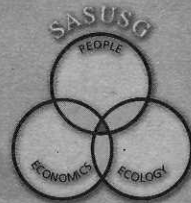


PRINCIPLES FOR
SUSTAINABLE USE

The Southern Africa Sustainable Use Specialist Group of the IUCN's Species Survival Commission



SUSTAINABILITY - THE PROBLEM

Humans have always used and managed the resources in the environment.

Traditionally the people of Southern Africa managed natural resources within social structures and cultural norms centred on communal ownership and the interest and welfare of a homogeneous group. The size of groups were small as were the scales of management. Institutions for management evolved within village-level governance structures.

The system applied at low population levels and low resource demand ratios and worked well under these conditions. It broke down from colonial period onwards with changes in scales of government away from the local level, rapid increase in population, increasing resource demands and new land use practices. Policy and legislation restricted rights of access and decision-making and promoted perverse economic incentives.

In the Southern African region -



Human populations are increasing and rely heavily on natural resources,

The situation is made worse by-

- Inappropriate resource tenure and ownership structures
- Distorted valuations of resources
- Incorrect allocation of the costs and benefits of maintaining and using natural resources.

All of which lead to -

- Unsustainable forms of land use and natural resource harvesting.

Which results in degenerating ecosystems with -

- declining productivity
- declining biodiversity
- reducing availability
- deteriorating aesthetic quality of landscapes

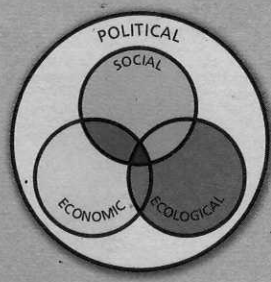
THE RESULT IS IMPOVERISHED PEOPLES AND ECOSYSTEMS

Incompatible value systems at local, national and international level and the pressures arising therefrom are denying Southern African people certain land use options. While biodiversity conservation issues have held the spotlight of international concern, unsustainable resource uses - exacerbated by market distortions - have escaped attention.

FOR DEVELOPMENT TO BE SUSTAINABLE, THESE ISSUES MUST BE ADDRESSED

ASSESSING SUSTAINABILITY

Sustainability cannot be assessed in narrow *ecological* terms. *Sustainability* must be considered in at least four realms: the *ecological, economic, political* and *social* arenas. In the diagram, only the black central triangle satisfies all conditions.



A DEFINITION

USE is the derivation of *benefit* from natural resources.

These benefits may be tangible or intangible and may be -

- political
- social or cultural
- economic or financial
- ecological (productivity, stability and biodiversity)

SUSTAINABLE USE is use which allows the continued derivation of such benefits

CAUTION! The Precautionary Principle

In consumptive use systems, offtakes should generally be tailored to reduce biological risk. However, this common sense statement should not be an endorsement for misapplication of the "precautionary principle". Injudicious use of the precautionary principle, especially when applied biocentrically and in ignorance of social, economic and political consequences, often acts against biodiversity conservation.

- Use, by creating incentives, may improve the status of the used populations.
- It follows that use can be a powerful conservation tool and the corollary is that non-use is a risky option - because it removes incentives.
- The precautionary principle should be applied in this sense: It is risky not to use resources - therefore we should use them.



The fate of the DRAY HORSE is a cautionary example. Once large powerful horses were no longer needed for pulling carts, they declined to the brink of extinction.

Is it possible to define sustainability?

How can sustainability be claimed for the future when it can only be assessed in retrospect?

It is the accepted view of science that it is impossible to predict anything with certainty. Essentially, the scientific method is willing to doubt any theory and any prediction based upon that theory. Science as a whole works by trial and error.

The Hypothesis is -

**Ho: "This regime of use is sustainable"
- and every time interval provides another test of the hypothesis**

This is *no different* from any laboratory test of (say) Newton's Laws. Sooner or later an Einstein will come along and it will fail the test. Ecological and socio-economic systems are more likely to fail such tests because they are so complex and poorly understood. **But they are not different in kind.**

Within defined limits, sustainable processes may be identified within a given time period. The entire concept of sustainability should be expanded to escape the narrow constraint imposed by an inherent demand for stability in ecological processes and the quest for rigid biological criteria by which to judge sustainability and, hence, prevent use.

THE MOST PRODUCTIVE APPROACH TO SUSTAINABLE DEVELOPMENT
IS TO OPTIMISE THE POLITICAL, SOCIAL, ECONOMIC AND ECOLOGICAL FACTORS
WHICH DETERMINE SUSTAINABILITY.

PRINCIPLES OF SUSTAINABLE USE

Use is most likely to be sustainable and natural resources most likely to be conserved when as many as possible of the following principles are addressed and satisfied.

TENURE

This is the most important factor affecting sustainability of use

Sustainable use is most likely when -

- rights of access are clearly defined and accepted
- the ability to enforce those rights exists
- the unit of management and accountability is small and homogenous

ECONOMICS

All species should have value. Attempts to destroy markets for wild species seldom results in the correct incentives for conservation. Sustainable use is most likely when

- the benefits derived from use are greater than costs of conserving the resource
- the return from sustainable harvesting equals or exceeds the return from alternative option - including "mining" the resource to realise its total capital value in the short term. Short term economic policies provide perverse incentives which mitigate against sustainable use
- there are well regulated legal markets with strong linkages to legal producers.

