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Review

Towards sustainable financing of protected areas: A brief overview of pertinent issues

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According to the International Union for the Conservation of Nature (IUCN) now known as the World Conservation Union (IUCN), a protected area refers to a clearly defined geographical space, recognised, dedicated and managed through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. The recognition of the role of protected areas in biodiversity conservation is manifested in several regional and international policies and legislation underscoring the need for financing of protected areas. These policies and legislation include the Convention on Biodiversity, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), World Heritage Convention and the Ramsar Convention on Wetlands. Most countries have ratified these conventions and consequently formulated national policies and legislation supporting biodiversity conservation and most are at implementation stage. However, protected areas are still not adequately funded regardless of their unique contribution to nature conservation. Challenges and opportunities in protected areas financing have been identified, conceptual frameworks for sustainable protected areas financing have been formulated and the various components that make a successful protected area are known.

Key words: Protected area, sustainable financing, tourism, international conventions, values, biodiversity, conservation, heritage.

INTRODUCTION

Conservation of biological diversity is one of the main elements of sustainable development, given that biodiversity is the basis of life on earth (Roques, 2002; IUCN, 1994, 1997, 2000: 2008; Hockings et al., 2006; Convention on Biological Diversity, 2008; Slaney et al., 2009). The current and potential role of protected areas in biodiversity conservation cannot be overemphasized. In addition to biodiversity conservation, protected areas provide goods and services that are categorized into direct benefits, indirect benefits and intermediated use services (such as tourism, recreation and ecosystem services) (Lawes et al., 2004; Dlamini, 2007; Dlamini and Geldenhuys, 2009). However, biodiversity is disappearing at alarming rate and this is a threat to species' survival on the planet (Crafter et al., 1997; Chipeta and Kowero, 2004; CBD, 2004a; Dlamini, 2007).

The realization of the role of protected areas in biodiversity conservation has resulted in several regional and international policies and legislation underscoring the need for financing of protected areas. Central to these policies and legislation is the Convention on Biodiversity, Convention on International Trade in Endangered

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Species of Wild Fauna and Flora (CITES), World Heritage Convention and the Ramsar Convention on Wetlands.

Many countries have ratified these conventions and national policies and legislation supporting biodiversity conservation have been formulated and developed, and most are under implementation.

However, protected areas are not adequately funded regardless of their unique contribution to nature conservation. As a result, there is an urgent and serious need for the development of innovative, diverse and sustainable financing mechanisms for protected areas.

The objective of this paper was to highlight the current issues, challenges and options towards sustainable financing of protected areas and in particular biodiversity conservation and sustainable tourism in protected areas (CDB, 2004a).

POLICIES AND LEGISLATION SUPPORTING PROTECTED AREAS' FUNDING

Several policies, strategies and agreements exist which substantiate the need for funding protected areas, nationally, regionally and internationally. Countries have ratified international conventions for protected areas and biodiversity conservation and are required to comply with stated provisions. The conventions require contracting parties to allocate funds to biodiversity conservation through the establishment of protected areas, development of botanical gardens, *in-situ* conservation, formulation and development of sustainable resource use guidelines, or any other appropriate local and national programmes (IUCN, 2000; CBD, 2004b, 2008; Emerton et al., 2006; Hockings et al., 2006; Dudley, 2008). Below are relevant international agreements.

International conventions

World heritage convention

The World Heritage Convention establishes the World Heritage Fund through which funds are deposited by State Parties. This fund is aimed at financing natural and cultural heritage sites at local, national, regional and international levels (CDB, 2004a, 2008; Hockings et al., 2006; Emerton et al., 2006; Dudley, 2008). State Parties are obliged to identify protection-worthy areas, declare protected areas, conserve and preserve natural and cultural heritage for present and future generations in a sustainable manner.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The CITES has called for review of existing financing mechanisms for ecosystems, genes and species of wild flora and fauna. This was upon realization that protected areas are the cornerstone of biodiversity conservation through in-situ and ex-situ conservation of plant and animal species. As a result protected areas provide an excellent platform for the implementation of the CITES. During COP 12, it was then noted that developing countries need external funding to boost national budgets for conservation of biodiversity at ecosystem, gene and species levels (CDB, 2004; Hockings et al., 2006; Emerton et al., 2006).

