or assembling all the stakeholders every time a decision needs to be made. Most stakeholders are just as busy as protected area managers and will quickly develop ‘participation fatigue’. If one

can get agreement on the overall objectives and principles through a truly inclusive process early on – and build trust, consensus, mutual understanding and ongoing relationships along the way – one can largely proceed to make the day to day decisions without continuous consultation. Occasional meetings will be needed to keep everyone informed and to discuss a way forward for new issues that arise. But, when these new issues arise, the original objectives and principles provide the guidance needed to keep things on track.

BOX 3: Definitions for terms used in SANParks participation processes

“community/ies” means any group of persons or part of such a group who share common interests and who regard themselves as a community¹

“facilitation” is a process used to enable dialogue between stakeholders to allow for sharing and learning about diverse interests and need in a non-adversarial, open way.

“local community/ies” means any community of people living or having rights or interests in a distinct geographical area.²

“organs of state” mean-

(a) any department of state or administration in the national, provincial or local sphere of government; or

(b) any other functionary or institution –

(i) exercising a power or performing a function in terms of the Constitution or a provincial constitution;

(ii) exercising a public power or performing a public function in terms of any legislation³

“park forum” The recognised stakeholder forum through which stakeholder participation for SANParks is to be achieved.

“stakeholders” means municipalities, other organs of state, local communities and any other affected parties which have an interest in the area⁴, but are not limited to this group and may also include *inter alia*;

- Individuals
- Neighbours
- Visitors to parks
- Private companies or individuals whose business relates to or could be impacted on by protected areas
- Community/ies
- Groups with specific interests and concerns
- Park Forums
- National and international groups with an interest in conservation or the management of protected areas
- Non-government organisations;
- Community based organisations;
- SANParks
- Vulnerable and disadvantaged persons

1. National Environmental Management Act 107 of 1998, Section 1: Definitions

2. National Environmental Management: Protected Areas Act 57 of 2003, Section 1: Definitions

3. Section 239 of the South African Constitution

4. National Environmental Management: Protected Areas Act 57 of 2003, 39 (3)

5. OVERVIEW OF SANPARKS POLICY AND PLANNING CYCLES

The Protected Area Management Planning Framework is the product of applying the principles of participatory Strategic Adaptive Management (Chapters 3 and 4) to the process of managing protected areas within the context of legislation and SANParks mandate, values and organisational structure (Chapter 2). In this chapter the overall SANParks policy and planning cycle is presented and explained. Detailed guidelines for implementing the sequential phases of this cycle for protected area planning are discussed in Chapter 6.

The overall management process is cyclic, involving the following sequential (though often overlapping and/or iterative) major phases of:

- **VISION/POLICY**
 - Process asks: **“Where do we want to go?”**
 - Policy in the form of operating principles developed at both the corporate and protected area level guide the process of vision-building, planning, implementation and review.
- **PLAN**
 - Process asks: **“How do we get there?”**
 - Management options are selected to achieve the objectives that make up the vision.
 - A comprehensive plan for action includes time frames, budgets and human resources.
- **IMPLEMENTATION**
 - Process is one of executing the plan to **get where we want to go**.
- **MONITORING**
 - A monitoring plan is executed alongside the implementation plan to collect data which tell us **how far we have travelled** toward our destination.
- **REVIEW**
 - Process asks: **“Did we get where we want to go?”** and **“Is this really where we want to be?”**
 - Data from monitoring enables us to compare the intended versus actual outcomes of management, and thus to update our knowledge and assumptions and thereby revise the management options, the implementation plan and if necessary the vision and objectives themselves.

SANParks is structured into corporate and park level functions and with this arise different levels of policy, planning and authorisation. Various products/decisions must be approved at different managerial levels. High level policies which aim to create consistent actions and decisions across all national parks are set at the corporate level. There are also policies, goals and plans developed by DEAT and SANBI which apply nationally and regionally and therefore to protected areas. Park-specific policies are developed that set out the vision and objectives for a desired future state for each park.

The overall policy and decision making cycle influencing Protected Area management is depicted in Figure 5.1. The Balanced Scorecard is woven in throughout this framework to assess progress on broad organizational objectives. It does not drive the process but acts as an alignment, measurement and communication tool.

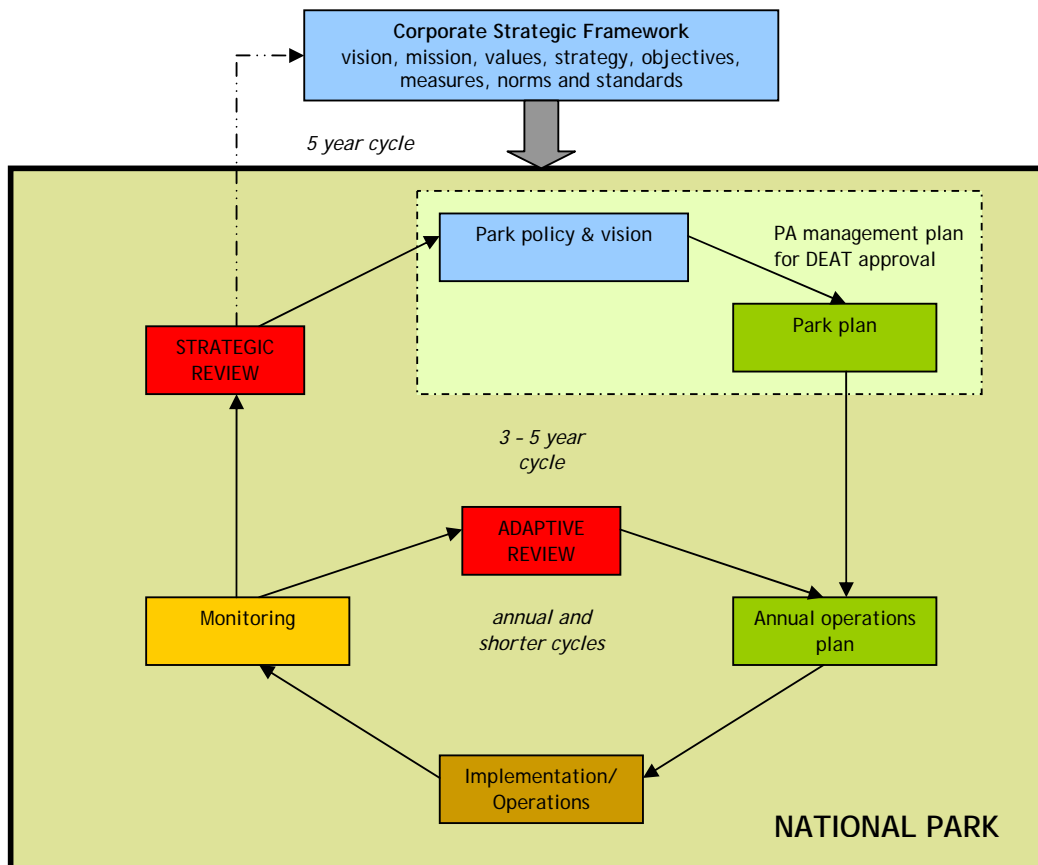


Figure 5.1: Overview of SANParks policy and planning cycles at the corporate and park level

5.1 The park management planning and approval process

Under the Protected Areas Act management plans must be approved by the Minister of Environmental Affairs and Forestry. There are a number of stages in the development of a management plan leading to its ultimate approval by SANParks and DEAT.

