

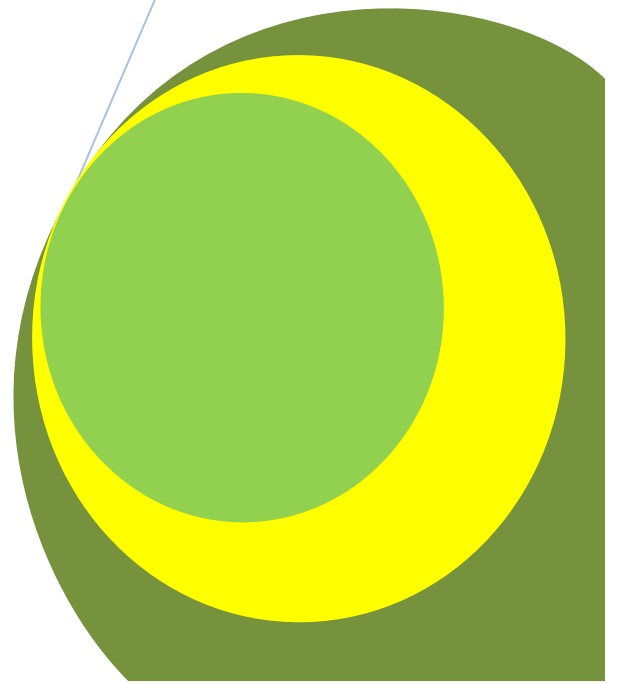
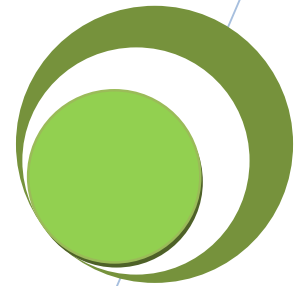
Greener Journal of Environmental Management and Public Safety

ISSN: 2354-2276

**Effectiveness of
Environmental Policy
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Management Principles
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Gonarezhou National
Park, Zimbabwe**

By

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Research Article

Effectiveness of Environmental Policy Instruments and Management Principles in Wildlife Resource Management: The Case of Mabalauta, Gonarezhou National Park, Zimbabwe

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Abstract

This study assessed the effectiveness of environmental policy instruments and management principles at Mabalauta Gonarezhou National Park in regulating the use and management of wildlife resources. The Story Telling Approach (STA) was used to determine the environmental policy history and implementation strategies. Focus group discussions, group lecture, observations, key informant interviews and a questionnaire survey were used to determine the policy instruments and management principles in use. Effectiveness was assessed through the evaluation of implementation methodologies and discernible outcomes of implemented policy instruments and management principles. The study established that non economic, economic and property rights policy instruments have collaboratively contributed to the effective regulation of use and management of wildlife resources. The user-pays principle is the most widely used principle, which has managed to contribute to resource sustainability. However, effectiveness of instruments and management principles was discovered to be mostly dependent on resource availability. Lack of financial resources has weakened implementation, monitoring and evaluation of policy instruments and management principles.

Key words: Environmental Policy, Economic instruments, non-economic instruments, use rights, wildlife resources.

Introduction

Resource planning and development with regard to wildlife management revolve around the arrangements for the protection, conservation and sustainable use of any wild plant or animal within a given area (Mbote, 2005). Environmental policy instruments and management principles are central to these arrangements. In Southern Africa, wildlife laws and policies offer few or no incentives to the custodians of biodiversity and thus provide limited tools for achieving the broader goals of conservation and promotion of sustainable development and equitable sharing of the resulting benefits. The general approach is to provide for protection and management of wildlife resources through constitutional provisions in Framework Environmental legislation and specific sectoral legislation. The legislation usually takes the command and control approach entailing heavy presence of the government to ensure compliance with the set standards. Indeed, conservation agencies have remained paramilitary and uniformed with a sizeable amount of their budgets devoted to law enforcement (Odhiambo, 1996; Mbote, 2005).