Ramsar Convention on Wetlands of International Importance (RAMSAR)

The Ramsar Convention has taken action towards funding of protected areas. The convention successfully established a fund for issuing grants for the conservation and sustainable use of wetland habitats and aquatic ecosystems. The fund specifically targeted developing countries and countries with economies in transition (CDB, 2004a; Hockings et al., 2006; Dudley, 2008).

The convention on biodiversity (CBD)

The Convention on Biological Diversity is the international framework for all programmes, sub-programmes and projects engaged in management, sustainable use, conservation and preservation of biodiversity at local, national, regional and international levels. This convention provides guidelines for the formulation and development of national biodiversity strategies and action plans, national biodiversity policies, national biodiversity acts and regional biodiversity strategies (such as the SADC Regional Biodiversity Strategy). Furthermore, the CBD established the Global Environment Facility (GEF) which serves as a financing mechanism for the implementation of the CDB commitments. The CBD also established the Forum on Financing Biodiversity which is a platform where financing institutions, governments, parties, development agencies, NGOs and other relevant stakeholders meet to share information on the latest developments on biodiversity conservation and sustainable use as well as financing mechanisms for biodiversity conservation (CDB, 2004a, 2008; Hockings et al., 2006).

USE VALUES AND NON-USE VALUES OF PROTECTED AREAS

According to McKenney and Sarker (1994), Brandon (1995), Bishop (1999), IIED (2003), Dlamini (2007), Rodríguez-Vicente and Marey-Perez (2009) and Mathey et al. (2009), the types of value for protected areas can be divided into use and non-use benefits which in turn can be sub-divided into direct, indirect, option, bequest and existence benefits.

Use values depict value derived from using or participating in an activity in the protected area. For example fishing and hunting fall under consumptive uses while bird watching and game viewing are under non-consumptive uses. In the former the protected area may be depleted while in the latter the protected area is not affected.

Non-use values are intangible such as peace and tranquillity of being in the protected area or nature reserve and health and well-being derived from decreased stress levels.

TOURISM IN PROTECTED AREAS

Brandon (1995), Lee and Middleton (2003), the CBD guidelines on biodiversity and tourism (CBD,), Dudley (2008), Secretariat of the Convention on Biological Diversity (2008), Zhang and Li (2005) and Schmidt-Soltan and Brockington (2007) identified a number of potential benefits of tourism in protected areas that include:

Category one: Natural capital is enhancedand Category two: Contribution to other livelihoods capitals and assets:

1. Enhance financial capital from income generation;
2. Improve social capital through the establishment of social networks around protected areas ;
3. Development of criteria and indicators for sustainable eco-tourism;
4. NTFPs trade for sustainable and transformed livelihoods;
5. Improve physical capital through road infrastructure;
6. Human capital is improved by education and training;
7. Enhance technological capital by use of information and communication technology;
8. Stabilizes political capital through transfrontier conservation; and
9. Sports and recreation is promoted.

However, Eagles (1995), Norris (1999), Eagles et al. (2002), Buckley (2003), Font et al. (2004), CBD (2004b 2008) and Dudley (2008) also reported that alongside this, there is a growing realisation that tourism can have a number of adverse impacts on protected areas, and that these need to be addressed. Adverse impacts include:

1. Encroachment or invading wildlife territories may affect feeding and breeding patterns;
2. Soil erosion and degradation; and
3. Environmental pollution from hazardous waste material.

Management of these impacts requires: (1) protected area managers to draw up visitor management policies and make sure that protected area staff follow the policy in order to reduce negative impacts; (2) taking measures against soil erosion and environmental pollution; and (3) participatory or multi-stakeholder planning for sustainable tourism in protected areas.