ECOLOGY

Use should be **sustainable** at the level of the ecosystem

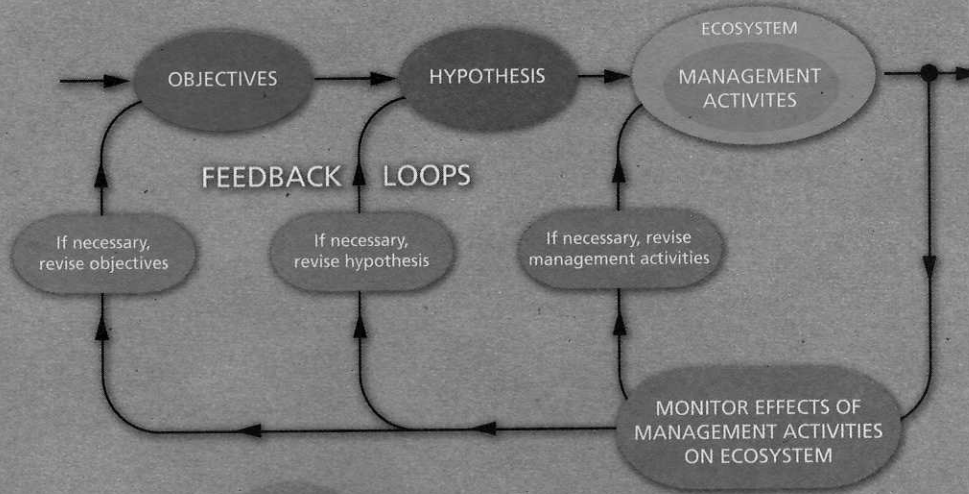
- conservation of ecosystems is of a higher priority than the stability of individual species populations
- change must be accepted - as opposed to attempts to maintain environments in a state of stability
- there is no valid distinction between consumptive and non-consumptive uses at the level of the ecosystem
- all species populations can be used: there is no arbitrary population size threshold below which use should be prohibited, if such use would be beneficial to the conservation of the species and the ecosystem
- the ultimate criterion of sustainability is the persistence of the species. In ecosystems characterised by large environmental fluctuations this may be the *only criterion*.

MANAGEMENT

The best technical approach to sustainable use of species lies in **ADAPTIVE MANAGEMENT** rather than in emphasis on *a priori* predictions. Adaptive management is simply a common sense system of learning by trial and error.

Adaptive management entails -

- a basic hypothesis about workings of the system to be managed
- a clear statement of management objectives
- a monitoring system to provide the information needed to modify the management system or objectives, or hypothesis if necessary.



SUSTAINABLE USE - MAKING DECISIONS

Sustainable development in Southern Africa must be based on optimum land use and be responsive to changing prices and values.

A common perception is that unsustainable exploitation (overuse) is the greatest threat to biological diversity. In terrestrial situations, the greater threat lies in natural systems being replaced with other land uses.