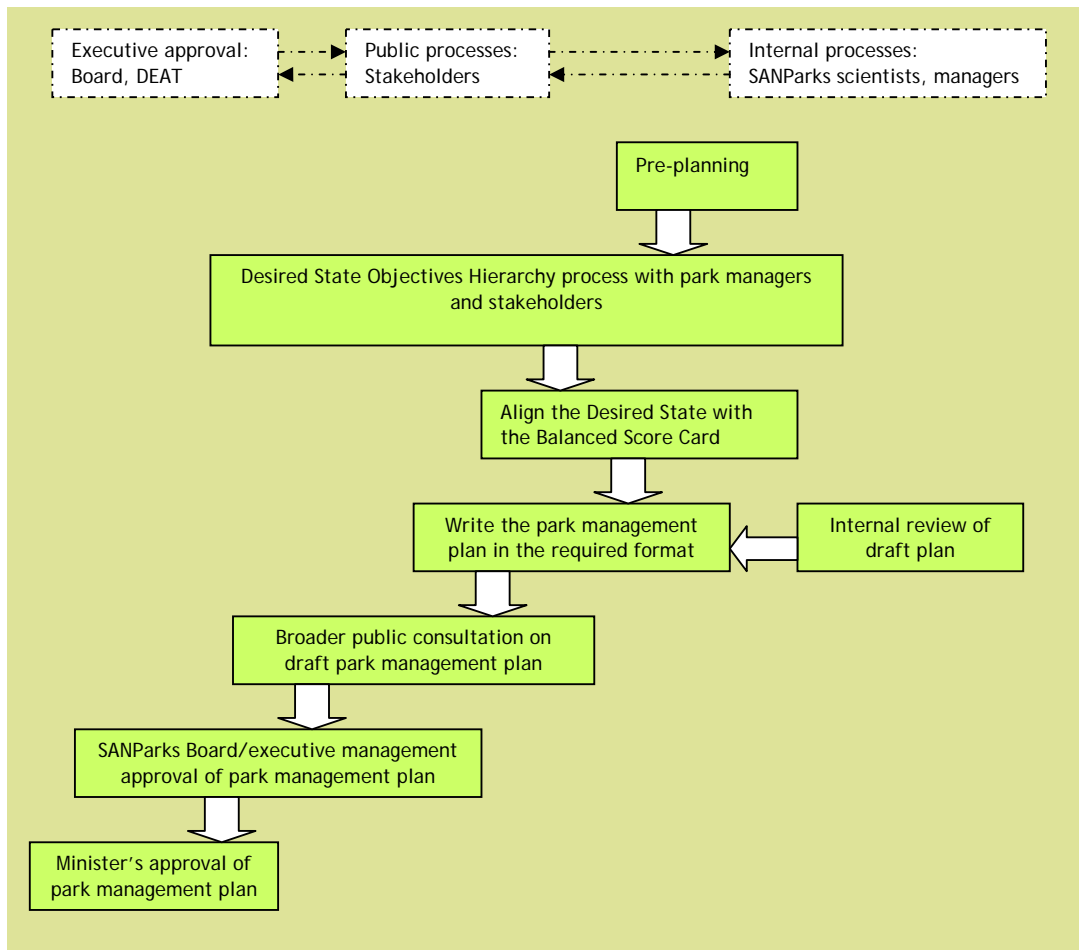


Figure 5.2: The park management planning and approval process

Before commencing with the development of the management plan a **task team** should be formed under the guidance of Park Planning and Development (PPD). Their first task should be to identify task team members (key role players). At a minimum the following members should be on the task team: facilitator (external/internal), coordination (PPD), administrative support, biophysical context (Scientific Services), strategic guidance (park operations) and cooperative governance. A **pre-planning meeting** must be convened to identify missing task team members, clarify roles and responsibilities of the team and members, provide the context for developing the management plan, identify participants for the desired state workshop and convene a desired state workshop.

The **desired state workshop** is held with park managers and stakeholders and following the protocol outlined in Chapter 6. The **park management plan** needs to be written in a **standard format** (presented in Chapter 7) designed to reflect the principles of the SAM process and to ensure that critical aspects of the management process are not overlooked.

Before the draft management plan can be distributed for stakeholder input it must undergo an **internal review** by a person other than the writer of the plan. The reviewer must ensure that the plan:

- Conforms to the criteria as set out in the NEM:PAA
- Conforms to the SANParks standard format
- Is in line with the Coordinated Policy Framework
- Adheres to the Management Plan Framework developed by DEAT (Guidance for the development of management plans in terms of the NEMA:PAA)

The plan is then presented to the public and forms the focus of a **second stakeholder meeting**. Comments are integrated into a final draft of the management plan which is then submitted for approval by the **SANParks executive/board** and then **DEAT**.

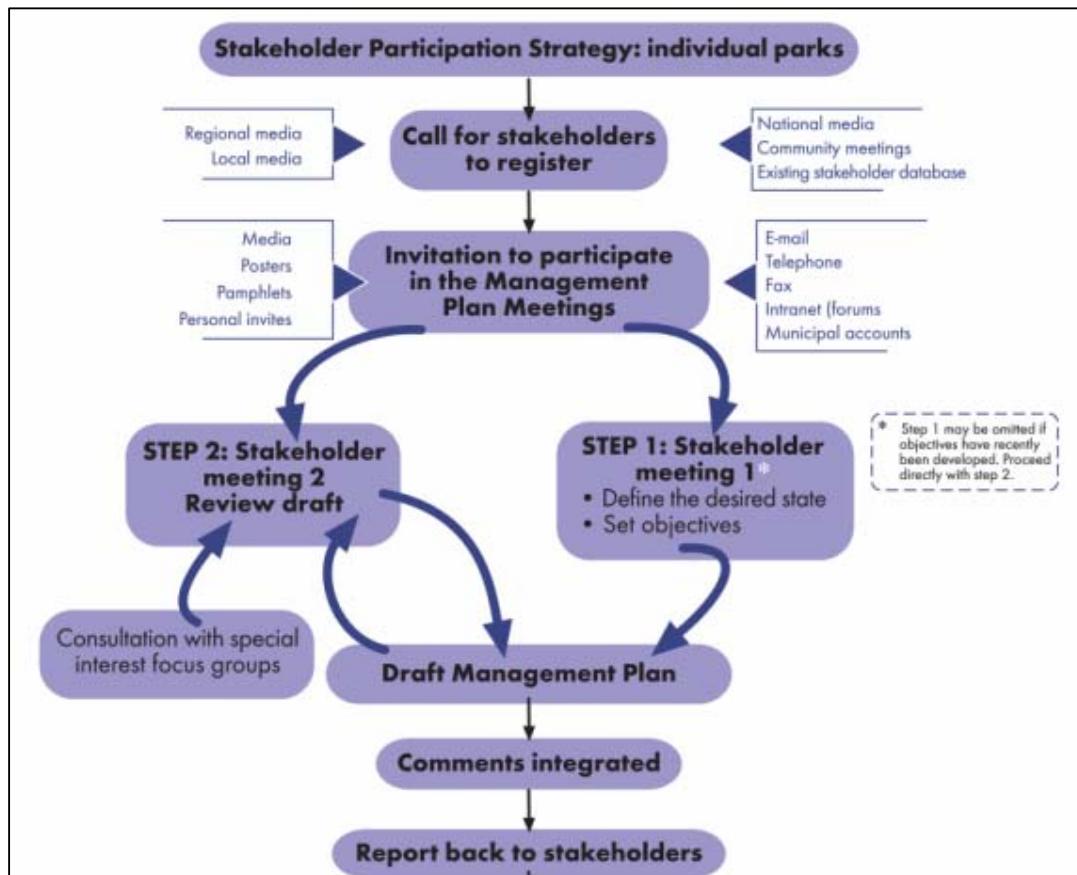


Figure 5.3: Stakeholder participation in the management planning process

BOX 4: Guidelines for administering the planning process

- Stick to a focused group - personnel involved with the park.
- A pre-workshop meeting with park staff can be arranged to assist them with the task at hand.
- A facilitator should be appointed to manage the process; it can be someone from SANParks or an external person. The facilitator must have a good understanding of the adaptive planning process and treat staff and other interested parties as equal stakeholders.
- Arrange a first workshop at which the facilitator takes all the stakeholders through the adaptive planning process to define a desired state for the park.
- Allow enough time to contextualize the adaptive planning processes.
- Proper representation by the park forum and local government will ensure better buy-in. It may be necessary to have separate meetings with local authorities as it is sometimes difficult to get them to workshops.
- In the weeks following the first workshop SANParks scientific staff develops a detailed plan to meet the stakeholders' expectations (desired state) without compromising SANParks mandate. This detailed plan is taken back to the stakeholders for review.
- A second workshop is held to discuss the detailed plan and the stakeholders' reactions to this, with the aim of reaching consensus on the plan's potential to meet the desired state in an adaptive management system.
- To a large extent the outcome of the first workshop provides an agenda for the park forum because it is this body that tracks progress towards the desired state.

6. A STEP-BY-STEP PROTECTED AREA MANAGEMENT PLANNING PROCESS

In this chapter guidelines and descriptions are presented for particular phases in the management planning process, in particular the:

- Desired State Objectives Hierarchy process
- TPC decision support system
- Park zoning and expansion plans
- Review and reflection

6.1 Developing a vision for a desired future state and translating it into achievable objectives

The park ecosystem desired state is based on a collectively developed vision of a set of desired future conditions (that are necessarily varying), integrating ecological, socio-economic, technological, political and institutional perspectives within a geographical framework. The imperative to maintain variation in ecosystems is articulated in the SANParks biodiversity conservation values which accept that change in a system is ongoing and desirable, although some types of change are more desirable than others.

The desired state process and tool is the focus and essence of the Protected Area Management Planning framework. The outcome of this process both inspires and constrains the content of all future management actions. Having a clearly articulated and consensually developed vision and objectives gives Protected Area management **defendable purpose, clear focus and auditable actions**. A vision for a desired future state in the form of measurable ecological end-points enables the design of adaptive management interventions to test hypotheses about ecosystem structure, function and response.

The desired future state protocol ultimately produces what is termed an “objectives hierarchy”. The hierarchy begins at the broadest level with the organisation’s “vision” for management. The protocol provides a step-by-step process for decomposing the vision into a series of “objectives” of increasing focus, rigour and achievability. The finest level of the hierarchy is defined by achievable objectives.

Note that the whole objectives hierarchy represents the desired state of the protected area because the desired state is given with increasing level of detail as one moves down the hierarchy. The hierarchy also represents a record of the rationale for the decisions one takes on what are the important objectives. In this sense it is a very useful, even mandatory, tool for defending decisions in the future and ensuring accountability to the management plan.