Dlamini (2010) compiled a set of criteria for sustainable tourism framework. For this framework, a set of issues were developed and details are given:

Issue 1: The role of protected areas in species, ecosystems, habitats, genes and species must be well understood and this has to be imparted to all levels of society, including local communities for them to appreciate the value of nature in tourism.

Issue 2: Protected areas managers must understand the uniqueness of each of the three levels of tourism and their effects on the natural environment. These being tourism, nature-based tourism and eco-tourism. Consequently this will enable a balance between economic, social and ecological/environmental stability in all operations of SNTC.

Issues 3: Participatory planning for protected area tourism (including policy, stakeholder involvement, conflict management, development and implementation of plans). The culture of multi-stakeholder participation in planning processes for protected is management must be fostered to create harmony and synergy between protected areas plans and other programmes running concurrent with nature conservation.

Issue 4: Project Design Documents (PDDs) should consider conformity of all projects to social, cultural, environmental, ecological, and financial and economic issues. This will strike a balance between ecological and economic sustainability and ensure sustainable tourism.

Issue 5: An elaborate and all-encompassing protected area risk trade-off documentation must be carried out in consideration of all risks associated with running tourism in protected areas. Mitigation plans need to be developed to enhance and ensure visitor safety at all times.

Issue 6: Developing systems for visitor management to avoid environmental pollution and degradation. This may include establishing designated areas for waste disposal and having clear environmental policies for SNTC protected areas that are given to visitors for their signature on entry into the protected areas.

Issues 7: The total value of protected areas in terms of direct benefits, indirect benefits and intermediate use services must be well captured and communicated to all relevant stakeholders so as to enable them to value protected areas and support them.

Issue 8: Protected area managers need to have a good understanding and knowledge of contemporary and innovative sustainable financing mechanisms for biodiversity and protected areas. These will include sources of funding or income generation at the site-level, as well as national, regional and international levels.

Issue 9: Sound Monitoring and Evaluation Plans and Indicator Tracking Tables. These plans should be linked the protected area strategic plans (i.e. objectives, outputs, outcomes, indicators, indicator definition, data collection methodology, frequency of data collection, means of verification, who is responsible, budget and other pertinent issues). Good monitoring and evaluation will lead to well formulated project re-designs at SNTC [Modified from Eagles (1995), Walpole and Goodwin (2001), WCPA (2002), Armstrong and Weiler (2002) and Eagles et al. (2002)].

These may be listed as follows:

1. Scientific understanding of protected areas;
2. Understanding nature-based tourism;
3. Planning tourism;
4. Sensitivity to socio-cultural, economic and environmental issues;
5. Managing challenges of tourism;
6. Visitor management;
7. Valuing protected areas;
8. Financing aspect of protected areas; and
9. Monitoring and evaluation.

CUSTOMERS IN PROTECTED AREAS

According to Eagles et al. (2002) and IUCN (2000), protected area customers are classified into of four categories as follows:

1) Neighbours and residents; 2) commercial customers (including visitors); 3) bio-regional customers; and 4) global customers.

The type of customers in a protected area may be determined by the management objectives, the range of services provided, including the geodiversity and biodiversity offered by the landscape. Other important determinants of the customer base include the organizational structure and institutional arrangements and the policy environment. It is most likely that rich biodiversity areas get a diverse set of customers. The same applies to protected areas with a broad spectrum of geodiversity. It is the duty of the protected area manager to conduct a market analysis to get to know which goods and services protected area customers prefer and endeavour to develop business plans to elaborate on the protected area customer base (IUCN, 2000, 2008; Dudley, 2008).

Different customers have varying preferences and it is imperative that the protected area manager avoids conflict between various customer types which may lead the protected area losing a certain segment of customers. For example bird watchers may be interrupted by hunters and vice versa. Compatibility among customers is as important to the success of a financial plan as it is to the effective management of the protected area (IUCN, 2000). Nonetheless, the customer base for each individual protected area is very variable and highly contextual (Bridgewater et al., 1996).

FINANCIAL PLANNING AND PROTECTED AREAS

Financial planning entails the determination of the funding requirements of a protected area and further identifies the sources of funding for short-term, medium-term, and long-term needs (Anderson, 2000; IUCN, 1994, 1997, 2000; Eagles *et al.,* 2002; IUCN, 2008).