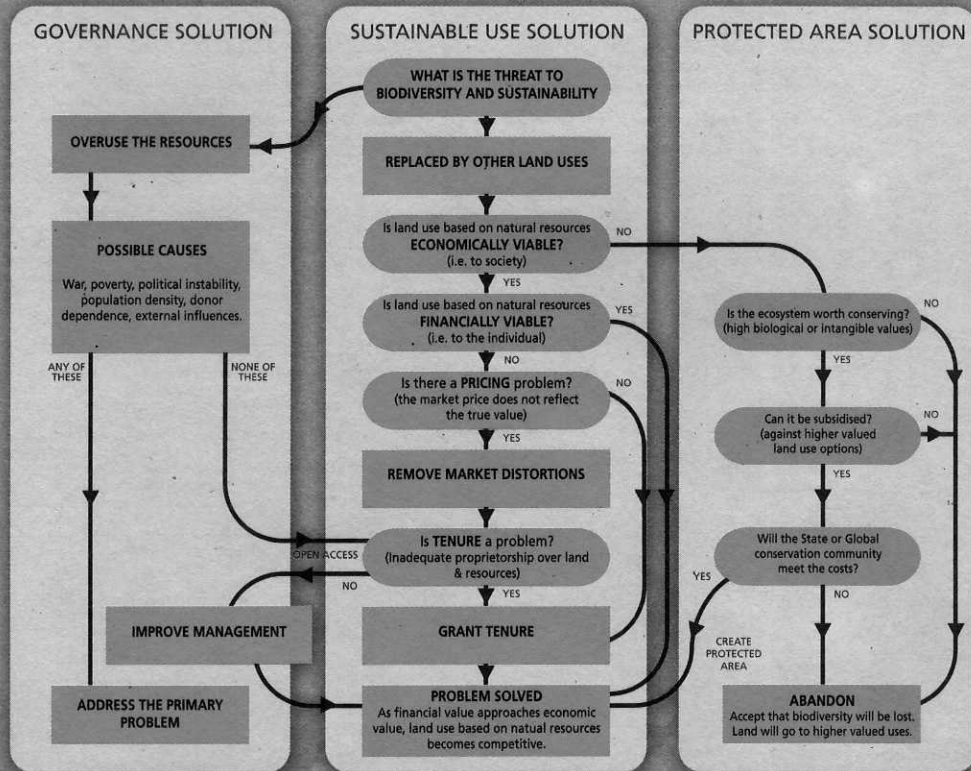
PRICING ISSUES

Decision-makers require information on the relative costs and benefits of options. The State's objective should be to internalise costs and benefits in any given situation and to regulate only where the inherent fugitive nature of a resource precludes this.

Intangible values (such as biological diversity, aesthetic scenery and future uses) are poorly valued in developing countries because of limited information and trade-offs with short-term tangibles like jobs, commodities and visible development.

Macro-economic policies (exchange rate, tax, subsidies to other sectors) should not disadvantage industry based on wildlife, forests and fisheries in comparison to other land uses (i.e. get the pricing right so that it effectively guides resource allocation).

International restrictions on trade in wildlife products have the effect of differentially taxing resources and may drive land into alternative uses.



Legislation, which implicitly devalues natural resources, should be reviewed critically. In particular laws, which assign priority to mining or agriculture, are more likely to cause the disappearance of wild resources than any effects of overexploitation.

THE MORE BIOLOGICAL DIVERSITY THAT CAN BE CONSERVED USING ECONOMIC INCENTIVES, THE MORE RESOURCES AVAILABLE TO CONSERVE NATURAL SYSTEMS WHICH ARE NOT ECONOMICALLY VIABLE.

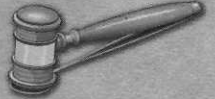
SUSTAINABLE USE SUSTAINABLE USE - Small is Beautiful MAKING DECISIONS

"Never globalise a problem if it can possibly be dealt with locally."

Garrett Hardin (1985). *Filters Against Folly*. Viking Penguin, Page 144

"After two generations of Big Government it is not clear that comprehensive control is either politically feasible or workable - even if it could be established"

Kay N. Lee (1993). *Greed, Scale Mismatch and Learning*. *Ecological Applications* 3(2): 560-564



In Africa, policy based on the Big Government syndrome has been the norm.
Small is Beautiful policies have yet to be accepted and implemented.

Unless governments devolve authority and responsibility over land and natural resources to communities, the threat to biological diversity and sustainable development is very real.



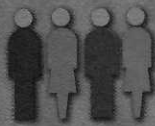
THE FOUNDATION OF **SMALL IS BEAUTIFUL** IS A MOSAIC OF COMMUNITIES EACH WITH EXTENSIVE RIGHTS OVER THEIR PARCELS OF LAND AND RESOURCES.



The Design of Local Community Institutions

"Defining the boundaries of a common property regime and specifying those authorised to use it are the first steps in organising for collective action."

E. Ostrom (1990), *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge University Press.



THE JURISDICTION -
defining the territory



THE RESOURCES



THE ENTITLEMENT



EMPOWERMENT

Many planners see devolution of authority as a step-by-step process where communities are granted power incrementally as they demonstrate the ability to manage.

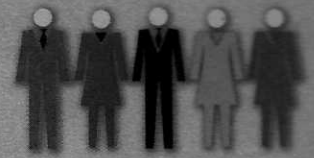
AUTHORITY IS A PRE-REQUISITE FOR RESPONSIBLE MANAGEMENT AND SHOULD NOT BE HELD OUT AS A REWARD FOR IT.



THE RESOURCE BASE

- The relationship of group size to the resource base is central
- Large groups with weak resource bases are unlikely to succeed
- Small dispersed groups with large valuable resource bases will have difficulty acting in cohesion

THE MEMBERSHIP



- The fewer members the better
- The closer they live together the better
- The more they interact on a daily basis the better



COHESION

An effective local institution must find grounds of sufficient common interest powerful enough to override those forces which divide the community into factions.

POLICY



Good policy requires the alignment of -



AUTHORITY ↔ RESPONSIBILITY ↔ INCENTIVES

Authority without Responsibility is meaningless or obstructive
Responsibility without Authority cannot be effective
Without Responsibility or Authority, there are no Incentives.

GOOD GOVERNANCE AT THE NATIONAL LEVEL IS THE KEY TO THE FUTURE OF **SMALL IS BEAUTIFUL**

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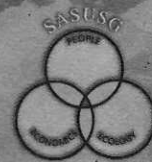
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SASUSG is part of the global Sustainable Use Specialist Group (SUSG) volunteer network under the Species Survival Commission (SSC). Founded in 1995 it now has a membership of about fifty professionals and practitioners in natural resource management.

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Cover Picture: Elephants at village in Tsiseb Conservancy, by Colin Nott. All background images by Edward Parker WWF.