In southern Africa environmental policy is usually discussed with reference to the broader debates of sustainable development, goals and practices. Quite often, effective environmental management is precluded by the absence of clear and co-ordinated institutional policy and legislative frameworks for delivery at a national level. The various institutions involved in environment related activities have poorly defined roles, are weak and mostly lack capacity in terms of both quality and quantity of human resources vested with environmental responsibilities. Consequently, environmental policy tends to be fragmented, poorly co-ordinated and characterized by weak implementation and ultimately policy failure (Clark, 2002; Tevera, 2007).

A combination of institutional, market and policy failures results in the underpricing of scarce natural resources and environmental assets, which in turn translates into an underpricing of resource based and environment intensive goods and services (Tevera, 2007). Institutional failures such as the absence of secure property rights, market failures such as environmental externalities, and policy failures such as distortionary subsidies, drive a wedge between the private and social costs of production and consumption activities. As a direct result, producers and consumers of products and services do not receive the correct signals about the true scarcity of resources they deplete or the cost of environmental damage they cause. This leads to over-production

and over-consumption of commodities that are resource-depleting and environment-polluting, and underproduction and under-consumption of commodities that are resource-saving and environment-friendly.

Thus, the emerging pattern of economic growth and the structure of the economy is one that undermines its own resource base, and is ultimately unsustainable.

Ideal environmental policy formulation requires a holistic approach which ensures that policies are developed through participation at various levels by the beneficiary populations, e.g. the general public, government and non-governmental agencies, industrial organisations, various commodity organisations such as farmers' unions and workers' unions. At the national level, consultation with a wide range of interest groups will be necessary in order to gauge the impact of any policy initiative. Also, attention should be paid to environmental policies and the potential areas of conflict.

It is at the micro- or local level that participation is critical. There are four key requirements for successful participation at the local level. First, local authorities should be representatives of the people and accountable to them. Second, they should have a clearly defined legal status. Third, they should have adequate powers, commensurate with their responsibilities and distinct from those of other agencies. Fourth, these powers should include a significant degree of autonomy in raising and managing the financial resources of local authorities. Finally, any environmental policy intervention must be founded on a good understanding of the social and cultural forces at work among the population to be affected. Many of these forces will be specific to a particular region and locality. Consultation with a wide range of interest groups will be necessary in order to gauge the impact of any policy initiative.

Social and cultural factors are not neutral elements in the development of environmental policy. Institutions should not be seen as oppressive by the people whose behaviour they seek to regulate. The first task of the policy maker, in any case, is to consider how environment related bodies can bridge the gap between the traditional and modern forces in African society. To be effective in natural resources and environmental management, organisations must be representatively and appropriately structured. Their proposed programmes must be subjected to broad consultation among all stakeholders; they must take account of relevant social, cultural and economic constraints and must be enforceable.

Also, attention should be paid to the environmental policies and their potential areas of conflict. Frequently, attitudes to national authorities were formed during the colonial period when the application of such measures was often authoritarian and heavy-handed. In many cases they did not conform to resource users' perceptions of their interest and hence were often ignored or subverted. Suspicion of authority remains a hurdle for policy makers in many African countries. Potential areas of conflict include those between farmers and pastoralists over land rights. The sectional interests of various stakeholders also need to be considered.

A plethora of environmental policy instruments including economic, non economic and user rights are used across institutions and organisations in Zimbabwe to ensure sustainable utilisation and effective management of natural resources. However, a few if not none of them has been reviewed to assess its effectiveness in achieving the intended goal of protecting the natural resources for sustainability purposes. This study offers an assessment of policy instruments and management principles at one of the greatest national conservation areas. This would pave way for either policy revision or strengthening in order to achieve the goal of sustainability. The vision of Gonarezhou National Park is to become the world leader in sustainable natural resources (particularly wildlife) management and conservation. It aims to ensure that the current generation benefits from the current natural resources endowments without compromising the ability of future generations to benefit from the same resources. To enable the attainment of the stated vision and goal, there is need to make use of environmental policy instruments and management principles that help to regulate the unsustainable exploitation of natural resources.