Different sources of funding have varying characteristics, some are more reliable than others, some sources are easier to raise than others, and some can be used freely according to management priorities while others come with conditions. (Dharmaratne et al., 2000; IUCN, 2000; Hockings et al., 2006; CBD, 2008).

Gutman and Davidson (2007) and the IUCN (2000; 2008) presented a broad spectrum of funding sources for Protected areas ranging from international, regional, national to local level, and these are said to be highly effective in most Protected areas of the world and could be ideal for those Protected areas in Swaziland, such as those at the SNTC. Table 1 presents conventional sources while Table 2 shows traditional and innovative funding sources for biodiversity conservation.

Currently, budget allocations in most countries are tight due to many sectors (agriculture, health, education, environment, and so on) competing for meagre sums of money available. The result is that the proportion of public funding going into investment in protected areas is declining in many countries (Eagles, 1995; Eagles et al., 2002). In order to overcome the financial challenges, protected area managers have to generate revenue within and seek external funding to successfully carry out their mandate of nature conservation and preservation of cultural heritage (Hockings et al., 2000; IUCN, 1994, 2000, 2008; CBD, 2008).

Dlamini (2010) recommended a theoretical framework for sustainable financing of protected areas based on another model by Emerton et al. (2006). The recommended framework was made up of three thematic areas:

1. Making market-based charges for protected area goods and services;
2. Generating funding to encourage conservation

Table 1. Conventional Sources of funding for protected areas.

Category of funding source	Sub-categories/types of funding
(A) International sources of funding for protected areas	1. Multilateral banks 2. Global Environment Facility (GEF) 3. Bilateral development co-operation agencies 4. Foundations with an international remit 5. International non-governmental organizations with an international remit 6. Alternative financial mechanisms: Carbon offsets, Global levies, Innovative ways to use the Internet & Global environmental and cultural funds
(B) National-level mechanisms	1. Taxes, levies, surcharges and tax incentives 2. Tax deduction schemes 3. Grants from private foundations 4. National environmental funds 5. Debt swaps 6. National and provincial lotteries 7. Public-good service payments 8. Workplace donation schemes
(C) Site-level mechanisms	1. User fees 2. Cause-related marketing 3. Adoption programmes 4. Corporate donations 5. Individual donations 6. Planned giving 7. Site memberships and friends schemes

Source: IUCN (2000; 2008).

activities; and
3. Attracting and administering external inflows.

Charges linked to the use or provision of protected area products and facilities or engagement in biodiversity friendly behaviour are the driving forces of thematic pillars 1 and 2, while contributions motivated by broader social and personal policy, goals or principles are relevant to thematic area 3. Details of issues and elements under the three thematic areas are presented diagrammatically in Figure 1.

Case studies on sustainable financing instruments

Many case studies on protected areas financing are relevant to many countries of the world, and the most striking one is that of Anderson (2000) who presented four case studies on sustainable financing instruments and sustainable financing in practice from different countries. These instruments highlighted issues, challenges and policy responses which are relevant to sustainable financing of Protected Areas. All countries made significant policy reforms in order to strengthen financing of environmental services. These case studies dealt with self-financing of local environmental protection authorities, sustained financing for NGO management of a national park, blending financing instruments by way of an environment protection fund and developing an comprehensive programme of sustainable financing through a national environmental financing strategy. In all four cases policy reforms were central.

GOVERNANCE OF PROTECTED AREAS

The World Conservation Union distinguishes four broad categories of governance of protected areas, and these are described in detail by Dudley (2008):

A) Government managed protected areas.
B) Co-managed protected areas.
C) Private protected areas.
D) Community conserved areas.

Note that governance types describe the different types of management authority that can exist in protected areas and do not necessarily relate to ownership. For example the protected areas network of Swaziland comprises government managed protected areas and private pro-

Table 2. A Summary of Traditional and Innovative Financial Mechanisms for Biodiversity Conservation.