The following protocol provides a step-by step process for developing a desired state in the form of an objectives hierarchy (Figure 6.1). Procedural tips are given in text boxes for each step. This protocol should be implemented in a workshop environment with stakeholders and the assistance of a facilitator who is familiar with the process.

Extracts from the management plan for Marakele National Park provide an example of the contents and presentation of the desired state aspects of a management plan (Appendix 1).

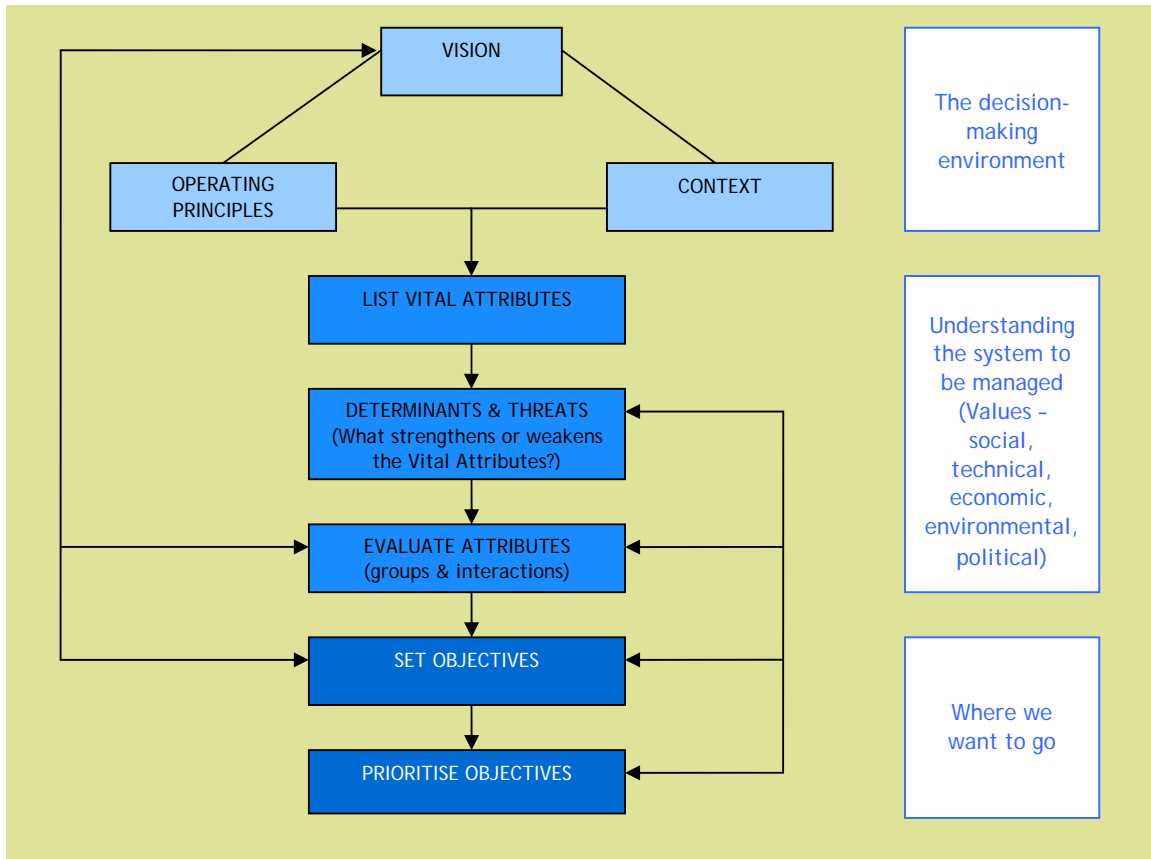


Figure 6.1: Process of developing a desired future state represented by an objectives hierarchy

Step 1: Reach consensus on the vision and operating principles

A vision is a concise statement describing the core business and philosophy of management, whereas a statement of the operating principles describes the core values that circumscribe decision making. SANParks biodiversity and corporate values have been set but they may need to be supplemented by operating principles that meet the specific needs of an individual National Park.

Before any other management action can be taken the vision and operating principles need to be fully accepted to prevent subsequent procedural breakdown. Development of a sound information base to provide the full context (Step 2) for management will greatly assist this process.

This is one step at which value and needs-based negotiation (See Chapter 3 - building cooperation) is essential. Identify the key elements of the vision and develop operating principles for each.

Since the operating principles describe core institutional values they bound decision making and should be used as checks and balances at each step of the protocol.

Step 2: Provide the context for setting the objectives

Describe the context of the managed system at local, regional, national and international levels and considering social, technical, ecological, economic and political aspects and values (VSTEPP). The SANParks Corporate Strategic Framework as well as the Balanced Scorecard also provide higher level context to park planning.

This step requires considerable brainstorming, knowledge of the literature, local conditions and policies, governmental policies and international agreements. It is important to involve all stakeholders in building this context to ensure common understanding as a base for future negotiations.

Step 3: Document the vital attributes of the system to be managed

List **all** the known and perceived, current and future vital attributes of the system. Vital attributes are the most important characteristics/properties (biodiversity, heritage, geographic, touristic, etc.) of the system to be managed - which make the system unique and which are valued by various stakeholders.

Current attributes may be determined from inventory type lists of V-STEER characteristics of the system, e.g. species diversity and landscape types, social and cultural attributes, the role in the local economy. Scenario modelling may be useful for identifying future attributes.

The next step is to discuss and evaluate these lists to reduce them to the essential elements compatible with the vision.

This is an important step in the objective setting process as it identifies the fundamental purpose(s) of conservation management for a particular Park.

It is essential that everyone's perceptions of the strengths/vital attributes are aired. This is a step that brings participants mental models of the system to the surface. Sometimes it exposes hidden agendas. Careful facilitation and much tact are needed in this phase. Encourage participants to put their "cards on the table" to produce a provisional list of their perceptions of the vital attributes, without debating their merits. Then reduce the list by eliminating those incompatible with each other, or the vision.

Step 4: Evaluate and consolidate the attributes

Matrices are a useful tool in exploring which attributes appear to be complementary and those that are conflicting. Attributes can be sifted, grouped together and condensed. The end product of this process will be a concise list of vital attributes for which the Park can be managed.

Table 6.1: An example of a matrix used in the initial evaluation of the strengths (O - complementary, X - conflicting, ? - unknown).

Strength	1	2	3	4	5	6	7
1	-	O	O	O	O	O	O
2		-	?	O	X	?	O
3			-	O	O	O	O
4				-	O	O	O
5					-	O	X
6						-	?
7							-

Personal values play an important role in this step as long held assumptions about what is "vital" in a Park need to be discussed and supporting evidence found. Look for common ground to rationalise the list of attributes to ensure compatibility with the vision and operating principles.

This can be a complex task. Techniques such as ordination, overlapping, congruency, optimization, linkage and interaction may be used to investigate compatibility and trade-offs between vital attributes if round table discussion does not resolve the issues.

Step 5: Record all the determinants of, and constraints and threats to, the vital attributes

A major purpose of management is to ensure the maintenance of the determinants of the vital attributes. List all the determinants of, and the constraints and threats to, the condensed list of vital attributes. Determinants are those factors or processes that determine, strengthen or ensure persistence while threats are those factors or processes that threaten, erode or inhibit these

Expert opinion is needed for this important step but do not let it be constrained by the lack of site specific knowledge. Use experts across the V-STEER spectrum where you can.

Develop hypotheses of determinants if they are not known. This is invoking an adaptive approach to management which will test their importance over time.

attributes or their determinants. Threats can also be factors within, or outside, a partnership that undermine its values and inhibit the pursuit of the mission or future desired state. Knowledge of the environmental and cultural “goods and services” the system has the potential to deliver is essential to this step. A matrix can be set up to facilitate the process of assigning determinants, threats and constraints to the particular strengths.

Table 6.2: An example of a section of the matrix used in assigning determinants, threats and constraints to the particular vital attributes of Nylsvley Nature Reserve.

Vital Attribute	Determinant	Threat	Constraint
A good information base.	History of involvement: academic, research, management.	Lack of support from funding agencies.	Reserve is a very small part of floodplain and catchment; lack of understanding of the system as a whole. Information is not in a user friendly format. Management does not have clear goals, and therefore does not demonstrate their information requirements.
It is an excellent breeding and staging site for nomadic aquatic birds.	Hydrological regime drives wetland processes, water quantity and quality. Grazing and fire regime on reserve influences breeding and other life history strategies.	Water resources development in catchment is a threat to the hydrological regime (water is scarce) - extraction is a high risk. Exotic plants in the catchment - alter water quantity (reduce runoff) and quality.	Management does not know how to, and have not, explicitly managed for birds.

Step 6: Formulate the high level objectives

Objectives are set to:

- Ensure the maintenance of the identified vital attributes and/or their determinants of the system being managed, and
- Overcome the constraints and threats to meeting the vision.
- Align with the corporate Balanced Scorecard (BSC). (This process is not dealt with in this manual.)