Materials and Methods

Study area

The study was carried out in the southern part of Gonarezhou National Park (GNP), Mabalauta (figure 1).

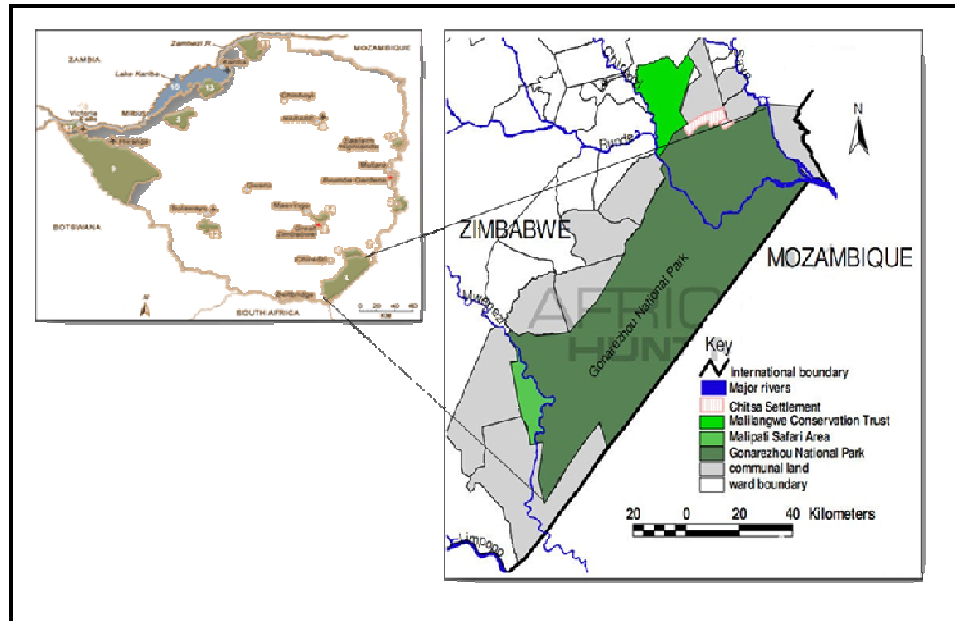


Figure 1: Gonarezhou national Park

The Park is situated in the South-eastern low veld corner of Zimbabwe, south of Chimanimani. Gonarezhou is Zimbabwe's second largest game reserve, after Hwange National Park. It borders Mozambique's wildlife reserves and South Africa's Kruger National Park. Mabalauta occupies two fifths of the Park. The area is characterised by low relief, with altitude ranging from 162 m to 578 m above sea level.

Mean annual precipitation of the area (1972–2005) is 466.56 mm, and has varied between 92.3 mm in 1992 and 1114.6 mm in 2000 (Gandiwa, 2006). Much of the rainfall falls between November and March. Droughts are a characteristic of the area, and the most recent severe drought occurred in 1991/92 (DNPWLM, 1998). Mean monthly maximum temperature ranges from 25.9°C in July to 36°C in January, with mean monthly minimum temperature ranging from 9°C in June to 24°C in January.

The Story Telling Approach (STA).

Knowledgeable and experienced staff was asked to tell stories on the evolution and general history of environmental policy instruments and management regimes at the park. It is understood that story telling captures some information that would otherwise have been left out in a formal guided interview or a questionnaire survey. From the stories related, important policy and management issues were extracted and synthesized.

Key informant interviews

Interviews with the key informants such as the senior ranger and the manager were used to understand the micro-environmental policy instruments used at the park. The knowledge and experience of the key informants were key in understanding which policy instruments and management principles were effective. This also facilitated comprehension of problems faced at policy implementation.