Local level financial mechanisms	
More traditional - Protected areas entrance and fees - Tourism related incomes - Local markets for sustainable rural products - Local NGO and charities - Local businesses good will investments	**More innovative** - Local markets for all type of ecosystem services (PES)
National level financial mechanisms	
More traditional - Government budgetary allocations - National tourism - National NGO fundraising and fund granting - National businesses good will investments	**More innovative** - Earmarking public revenues - Environmental tax reform - Reforming rural production subsidies - National level PES - Green lotteries - New good will fundraising instruments (internet based, rounds, up, etc) - Businesses/public/NGO partnerships - Businesses voluntary standards - National green markets - National markets for all type of ecosystem services (PES)
International level financial mechanisms	
More traditional - Bilateral aid - Multilateral aid - Debt-for Nature-Swaps - Development banks and agencies - GEF - International NGOs fundraising and fund granting - International foundations - International tourism - International businesses good will Investments	**More innovative** - Long term ODA commitments - Environment related taxes - Other international taxes - Reforms in the international monetary system - Green lotteries - New good will fundraising instruments (internet based, rounds, up, etc) - Businesses/public/NGO partnerships - Businesses voluntary standards - International green markets - International markets for all type of ecosystem services (PES)

Source: Adapted from Gutman and Davidson (2007).

tected areas, and the protected areas at the Swaziland National Trust Commission (SNTC) are currently managed as a public enterprise by a government parastatal (the SNTC).

CHALLENGES AND OPPORTUNITIES IN PROTECTED AREAS FINANCING

Protected areas are facing long-term financing difficulties, while on the other hand innovative mechanisms are being sought to provide options for long-term sustainability of funding towards nature conservation and cultural heritage.

Protected areas financing: Opportunities

Based on reports of Norris (1999), UNEP (1999), IUCN (2000), Emerton (2002), Emerton et al. (2006), Anderson (2000), WCPA (1999; 2002), Eagles et al. (2002), Gutman and Davidson (2007), CBD (2004b) and Font et al. (2004) various opportunities in sustainable financing of protected areas can be summarized into seven broad issues:

Issue 1: Role of national government

Since the management of protected areas in most countries is a national government responsibility, public