A hierarchical approach should be adopted to formulate a set of nested objectives of increasing rigour and achievability. Note that this is an iterative process of identifying,

Repeatedly cross reference the vision, principles, context and vital attributes with constraints and threats to set up statements of intent to ensure strengths are maintained by overcoming threats and constraints.

When eliciting objectives from more than one person ask each one to provide a written list of objectives, then move onto group discussion. This promotes thinking from every individual. If general discussion began immediately it would be easy for members to anchor on the first ideas.

Several devices, other than those mentioned above, can help stimulate formulation of objectives:

1. Drawing up a wish list.
2. Use of alternatives.
3. Identifying problems and shortcomings - articulate reasons for concern.
4. Identify consequences of existing objectives and management actions.
5. Use of different perspectives.

structuring and analysing objectives, and understanding how they relate to each other.

It is important to recognise that objectives at different levels in the objectives hierarchy would probably be used to direct operations at different levels in the institutional hierarchy.

Step 7: Prioritize the high level objectives

Prioritising objectives is both difficult and subtle. Use the vision, strengths, principles and context as a basis to prioritize the objectives. They provide the checks and balances. It is important to note that the priority may change according to the level of management personnel involved so try to involve a wide range. Do not use financial resources or manpower capacity to prioritise at this stage – otherwise you will lose the value of using the future desired state to take you forward. Only use these restraints when you have the whole hierarchy to evaluate.

NOTE: This is the end point of the first stakeholder planning meeting. Beyond this point setting objectives becomes very technical. It is best for staff to take the product of the first workshop and develop a full objectives hierarchy. Management will present this to stakeholders as described in Box 4 of Chapter 5.

Negotiation is an important tool. Not all the objectives will stand up to this process and there will be many perceptions of what is most important.

The preceding steps of the protocol have set a good foundation though. Use this information to give the checks and balances needed to rationally prioritize the objectives. Do not do it by vote as this often reduces decisions to gut feel or personal agendas.

One of the most useful devices for prioritising is simply to ask WHY? Why is A preferred to B? and to relate the answer to the vision, principles and vital attributes.

Step 8: Set lower level objectives

Construct an objectives hierarchy (Figure 6.2) by decomposing the higher level objectives set into component objectives (“sub-objectives”) of increasing focus, rigour and achievability. The final level represents acceptable, achievable and measurable objectives.

There is also a need to **prioritise these lower level objectives**. Different degrees of rigour can be given to the time frame of different priorities. An objective may have a low priority because other objectives have to be achieved first, not because it is less important. Future objectives may have low priority now, but will be given a time frame in which they will be revisited. One of the reasons for prioritising is to check for redundancy between objectives. Quite often one lower objective serves two higher level objectives, or needs minor modification to do so. The more these can be identified, the more duplication, or waste of effort, can be eliminated.

Use the same procedure as for formulating objectives (Step 6) to sub-divide objectives into smaller and smaller, more circumscribed units until the statement ceases to describe an intent and becomes one of “what must be done”. You have set the final objectives when clear statements of the temporal, spatial and resource limits have been identified and they are unequivocally achievable.

The most difficult task is to ensure that the smallest number of objectives is set to achieve a particular high level objective. Again, ask WHY? Why is this needed, why is it the best option? Remember, the purpose is to maintain vital attributes by overcoming constraints and threats. Also remember that one reason why you are conducting this exercise is to focus management on priority, achievable and measurable objectives. Therefore repeatedly check that the resources needed are available or potentially available.

Separate the objectives into Tourism, Building Cooperation, Biodiversity Conservation, Operations and Corporate Support (the 5 core components of park management). Make sure the biodiversity objectives are clearly stated in terms of biodiversity or ecosystem characteristics. Examples could be the desired species mix and population structure of plant or animal communities. A stated fire regime, for example, is not a biodiversity objective but a tool to achieve biodiversity objectives. It may therefore be more appropriately labelled an operations objective. An implemented fire regime is an “output” while the species mix or grass production it achieves is a biodiversity “outcome”.

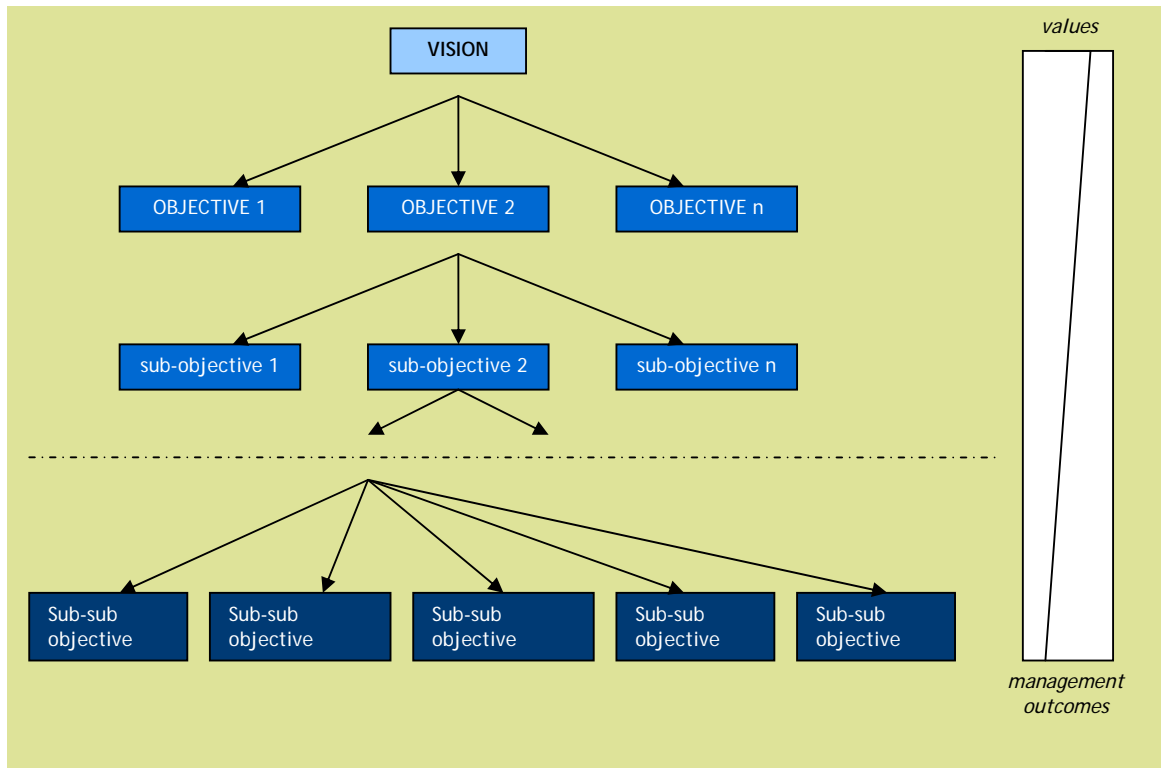


Figure 6.2: Hierarchy of objectives

Step 9: Setting TPCs as a decision support system

Once a desired state has been described in terms of a set of objectives, TPCs are set to mark the boundaries of this desired set of future conditions, in the form of limits of acceptable variation in particular indicators thought to best reflect the objectives, vital attributes and vision. TPCs are set based on the best available knowledge and expert opinion at the time. The management and monitoring process, as well as independent research, will over time enable us to update the knowledge on which TPCs are based.

Monitoring is based on the TPCs, which tell us what indicators to monitor, when and how often. Predictive modeling is also used to forecast potential future TPC breaches. When a TPC is breached, it prompts managers to investigate the cause, and then to decide on this basis if, and what, management action is needed (Figure 6.3).

To ensure that management action is taken when a TPC is about to be exceeded it is essential to define the management options in advance so as not to be caught off-guard. A common option would be to intensify research to try to understand the reasons for the exceedence,

however other options should be listed beforehand. This step must be included with each TPC definition.

The set of TPCs should be refined over time to the minimum set of thresholds needed to adequately reflect the desired state and the likely threats to the desired state over time. For example, the following TPCs are tabled for the biophysical objectives of Kruger National Park.:

- TPCs related to plant-animal dynamics – a suite of TPCs at different scales, relating to either compositional or structural and functional biodiversity elements for vegetation and herbivores separately.
- Fire TPCs – specified for fire intensity and fire scar pattern to provide wide variation over time, space and scale to the belief being that this will lead to a range of fire types, intensities and effects over space and time and that this will most likely best maintain biodiversity.
- TPCs for species of conservation concern – for species which are globally critically endangered or endangered.
- TPCs for degradation – degradation is reflected in a decrease in soil stability, infiltration and nutrient cycling indices.
- TPCs for heterogeneity – this integrated TPC is designed to track a loss, or potential loss of biodiversity through homogenisation of the ecosystem.
- TPCs for invasive alien biota - currently represent management or operational TPCs, including specific TPCs for bovine tuberculosis (BTB).
- TPCs for river geomorphological diversity, terrestrialisation and sedimentation.
- TPCs for river flow and quality.
- TPCs for river health, specified through fish assemblages.