Questionnaire surveys

The study involved the use of a self-administered questionnaire survey to get information from employees at the park. A predesigned questionnaire was given to the rangers and senior ranger to fill in. There was keenness in participating in the survey. The questionnaires were collected for data analysis.

Group Lecture approach

A group lecture was arranged to create an interactive session to gain understanding of environmental policy issues and management efforts around the national park. The lecture was provided by the senior ranger and the manager at the park. A question and answer session provided an opportunity to understand in detail the effectiveness of the policies used at the park.

Results and discussions

The key drivers of natural resources degradation in Mabalauta, Gonarezhou National Park are human activities such as wildlife poaching, overgrazing, forest resources exploitation and natural hazards such as droughts and floods which are thought to be the offshoots of climatic changes. In addition, defoliation resulting from browsing by the Elephants (*loxodonta Africana*) animal species, whose population is predicted to have exceeded the carrying capacity of the park, is another cause for concern.

The need to protect the natural resources from these threats has resulted in the formulation and implementation of environmental policy instruments and management principles which were either tailor made for the National park or designed at national and international level. These instruments include economic, non economic and property rights whilst the key environmental management principle used is the user pays principle.

Economic Instruments

Tevera (2007) noted that many governments in the region are turning increasingly to policy instruments that directly modify the prices paid by natural resources users. These instruments include user fees, fines, surcharges and subsidies taxes, import tariffs and export taxes, the exchange rate and other policies which increase or decrease prices in the market place. Environmental policy economic instruments cover a wide range of areas such as air quality, traffic, energy conservation, land use and sustainable waste management

Economic instruments are used to regulate the use of natural resources at the park. They are in the form of fines, licenses and user charges. Heavy and deterrent fines are used against poachers. For example, a fine of \$US120 000 is paid for poaching a rhino and USD50 000 for killing an elephant. Both local and foreign poachers are deterred by these fines and this helps to prevent wanton killing of animals in the park. However, the fines for killing other small animals like the antelopes are too low and unprohibitive. This has rendered the implementation of the policy instrument ineffective with regards to the management of small wild animal species. This has resulted in increased number of cases of local poachers targeting small animal species.

However, it was highlighted that the prohibitive fines are meant to protect the most valued and extinction prone species. Economic instruments raise large amounts of revenue that can be spent either on public goods that improve environmental quality or can be used to reduce distortionary taxes such as income taxes, which reduce the incentive for work, or sale taxes which distort consumption decisions.

Permits or licenses are another type of economic instruments used at the park. These are meant to regulate the use of natural forests and aquatic resources by local people for medicinal and other purposes. Permits are given to Zimbabwe National Traditional Healers Association (ZINATHA) certified traditional healers and other approved herbalists to exploit natural forests for medicinal and related purposes. The permitted users will do so under the watchful eyes of the park authorities. This instrument has successfully reduced the number of people having access to forest resources thereby reducing the chances of overexploitation of targeted species.

User charges are also used as an instrument for regulating use of natural resources in the Mabalauta section of Gonarezhou National Park. An entry fee is paid in cash on arrival. By December 2012, a fee of USD5.00 was charged per individual visitor. Camping fees which is charged per night is also paid for those who want to sleep over. The National Park also provides visitors with leisure and accommodation facilities such as lodges, chalets, cottages, caravan sites, camping sites and picnic areas at a fee. These charges prevent the problem of the 'tragedy of the commons' on the park's natural resources. They play a significant role in controlling the number of people, who may contribute to all kinds of environmental pollution which may affect breeding, movements and associations of wild fauna.

The rationale for price-based intervention is that producers and consumers modify their behavior in response to price changes, with relatively little need for monitoring and enforcement. In contrast to fixed standards, price based incentives are relatively impersonal and there is less risk of corruption. An advantage of price based incentives is that; their response can be anticipated through an analysis of underlying price elasticity, the amount of revenue from licences and user fees or expenditure can be predicted and planned for.