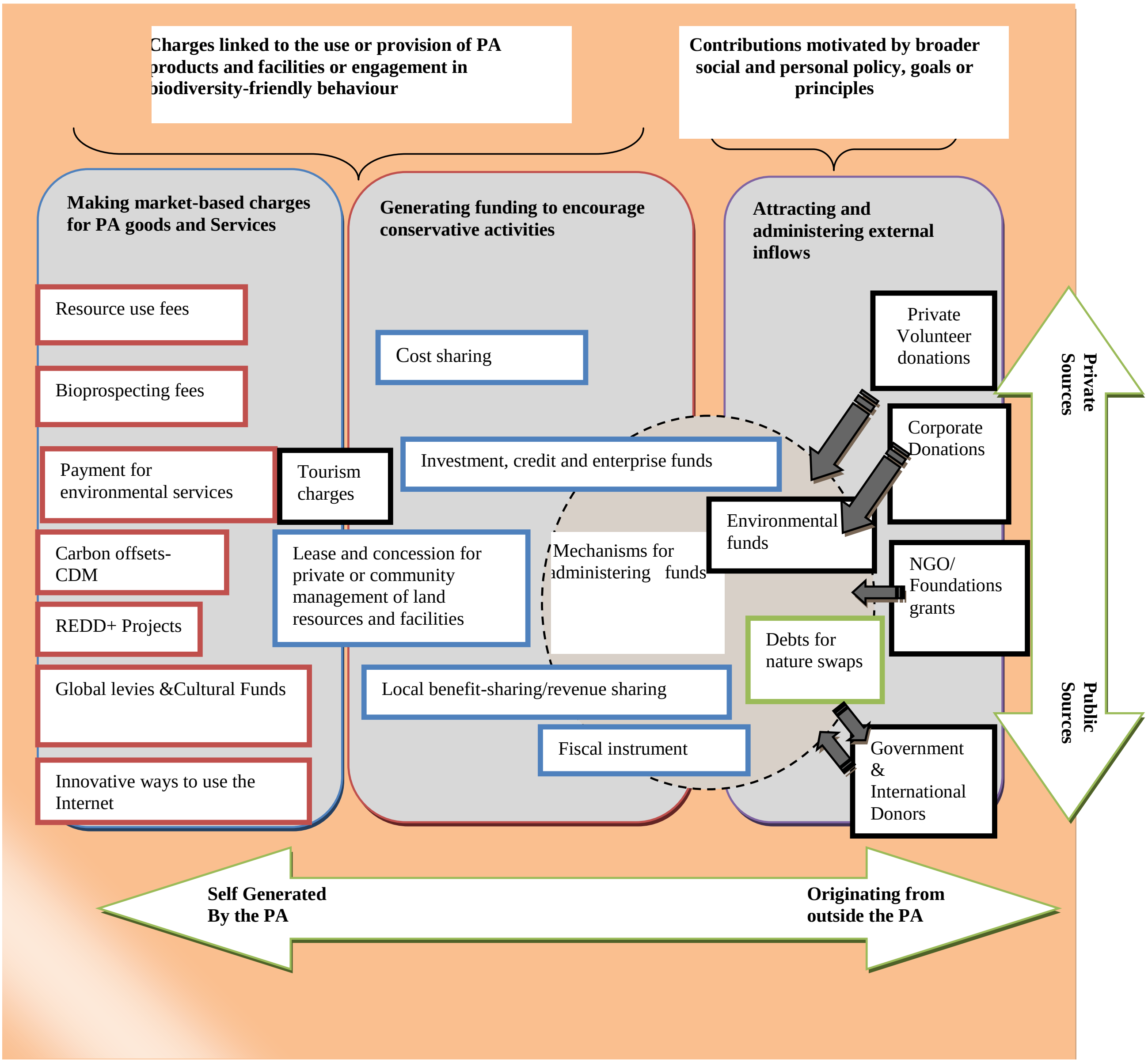

Figure 1. Proposed theoretical framework for sustainable financing of protected areas at SNTC. Source: Dlamini (2010).

sector budgets will remain the main focus for long-term funding in many countries.

Issue 2: Role of donors

Bilateral and multilateral donor funds would be the preferred options for PA financing in developing countries and countries with economies in transition.

Issue 3: Justification based on socio-economic objectives

The ability of PA planners and managers to present funding requirements according to socio-economic objectives will determine the need for future funding; programmes, sub-programmes and projects are now funded based on their relevance to poverty alleviation and socio-economic benefits.

Issue 4: Promoting innovative financing mechanisms

Conventional sources of protected areas funding are certainly under immense pressure and can no longer cope with the ever increasing funding needs. As a result operations in existing protected areas are not well funded. This challenge can be addressed through the development and expansion of the emerging innovative PA mechanisms.

Issue 5: Adoption of incentive-based approaches

Incentive-based approaches now commonly used to guide broader development processes, should be adopted e.g. market-led enterprise development where new goods and services are developed in the protected areas. In addition there is a need to introduce new trends and systems for payment for ecosystem services in order to generate funds for protected areas and biodiversity conservation.

Issue 6: Diversification of funding sources

There is an opportunity for protected areas to develop investment proposals and request for financial assistance from the private sector, NGOs, development agencies, and other prospective donors.

Issue 7: Capacity building

Protected area managers and decision makers of funding bodies should make sure that the necessary awareness, infrastructure and information base is provided to enable successful protected area management programmes, sub-programmes and projects.

Protected areas financing: Challenges

In addition to the opportunities stated above, Armstrong and Weiler (2002), CBD (2004a), WCPA (2002), Spenceley (2004), Font et al. (2004), Eagles (1995), Dharmaratne et al. (2000), IUCN (2000) also investigated challenges towards sustainability of Protected areas financing and their findings may be summarized into eight issues:

Issue 1: Failure to honour commitments/obligation

A critical issue to biodiversity conversation is lack of ownership to agreed commitment by international donors and national governments. More protected areas are being established based on pledges and in some cases these pledges are not honoured resulting in protected areas having acute funding shortages and ultimately failing to carry out their mandates.