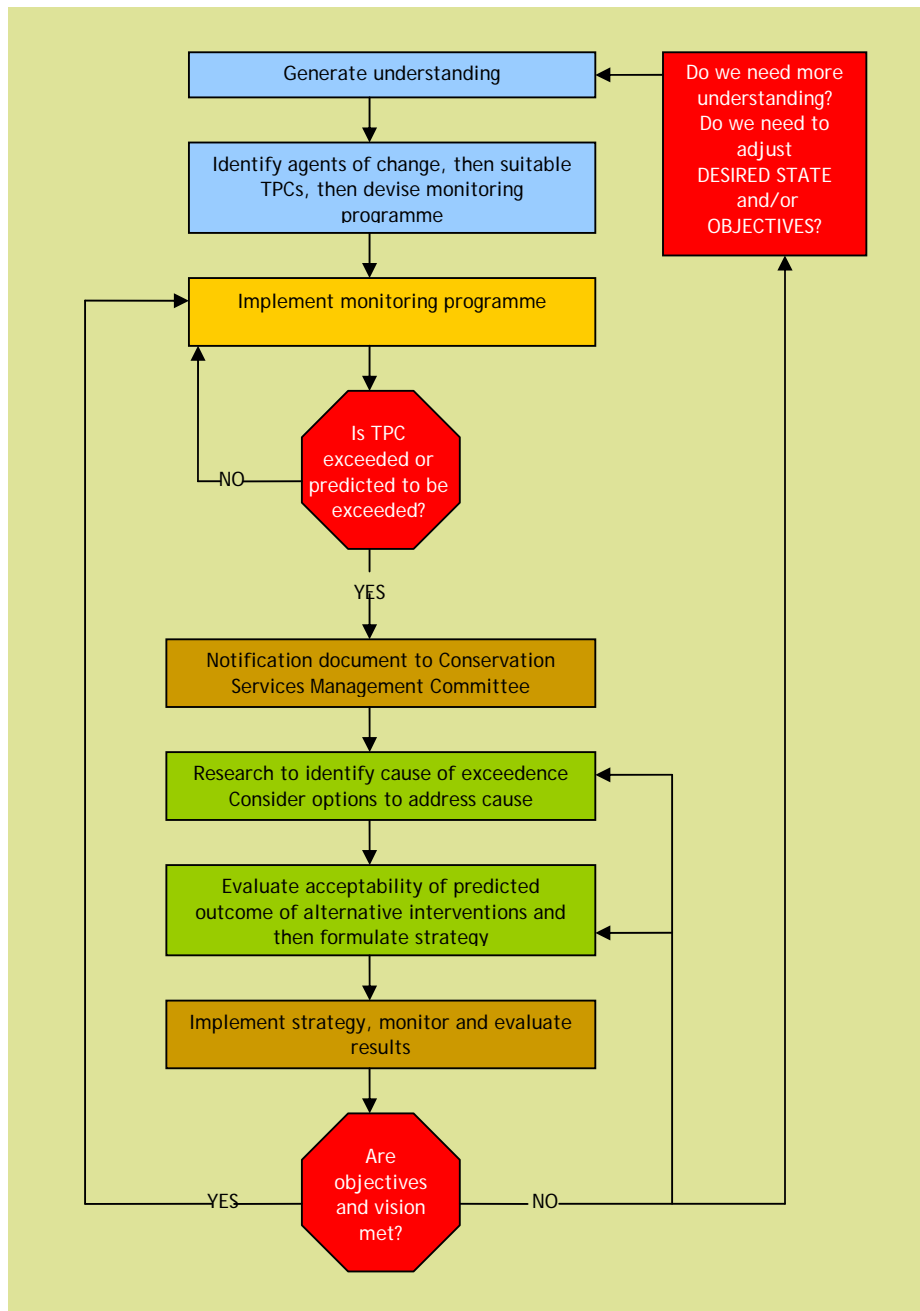


Figure 6.3: An adaptive management decision support system using TPCs

6.2 A spatial representation of the desired state

Park Zoning Plan based on the Conservation Development Framework

A zoning plan is used to guide development and protection of wilderness areas. The primary objective of a park zoning plan is to establish a coherent spatial framework in and around a park to guide and co-ordinate conservation, tourism and visitor experience initiatives. The rationale for standard zonation criteria is contained in the SANParks zonation policy (SANParks, 2006). A zoning plan plays an important role in minimizing conflicts between

different users of a park by separating potentially conflicting activities whilst ensuring that activities which do not conflict with the park's values and objectives can continue in appropriate areas. Ideally the zonation should be based on a full Conservation Development Framework. The CDF is underpinned by sensitivity-value analysis which is a consensus based multi-criteria spatial decision support tool that relies heavily on systematic conservation planning. In essence this process sets a spatial desired state for biodiversity and aesthetics in different zones within a park, that supports both biodiversity and tourism objectives of the park. Critical to the CDF (which is an explicit statement of spatial desired state, including biodiversity, tourism and management outcomes) is a biodiversity (and aesthetic/wildness) desired state couched in terms of limits of acceptable change for each zone.

Zoning decisions are based on a number of factors:

- Biodiversity sensitivity-values
- The stakeholder defined desired state
- Tourism opportunities
- Current research areas
- Heritage and other unique features
- Regional linkages
- Land claims
- Concessions
- Wilderness areas
- Adjacent land use
- The historic legacy of existing infrastructure.

Park expansion planning

A systematic conservation planning process for park expansion sets quantitative targets for biodiversity within a park (e.g. 'x' hectares of intact habitat 'y', which is sufficient to allow processes 'a', 'b', 'c' to work sufficiently; 'z' amount of linkage to other intact areas to allow 'd', 'e', 'f' ecological processes to operate; 'x' hectares of nationally threatened habitat, amount of area of suitable habitat for a threatened species assemblage) and also the targets required for non-biodiversity objectives (e.g. 'y' amount of lowland game viewing area), and then identifies the key areas which are required to meet the spatially explicit part of the objectives of a park. This in effect defines the gross extent of the "spatial desired state" for a park, in others words the geographic area needed in order to reach biodiversity, tourism and other targets.

SANParks' expansion and consolidation strategies are therefore aimed at the establishment and expansion of its national parks in order to represent the biodiversity, landscapes and associated heritage assets of South Africa. The country has set a target of ensuring that 8% of its terrestrial areas and 20% of its coastline are under protection by 2010.

The setting aside of large conservation areas is primarily designed to maintain essential ecological patterns and processes associated with preserving functioning examples of the country's different biomes, land- and seascapes, and cultural landscapes. Large size also enhances the aesthetic appeal of an area, especially its recreational and spiritual values. Furthermore, expansion of national parks remains necessary in the face of the consequences of climate change and the habitat needs of threatened and endangered species. Thus, for national parks to meet their essential requirement of conserving biodiversity, and meeting human needs, they must:

- Be large enough to support representative examples of one or more natural ecosystems
- Contribute to biodiversity and ecological processes and preserve special cultural feature
- Provide spiritual, scientific, educational and recreational opportunities
- Incorporate the needs and aspirations of local, national and international communities

- Reduce occupation and exploitation that are largely in direct threat to its main purpose

Land can be incorporated into a national park based upon any of the following principles:

- *The maintenance of ecological integrity*
- *An enhancement of biological representation*
- *An enhancement of biological diversity*
- *An improvement of economic viability*
- *A minimisation of threats*
- *An enhancement of management effectiveness*
- *To conserve and maintain cultural heritage sites particularly those with universal value*

Furthermore, the process of incorporating land into a national park will:

- *Be informed by national conservation priorities*
- *Be in congruence with the accepted objectives of the park*
- *Follow the best information and selection criteria and methodology possible*
- *Be done with due sensitivity and responsibility to potentially affected and vulnerable sections of society*

A range of incorporation mechanisms are employed in this strategy which include:

- The transfer of protected areas already managed by other state agencies or departments to the management of SANParks in order to be accorded the highest level of protection as national parks
- The purchase of privately owned land to expand and consolidate or to establish new national parks
- The contractual incorporation of privately and communally owned properties, and their proclamation as contractual national park, without a change in land ownership

Objectives for the 'Park interface zone'

Systematic planning is applied to the areas outside the park – the spatial aspects of external threats to biodiversity within the park are considered within planning for what is known as the "Park interface Zone". This aims to provide a sustainable land use mosaic around parks in order to sustain the long term persistence of biodiversity within them. This analysis supports SANParks' reaction to Environmental Impact Assessments, inputs to Spatial Development Frameworks, and other regional land use planning initiatives.

6.3 Policy and planning for different stages of Protected Area development

Though SAM is a generic management cycle that is used for all parks, different steps in the cycle may form the primary focus for different parks (Figure 6.4), depending on their stage of development (Figure 6.5) as protected areas, and depending on the distance between their current and desired states.

Parks that are defending a Desired State:

Focus on monitoring for breaches of TPCs and on refining TPCs through research and reflection.