Non Economic Instruments

The Parks and Wildlife management Act is the most widely used command and control non economic instrument. The Act is viewed by Parks officials as a quintessential breakthrough for conservation because it changed the core philosophy of how people perceived wildlife. Under the Act, ownership of wildlife passed from the State to whoever owned the land the animal lived on. When the landowners (both communal and private) became custodians of the wildlife, a change in mindset occurred. People began to see their wildlife resources as an asset to be nurtured, ensuring their benefits continued into the future. Gradually, fence-breaking elephant and zebra are now not viewed as nuisances to be eradicated; herds of impala are no longer a quick, easy meal.

Within the Parks and Wildlife Act, various levels were defined at which state-owned land was to be protected and utilised. Gone is the old Game Department that issued hunting licences which, for a nominal fee,

allowed settlers to hunt wildlife in all areas but a few Game Reserves. Since 1975, the Act has been amended and refined, allowing the evolution of a dynamic wildlife-protection process. Communal areas harbouring significant wildlife resources or bordering National Parks were given Rural Council status and as a result CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) was born. CAMPFIRE has developed into an important conservation strategy, ensuring that significant financial earnings revert to rural communities for their benefit. This philosophy has been adopted on a Pan-African basis. This act has reduced animosity between the wildlife authorities and the local people. Knowing that the wildlife belongs to them, people get a sense of ownership and therefore help protect rather than destroy the wildlife resources.

The Act demarcates areas of wildlife and gives the Parks officials permission to shoot poachers found in the restricted areas that are considered to be of high economic value. The policy has managed to deter both commercial and non commercial hunters from harvesting wild animals. This has played a significant role in regulating animal populations in the park.

The Trapping of Animals (Control) Act (Chapter 20:21) is also another regulatory instrument used at the park. It provides for the control, restriction and regulation of the making, possession and use of certain traps for the purpose of trapping animals; to control the sale and disposal of certain animals. This act deters people from using methods that could wantonly kill animals by fining or imprisoning anyone found making, in possession of, or using the traps defined in various sections of the act. The absence of reported cases of trapped animals suggest that the instrument has significantly contributed in deterring hunters from using brutal measures to kill animals in the park.

Joint Operation Committee Meeting (JOC) was cited by the park officials as one of the most effective activity of managing natural resources in the park. Meetings are held by the police officers, army officers, Criminal Investigation Department (CID) and the game management to map ways of doing away with poaching syndicates. Such meetings are also done by officials from the transfrontier region so as to map ways for allowing free movement of animals across the national boundaries of the countries involved (Zimbabwe, South Africa and Mozambique). JOC meetings harmonise the conservation laws in these countries in these countries so that each of the members will have an equal chance of having these animals in their areas. For example the GPS notched Elephants were reported to have moved to South Africa and therefore are now under the custodian of South Africa.

Quota hunting is also used in managing wildlife. Controlled hunting is permitted in some areas of the Parks and Wildlife Estate. Hunting is controlled through a comprehensive quota system that allows for sustainable and non-destructive hunting. These areas are separate from Recreational Parks, National Parks and Sanctuaries, thereby reducing conflicting resource usage. There is a certain number of animal species which a person or community is allowed to kill per year. The number is determined by the species population as well as international agreements. For example the Convention on International Trade in Endangered Species (CITES) limits the number of elephants to be killed per year. Unfortunately for the park, the Elephant population continues to rise exceeding the environment's carrying capacity. The park, including the northern parts, has a carrying capacity of 5000 elephants but at present they are between 8000 and 10 000 elephants.

Non-economic instruments are the most favoured by the Parks authorities despite the fact that they are costly to monitor and difficult to enforce. Direct regulations impose additional costs on society and this makes them unpopular. Unfortunately, most regulations are not self-financing, so there is no budgetary advantage in strict monitoring and enforcement. With no material incentive to ensure compliance, many regulations remain ineffective and unenforced. Although these may be the most common instruments in environmental control, they are by no means the best or most efficient instruments. However, if effectively enforced, they are able to deliver greater certainty in environmental quality.