Issue 2: Policy failure

The main challenge is influencing public policy and increasing budgetary allocation. Decision makers are not versed in the role of Protected areas in sustainable development and poverty reduction, and as a result policies do not support the financing of Protected areas. Resource surveys and economic valuation of protected areas could be the most effective tool for raising awareness.

Issue 3: Lack of incentives in national fiscal policies

Most countries do not reflect the real or actual monetary value of biodiversity and environmental goods and services in their system of national accounts. Lack of awareness on the cost benefit analysis for biodiversity conservation by decision makers has led to omission of biodiversity conservation in financial planning hence limited funds are channelled towards incentives for biodiversity conservation and protected areas.

Issue 4: Social costs of protected areas to local communities

In addition to better information on the economic contribution of Protected areas and the role of incentives in promoting conservation, it is essential to consider the social costs of protected areas and to incorporate these costs into conservation budgets. However, in reality funds budgeted for social corporate responsibility forms the smallest part of a protected areas annual operating budget.

Issue 5: Lack of multi-stakeholder participation

A related challenge concerns the participation of local communities, NGOs and the private sector in PA management. Though there are case studies which have shown the positive contribution made by stakeholder participation in protected area (PA) management the concept is still not well appreciated in most countries as local communities perceive protected areas as having a protectionist mentality than sustainable resource use mentality.

Issues 6: Natural products enterprise development

An innovative strategy for enhancing the socio-economic contribution of protected areas to local development, as well as diversifying funding sources, is to promote small-scale enterprises based on sustainable harvesting of natural resources. Major concerns include the lack of appropriate business development skills in many remote areas, where protected areas are located, and the high transaction costs of establishing commercially-viable biodiversity enterprises, including poor marketing strategies by PA authorities.

Issue 7: Unsustainable resource extraction from protected areas

Where protected areas generate revenues directly, by charging for goods and services, there is a great challenge of economic sustainability versus ecological sustainability. Protected areas normally struggle in determining the equilibrium between the two and as long as the market is available extraction continues leading to diminishing environmental goods and services.

Issue 8: Payments for ecosystems services

In many countries the concept of payments for ecosystem services (PES) is becoming a new solution to the challenges of protected area financing. However, enormous investment in technical capacity, research and negotiations are essential prior to introducing a fully-fledged in PES system. And in some cases, PES may result in conflicts between conservation objectives (e.g. carbon versus water supply versus biodiversity).

COMPONENTS OF A SUCCESSFUL PROTECTED AREA

According to Font et al. (2004) a successful protected area has certain specifications (that is interdependent pillars) over and above a reliable budget (that is sustainable supply of funds), and these pillars may be summarized as follows:

1. A programme/project design based on a logical framework analysis of strategic goals, strategic objectives, outputs, outcomes, indicators, means of verification, who is responsible, and critical assumptions. Accompanying the logical framework should be a detailed implementation schedule, monitoring and evaluation plan and an indicator tracking table
2. Adequately trained and experienced human resources to carry out the duties and responsibilities of the various programmes in the protected area
3. A pristine environment endowed with a wide range of high value ecosystems, habitats, genes, species of flora and fauna. In addition attractive and high value landscapes and a diverse geological set-up will complete the rich biodiversity
4. Participation of local communities, NGOs, the private sector, development agencies and other relevant stakeholders in conservation activities of the protected area is crucial for success; and
5. Innovative national policies and legislation, strategies, programmes, sub-programmes and projects that support nature conservation are vital for an efficient and effective protected area

These pillars are interdependent and are the ultimate ingredients for successful protected areas.

CONCLUSIONS

Protected areas are paramount in nature conservation and currently national, regional and international policies and legislation are in place to support biodiversity conservation. However, sustainable financing of protected areas remains a major challenge, nonetheless, a series of financing models are being developed and tested worldwide.

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