For these parks the sequence of thinking and action could appear to follow a different sequence to the classic SAM cycle: Desired State → Set TPCs → Monitor TPC indicators → Select management options if TPC breached → Implement → Monitor → Review (management action, TPC validity, Desired State).

Parks that are still advancing toward a desired state:

Focus on setting a series of time-stepped interim objectives to progress toward the desired state, and identifying and implementing management interventions to achieve these.

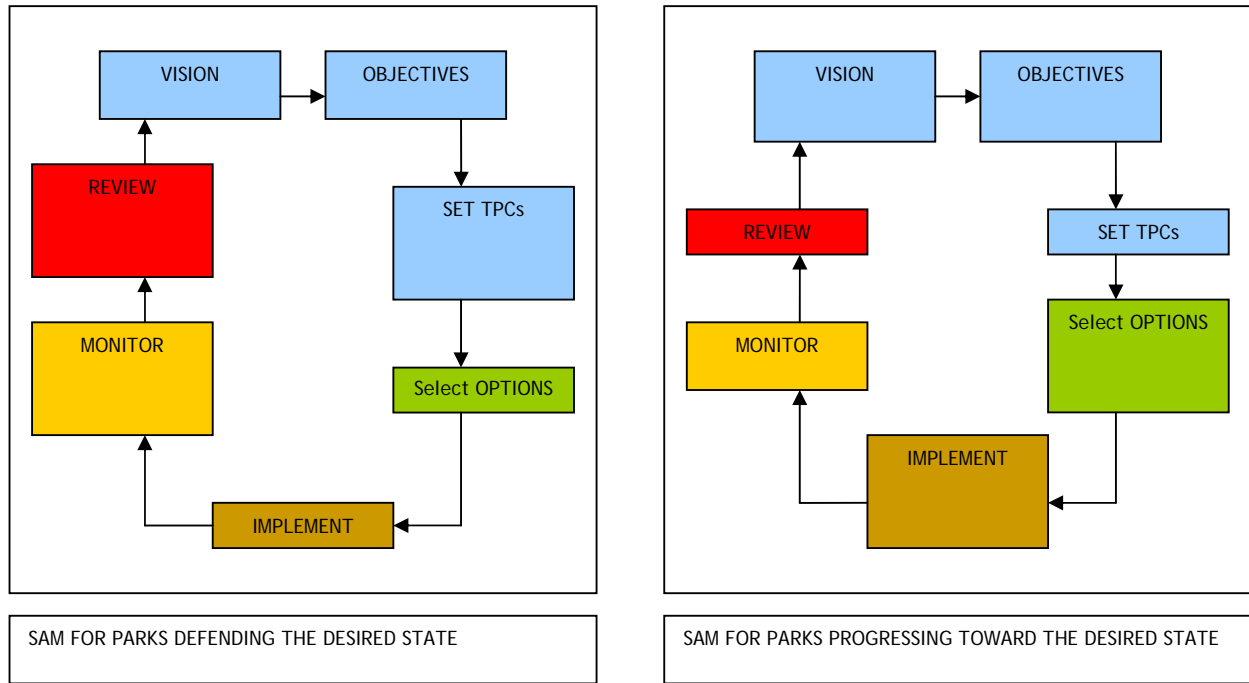


Figure 6.4: The SAM cycle for parks at different stages of development

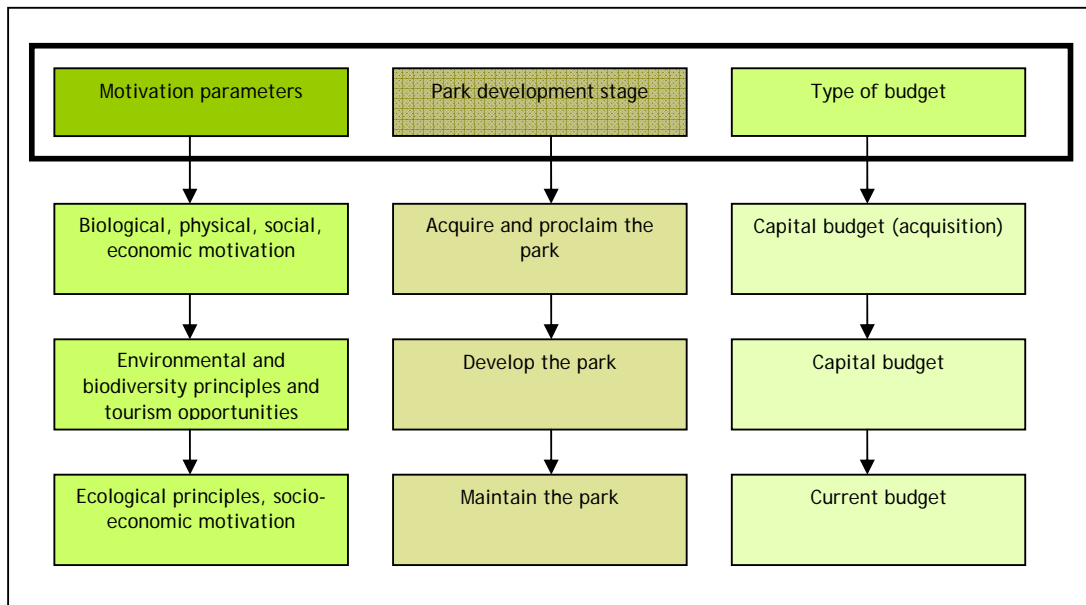


Figure 6.5: Different stages of protected area development

6.4 Review and reflection

Lack of informative and effective feedback, which should stimulate proper reflection by managers, is the commonest underlying cause of failure of adaptive management, and hence of reaching the desired outcomes we set for parks. The hallmark of adaptive management is ongoing learning, and this only results if users apply their minds to the adaptive cycle (Biggs and Rogers 2003). The following feedback mechanisms are needed:

- Feedback that the management action as decided upon and specified, is carried out as such
- Feedback whenever a TPC specifying the endpoints of any biodiversity objective is violated, or is credibly predicted to be violated in the future
- Feedback that the predicted outcome of a management intervention, in response to the exceedence of a TPC, is achieved, or what materialised instead in its place
- Feedback to SANParks Head Office of the overall performance of Marakele relative to its stated objectives
- Feedback as to whether organisational or societal acceptance of the consequence of an intervention is still, as agreed on previously, acceptable
- Feedback as to whether the monitoring programme and list of TPCs is parsimonious and effective
- Feedback as to whether overall park objectives need adjustment in the longer-term
- Feedback regarding, or at least latent preparation for, surprises

Evaluation should include (Figure 6.6):

- Evaluate both outputs (what were the results?) and outcomes (what did we achieve?)
- Did predicted consequences of management arise?
- Did consequences of management options indeed turn out to be acceptable to all stakeholders?
- Do the observed ecosystem and social changes meet the vision and objectives?

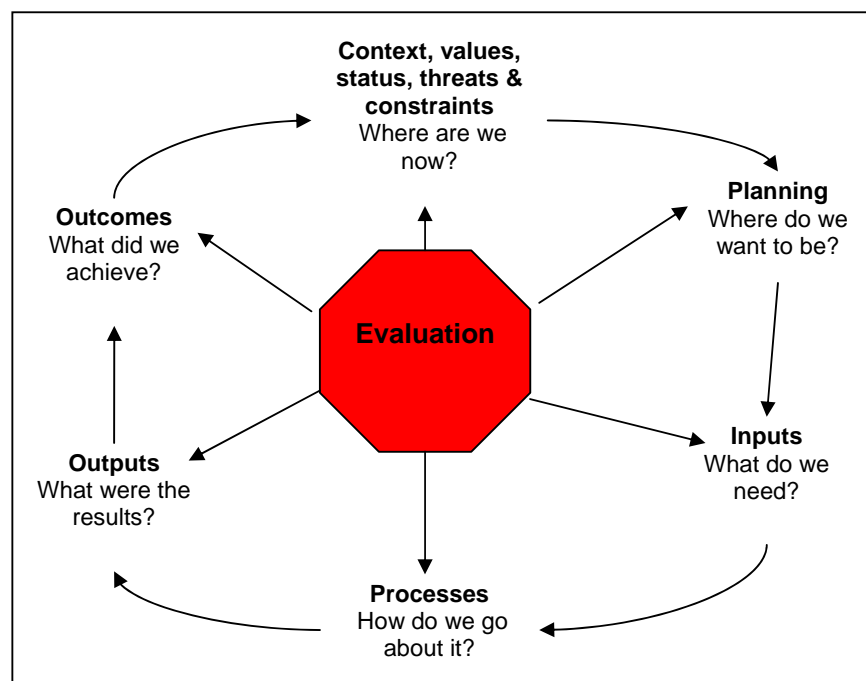


Figure 6.6: An example of an adaptive review process for protected area management

Measures of success: characteristics of a good plan

A successful, strategic, adaptive and participatory planning process will produce a management plan with the following attributes that should be evaluated at each review:

- It is **strategic** in that it begins with a clear mission statement/vision of the future and has clear, **innovative** objectives/targets for **improved outcomes**.
- It aims to achieve **explicit outcomes, across the five core components of management** (Conservation, Sustainable Tourism, Building Co-operation, Effective Operations, Corporate Support), within resource constraints.
- Ecosystem response to management actions is **predicted, monitored, evaluated and reviewed**.
- It is achievable and adaptive. It reinforces **corporate values** and underpins the **rationale for decisions**.
- It ensures that **short term (event) decisions**, or action, are made in terms of the **long term strategic purpose**, and thereby focuses decision making.
- It streamlines and focuses workload to **reduce crisis management**.
- Acknowledges surprises and **confronts uncertainty**.
- The **learning** process and **knowledge management** are explicit in the plan, central to operations and rewarded.
- It ensures that both individuals and institutions are **accountable, transparent and co-operative**.
- Responsibility for achieving objectives is clearly assigned and audited with **performance rewarded**.
- Has time frames for action and a built-in **revision cycle**.
- Is **legally unambiguous**.
- It **involves stakeholders** in decision making, and is formally endorsed by the institutional and governmental hierarchy.
- **Builds trust** and constituency between stakeholders through shared rationality and decision making.
- It has an **approved budget** and resource inventory.