Property rights

Tevera (2007) noted that property rights are a bundle of rights which define the privileges, obligations and limitations governing the use of resources by individuals or groups. Environmental policy reforms will not provide sufficient or appropriate incentives for the sustainable management of natural resources unless the underlying system of property rights is well defined and secure. For market-based environmental instruments to operate efficiently, property rights must be well defined, exclusive, secure, transferable and enforceable. Violation of these conditions would result in resource owners getting diminished incentives for the efficient use of investment in, and sustainable management of environmental resources. Policies, which establish secure and exclusive rights of access to natural resources, are a pre-requisite for efficient management.

At Mabalauta, Gonarezhou National Park, these are in the form of CAMPFIRE villages, which act as buffer zones between the local communities and the national park. Should animals move from the national park into the CAMPFIRE villages then they belong to the community. Should the animals be sold then the proceeds are shared amongst the villagers, for example USD8500 will be shared amongst the community members from a single elephant hunt. The money can also be used to develop social infrastructure in the form of village schools, clinics, boreholes, roads and bridges.

Provision is also given to the local people to cut hay in the National park especially during the rainy season when the grass is still abundant instead of letting people graze their animals in the parks. This prevents the spread of diseases between wild and domesticated fauna. This has created some sense of ownership amongst local people and therefore prevents destruction as the people know that they are bound to benefit from the resources.

The key question that remains is what types and combinations of property rights and institutional arrangements are needed in order to achieve sustainable development, especially in the region where access to natural resources remains problematic and many resource utilization policies have had limited success. Some local people indicated that the CAMPFIRE project is not benefitting them and they resort to poaching wildlife and smuggling in their livestock for grazing.

Environmental management principles

The User Pays Principle (UPP) is a pricing approach based on the idea that the most efficient allocation of resources occurs when consumers pay the full cost of the goods that they consume and related services. The full cost includes the cost of losses for future generations. The principle supports the idea of horizontal equity, which states that those in similar wealth and income positions should be treated equally by the tax system. The basic idea is that those who do not use a service should not be obligated to pay for it. As long as the beneficiary aligns exactly with the user, the user pays principle works. Those who do not go to the national park are not obligated to pay for someone else to visit. The UPP principle is considered as fair and offers the prospect of achieving efficiency.

At Mabalauta, no services are given for free. Accommodation, game viewing, camping, hunting and related activities have an attached fee that will be used for other purposes to maintain resources status. This principle, together with some economic instruments avoids the problem of the 'tragedy of the commons' where there is free access to resources that will be overexploited by people.

Conclusion

We conclude that environmental policy instruments and management principles have significantly contributed to the effective management of wildlife resources at Mabalauta, Gonarezhou National Park. However, the challenge for the park is to identify and clearly define and adopt instruments that integrate environmental and economic policy and that are parsimonious in their use of scarce development and management resources; instruments that allow differential response by economic units and adjust flexibly to changing circumstances. Economic policy instruments are uniquely suited for the integration of environmental and economic policy and can be designed to advance sustainable development. Despite their many advantages, their potential to effectively manage resources is not well harnessed at the park mainly because the experience with economic instruments is very limited and they are much less used as incentives to alter behaviour. We have also realised that the User Pays Principle is contributing significantly to the management of resources. There is need to assess the applicability of other environmental management principles such as the polluter pays and intergenerational equity to come up with an integrated management system that holistically protects resources at the park.

Acknowledgements

Many thanks to Great Zimbabwe University, Department of Geography and Environmental Science for funding the trip to Gonarezhou National Park. I also thank students from the Department for assisting with the data collection process and attending group lectures conducted by management at the national parks.

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