FORMAT FOR A NATIONAL PARK MANAGEMENT PLAN

All national park management plans are required to follow the same broad format. This will not necessarily reflect the process or sequence of developing the content of the plan – as this may proceed slightly differently for different parks.

BOX 5: Outline of the contents and layout of a park management plan

BACKGROUND TO AND FORMULATION OF PARK DESIRED STATE

- The fundamental decision making environment (Vision, Context, Values and Operating Principles)
- Vital attributes underpinning the value proposition of the park (Determinants and evaluation of attributes)
- Setting the details of the Park desired state (Objectives Hierarchy, TPCs/conservation targets, Conservation Development Framework)

POLICIES AND PROGRAMMES TO ACHIEVE THE DESIRED STATE

- Biodiversity and heritage conservation
- Sustainable tourism
- Building cooperation
- Effective park management
- Corporate support

ADAPTIVE AND INTEGRATIVE STRATEGIES TO SUSTAIN THE DESIRED STATE INITIATIVE

- Key prioritisation, integration and sequencing issues
- Steps to operationalisation
- Key ongoing adaptive management and evaluation interventions

Points 1-5 make up ~10% of the full length of the report of ~100 pages for a large park, excluding appendices.

1. Title page with logos (we agreed to drop the word ‘strategic’ as qualifying park plans)
2. Authorisations and signatures (incl. ministerial) – 1 page
3. Executive summary (3-5 pp.)
4. Table of contents (~2 pp.)
5. List of acronyms used; glossary of definitions of selected words (~2pp.)

1. BACKGROUND TO & FORMULATION OF PARK DESIRED STATE (~35%)

This section emulates DEAT requirements for the adaptive planning cycle.

1.1 The fundamental decision-making environment

- 1.1.1 **Vision/Mission** (for impact, this could be placed before 6.1.2 & 6.1.3 but marked as inter-related; also mentioning briefly *public processes* leading to this.)
- 1.1.2 **Context.** Key details of all relevant administrative and legal frameworks; park and regional history; geographical, biodiversity, cultural and socio-economic descriptions. {One can derive a sub-classification here as needed 6.1.2.1 ... etc.}
- 1.1.3 **Values and operating principles** Includes all higher-level SANParks framing context (the SANParks mission and short reference to SANParks values, policies etc); Although there may be park-specific emphasis (e.g. park policies, briefly) this vital section may be fairly generic across SANParks national parks.

1.2 Vital attributes underpinning the value proposition of the Park

- 1.2.1 **The vital attributes**, listed using a V-STEEP approach, and their **determinants** (i.e. what strengthens and weakens each of these?). **Evaluation** of the vital attributes (reflecting prioritisation, grouping and interactions)

1.3 Setting the details of the Park desired state

- 1.3.1 **An objectives hierarchy** for the park, based on vital attributes. As for the mission statement, this will reflect biophysical, economic and social desired states
- 1.3.2 **Thresholds of concern / exact conservation & other targets for the park**, reflecting the objectives hierarchy. In the biophysical domain, these will describe biodiversity outcomes as mandated by NEMA:PAA. In the environmental management (implying compliance), social, economic, institutional and other domains, existing standards (such as hospitality standards) should be specified. Several of these (even some of the biophysical ones) will be generic across parks.
- 1.3.3 **Conservation Development Framework**. This acts as a central tool for later zonation; and for balancing tourism/development cf. biodiversity needs

2. POLICIES AND PROGRAMMES TO ACHIEVE THE DESIRED STATE (~45%)

These will often be close to the normal content of conventional management plans. However, because these will now be *strictly guided by* the objectives and TPCs/CDF in the desired state specified above, some may be added, deleted or differently emphasized. Also, the linkages to objectives should be explicit. The programs are divided into five core components and typical headings will be:

2.1 Biodiversity and heritage conservation

Zonation programme
Park expansion Programme
Transfrontier Programme
Bioregional Programme
Sustainable/Natural Resource Use Programme
Alien Species Programme
Herbivore Management Programme including Elephant Management Programme
Problem Animal Programme
Rare Species Programme
River Wetland and Groundwater Programme
Atmospheric change programme
Fire Programme
Erosion Control Programme
Cultural Resource Programme ... etc.

2.2 Sustainable tourism

Tourism Programme/ Commercial Development Programme ... etc.

2.3 Building cooperation

Co-operative Governance/Community Participation Programme
Environmental Interpretation Programme
Constituency Building Programme ... etc.

2.4 Effective park management

Environmental Management Programme (includes waste, energy, water, NEMA compliance)
Security and Safety Programme
Infrastructure Programme

Malaria Control Programme
Staff Capacity Building Programme ... etc

2.5 Corporate support

Institutional Development and Administration Programme
Financial Sustainability Programme
HIV/AIDS Programme ... etc

Programmes can normally have research, development (including policy development), information technology, management and monitoring components, the latter normally to check that TPCs defining the desired state are being met. Parks should have reasonable freedom (i.e. be allowed some flair) to group and arrange the headings in the list above the way that makes most sense for them, reflecting them as such in their management plans. Appropriate detail from policy, as relevant to particular programmes, should be freely referred to under programmes, and if policy is deficient, policy development can be included as a program deliverable or prerequisite. Sometimes, putative policy guidelines can be stated as assumptions, until further formal policy is in place. Programmes should have broad resource specifications and timelines to guide further detailed projectising which will invariably follow.

3. ADAPTIVE AND INTEGRATIVE STRATEGIES TO SUSTAIN THE DESIRED STATE INITIATIVE (~10%)

With the emphasis on adaptive management and on holism, an explicit concluding section with the following components is recommended:

3.1 Key Prioritisation, Integration and Sequencing Issues

This section should help unite, sequence and cross-link programmes. It should emphasise priorities which should already have become largely evident from the objectives-setting exercise.

3.2 Steps to operationalisation

This section will outline ways in which the above programmes will now be turned into annual plans of operation, a process which should have been made as straightforward as possible from the way in which the plan above is formulated. However, a synthetic section giving the essence of this will be useful here, including embedment in key performance areas via the scorecard.

3.3 Key ongoing adaptive management and evaluation interventions

This section should highlight, both generically and for this park, which feedback loops regarding which issues are going to be crucial in supporting reporting, adaptation and learning. This section should assist managers in meeting requirements of the adaptive management cycle and the adaptive evaluation cycle as per DEAT submission – indeed this is what DEAT is likely (along with the adaptive planning cycle, see 6 above) to be checking under the Protected Areas Act. Managers and stakeholders should be encouraged to practice reflection, and hence leverage the potential learning offered, in a structured way. For instance, users should be encouraged to use the State of Biodiversity Reports as constructively as possible, and to continually self-audit their performance in terms of TPCs etc. The section should include scheduling for anticipated reporting to various levels, making this streamlined and meaningful, and will necessarily give attention to levels of achievement of the desired state. It should thus also refer to departmental and other performance appraisals, and to the review cycles for the plan itself.

4. APPENDICES

REFERENCES

- Biggs HC and Rogers KH (2003).** An adaptive system to link science, monitoring and management in practice. pp. 59-80. *In: Du Toit JT, Rogers, KH and Biggs HC (eds) The Kruger Experience. Ecology and Management of Savanna Heterogeneity.* Washington. Island Press.
- Holling CS (1978).** *Adaptive environmental assessment and management.* John Wiley. London.
- Keeney RL (1992).** Value-focused thinking: A pathway to creative decision making. Harvard University Press. Cambridge.
- Levin S (1999).** Fragile dominion: complexity and the commons. Helix Books. Reading.
- Margules CR and Pressey RL (2000).** Systematic conservation planning. *Nature* 405 : 243 – 253.
- Meffe GK, Nielson LA, Knight RL and Schenborn DA (2002).** *Ecosystem management: Adaptive community-based conservation.* Island Press. Washington
- Noss RF (1990).** Indicators for monitoring biodiversity: a hierarchical approach. *Conservation Biology* 4 : 355 – 364.
- Rogers K and Bestbier R (1997).** *Development of a protocol for the definition of the desired state of riverine systems in South Africa.* Department of Environmental Affairs and Tourism. Pretoria.
- Salafsky N, Margoluis R and Redford K (2001).** Adaptive Management: A Tool for Conservation Practitioners. Biodiversity Support Program. Washington.
- Walters CJ (1986).** *Adaptive Management of Renewable Resources.* MacMillan Press. New York.
- Walters CJ & Holling CS (1990).** Large-scale management experiments and learning by doing. *Ecology* 71 : 53 – 74

APPENDIX 1

Adaptive Planning for Marakele National Park Management Plan First Public Participation Meeting

10 May 2006

Transcript of meeting for comment by stakeholders

Facilitator: Prof Kevin Rogers
University of the Witwatersrand

The facilitator introduced the Adaptive Planning Process as stipulated by Department of Environmental Affairs and Tourism norms and standards for National Protected Area management. He explained how this process would provide the first round of information on stakeholders' perspectives on a desired future state for Marakele National Park. SANParks staff would use this information to draft objectives and a management plan for Marakele that matches both stakeholder desires and SANParks' mandate. This first draft plan would be circulated to stakeholders and again workshopped with them before the end of July 2006. The plan would then be submitted to DEAT for approval. Once approved it would form the basis of management decision making for 5 years before being reviewed in accordance with the DEAT norms and standards. Annual reviews of performance will also be discussed with stakeholders, through their Park Forum, during the five year term of the management plan.

This document represents the outcome of the first stakeholder (public participation) meeting for Marakele National Park under the new Protected Areas and Biodiversity Acts. The section headings match those of the designated Adaptive Planning Process.

ADAPTIVE PLANNING FOR MARAKELE NATIONAL PARK

A vision for the private/public partnership

We are proud stakeholders in the Waterberg Biosphere Reserve (WBR), with Marakele National Park as a "jewel in the crown". WBR is a preferred adventure eco-tourism destination rooted in inclusive and honourable public/private partnerships. As partners we promote community participation and empowerment to balance economic and social development with conservation of our ecological and cultural heritage.

A vision for Marakele National Park (SANParks) in the partnership

We promote the wise, efficient and integrated management of the biodiversity of Marakele to maintain, or repair, a wilderness character, and associated benefits to regional economic, social and educational development.

□ Biodiversity refers to the species diversity, habitat (structural) diversity and diversity of ecosystem processes.

Context for the management of Marakele National Park

The range of legal, ecological, social and economic facts, conditions, causes and surroundings, that define the circumstances relevant to a problem provide the "context" for all decisions and are therefore important elements of any decision making environment.

- A regional Integrated Development Plan that is focussed on tourism, agriculture and mining.
- There is a good range of relevant legislation (e.g. Protected Areas Act, Biodiversity Act, National Environmental management Act, Water Act etc.) to guide decisions.
- Compatible adjacent land use and existing tourism infrastructure.
- The Waterberg Biosphere Reserve that is registered with IUCN.
- Many and varied existing contractual agreements between parties.

- The park ecosystem is currently fragmented by public roads and different land holdings.
- There are few poor quality internal roads that cater more for the 4x4 than sedan driver.
- A diversity of tourism infrastructure external to the park caters for the upper and lower income eco-tourist market. There is much less available for middle income tourists.
- A poor previously disadvantaged community contrasts with other stakeholders.
- The Park and Waterberg Biosphere Reserve present wilderness potential within easy reach of a major market, Gauteng.
- The fence bordering the park presents a “hard” boundary with potential private partners.

Values/ Principles to guide operations and decision making

Our values are the principles we use to evaluate the consequences of actions (or inaction), to propose and chose between alternative options and decisions. Values may be held by individuals, communities, organisations or even society. A group’s values must reflect the values of the individuals in that group.

- We have mutual respect for cultural, economic and environmental differences within the partnership.
- Recognising that ecosystems and biodiversity are complex, and that we will seldom have all the information we want to make decisions, we adopt a “learning by doing” approach to their management.
- We have a culture of honesty, cooperative sharing of expertise, and of empowerment and advancement of all parties.
- Clear definition of each stakeholder group’s expectations, and how we balance the distribution of costs and benefits, helps us avoid conflict.
- We keep our expectations and the distribution of costs and benefits within the partnership explicit, transparent and within biodiversity constraints.

Vital Attributes of the National Park and Greater Marakele

The few most important characteristics/properties of the system to be managed are its “vital attributes”. They may be may be technical, ecological, legal, historic, social or economic.

- There is a diversity of stakeholders, each of which brings knowledge and expertise to the partnership but SANParks is recognised as being able to provide particular skills in conservation and tourism.
- Marakele is an important element of the IUCN recognised Waterberg Biosphere Reserve and falls within a South African National Biodiversity Institute (SANBI) recognised biodiversity hotspot.
- Eco-tourism provides a long term economic option in the region. There is currently a good diversity of adventure tourism activities and infrastructure based on both cultural (pioneer country) and resource (wildlife and outdoor) markets.
- A mountain massif that provides a large altitudinal range, a wide-open-space visual aesthetic and associated biodiversity within a short distance. Many headwater streams arise within the park.
- Vital biodiversity attributes include the vulture breeding colonies, wild dogs (20% of the Southern African metapopulation is conserved in Marakele), cycads, and a very wide range of vegetation types from Kalahari bushveld in the lowlands, to fynbos elements on the mountain.
- The area is malaria and bilharzia free and located near a large regional market (Gauteng).

Determinants of Marakele vital attributes

A determinant is a factor or process that ensures the persistence of a vital attribute.

- A local topography that presents a spectacular and undeveloped massif.
- High ecological integrity of the diverse landscapes and vegetation types.
- A regional land use that is highly compatible with biodiversity and National Protected

- Area conservation.
- Good tourist flow from regional, national and international sources.
- The core conservation area is a declared National Park and is within a SANBI recognised biodiversity hot spot.

Threats to Marakele vital attributes and determinants

Threats are factors within, or outside, a partnership that undermine its values and inhibit the pursuit of the vision. Threats are also factors or processes that inhibit ecosystem determinants or vital attributes.

- There is currently a low level of trust among partners and lines of communication, accountability and decision making between partners are poor.
- There are currently no established “rules of the game” for a private/public partnership.
- There is no clear, agreed upon economic model for either the Marakele National Park, or Waterberg Biosphere Reserve, making it difficult to assess the economic viability of the park or potential tourism products.
- Development within Marakele, and its surroundings, is currently proceeding without proper guidelines. Regional guidelines are being developed but must still be implemented.
- Marakele does not currently seem to be delivering tourist expectations, particularly in respect of being a big five Park. Poor roads also contribute to tourist dissatisfaction.
- There is no clear strategy for conservation of Marakele itself, or for its role in the Greater Marakele Region. It is therefore difficult to; (1) judge the biodiversity constraints for development, (2) provide the basis for effective biodiversity management (including management of elephant and predator populations and alien species), and (3) define cost/benefit relationships of resource sharing among partners.
- The possible expansion of mining activities along the southern park boundary.

SANParks Management Objectives for Marakele

Objectives should be aimed at overcoming threats to ensure the persistence of vital attributes and/or their determinants. We can recognise objectives that promote the private/public partnership and those that relate to SANParks’ mandate to conserve biodiversity, and promote sustainable use of a National Protected Area.

Partnership objectives

- Build trust and promote equitable empowerment across the private/public partnership.
- Catalyse explicit understanding and decisions on the distribution of costs and benefits of resource sharing among partners under different management (especially boundary) scenarios.

Biodiversity objective

- Manage a national biodiversity hotspot to maintain its wilderness character and deliver agreed ecosystem goods and services to our constituency.

Infrastructure and development objectives

- Develop and apply an economic model for Marakele that is appropriate to its biodiversity characteristics and is explicit in its consideration of the distribution of costs and benefits within the private/public partnership.
- Develop and promote tourism products and infrastructure appropriate to this model and its biodiversity constraints.

Response to external threats objective

- Support partners in conserving the biodiversity and wilderness qualities of the Waterberg Biosphere Reserve while achieving our national biodiversity custodianship mandate for Marakele.

Close of meeting

As the meeting drew to a close the facilitator was asked what needed to be done to make sure that action was taken and progress was made. Kevin confirmed that he would send out a transcript of the meeting within a week and reiterated that SANParks would use this to draft a management plan for everyone's consideration. He also pointed out that if the result was to be a true private/public partnership it would be up to each and every partner to make sure it worked. It would have to be a team effort and we cannot expect one partner to take on the full burden of responsibility.

NB: The full Marakele management plan which SANParks staff developed in response to this one day adaptive planning workshop can be found on the SANParks website at http://www.sanparks.org/conservation/park_man/. It was welcomed by stakeholders at the second stakeholder meeting as a very constructive way forward for a participative private/public partnership.