



MANAGEMENT OF PROTECTED AREAS BY THE DEPARTMENT OF WILDLIFE AND NATIONAL PARKS (DWNP)



PERFORMANCE AUDIT REPORT

No.8. of 2010

AUDITING FOR BOTSWANA GOVERNMENT

The Auditor General is the head of the Office of the Auditor general, appointed under the Constitution. The Auditor General carries out his duties under the Finance and Audit Act of 1997. He thereof undertakes Performance Audits on the public sector bodies and submits reports to the National Assembly. The aim is to improve the public sector administration and accountability.

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28 July 2011

Honourable O.K.Matambo
Minister of Finance and Development Planning
Private Bag 008
Gaborone

Dear Sir,

I have undertaken a performance audit on the Management of Protected Areas, pursuant to Section 29 of the Finance and Audit Act, 1997.

As you are aware, the Finance and Audit Act has provision which gives the Auditor General the mandate to carry out performance audit in the public sector and the Performance Audit Reports are to be laid before the National Assembly, by the Minister responsible for Finance.

Accordingly, I submit the Performance Audit Report No.8, 2010 on the audit of Management of Protected Areas by the Department of Wildlife and National Parks to be laid before the National Assembly in accordance with Section 36 of Finance and Audit Act.

Yours faithfully,

R.B. Sebopeng
Auditor General

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ACRONYMS AND ABBREVIATIONS

APU	Anti-Poaching Unit
AWAs	Accompanied Walking Areas
BDF	Botswana Defence Force
BRMC	Botswana Rhino Management Committee
BRMS	Botswana Rhino Management Strategy
BWTI	Botswana Wildlife Training Institute
CBD	Convention on Biological Diversity
CBOs	Community Based Organisations
CEOD	Community Extension and Outreach Division
CHAs	Community Hunting Areas
CITES	Convention on International Trade on Endangered Species of Animals
CNP	Chobe National Park
CRFP	Chobe Riverfront Plan
CUZs	Community Use Zones
CWII	Ramsar Convention on Wetlands of International Importance
DWNP	Department of Wildlife and national Parks
DWOs	District Wildlife Officers
FEGR	Francistown Educational Game Reserve
GEF	Global Environment Facility
HDTZ	High Density Tourism Zone
INTOSAI	International Organisation of Supreme Audit Institution
IUCN	International Union for the Conservation of Nature
KTP	Kgalagadi Transfrontier Park
KZTC	Kavango-Zambezi Transfrontier Conservation Area
LACOM	Local Advisory Committee
LDTZs	Low Density Tourism Zones
LSTRPC	Limpopo/Shashe Transfrontier Conservation Area
MEWT	Ministry of Environment Wildlife and Tourism
MGR	Moremi Game Reserve
MOMS	Management Oriented Monitoring System
MPs	Management Plans
NDP	National Development Plan
ODMP	Okavango Delta Management Plan
PAC	Problem Animal Control
PAs	Protected Areas
PPF	Predator Proof Fence
RWOs	Regional Wildlife Officers
UNDP	United Nations Development Programme
RWB	Regional Wildlife Biologists
WMAs	Wildlife Management Areas

EXECUTIVE SUMMARY

The Ministry of Environment, Wildlife and Tourism (MEWT) is mandated to plan, implement and coordinate initiatives identified by the Government in order to achieve a set of goals consistent with the protection of all species of animals and plants as well as the protection of the biodiversity through the Department of Wildlife and National Parks (DWNP). The Wildlife and National Parks Act Cap 38:01 of 1992 serves as the principal legislation on management of protected areas. The Act encapsulates Regulations pertaining to management of protected areas such as the national parks, game reserves and wildlife management areas (WMAs). Management of protected areas is aimed at conserving the biodiversity throughout Botswana in the interest of present and future generations, as well as ensuring the realisation of the full economic potential of wildlife resources outside the protected areas through sustainable utilisation, whilst maintaining the country's biodiversity. These DWNP achieves these objectives in partnership with a range of interested stakeholders.

Objectives of the audit

The Office of the Auditor General conducted a performance audit on the Management of the Protected Areas, as part of our audit for the year ended 31 March 2011. The overall objective of the audit was to assess the effectiveness of the Department of Wildlife and National Parks (DWNP) in the management of protected areas. This was evaluated by determining the extent at which Regulations and Management Plans were implemented as well as assessing the effectiveness of stakeholders' input towards the achievement of ore-determined goals.

Summary of key findings and Recommendations

During the audit, the following findings came to light:

Development and Review of Management Plans

All visited areas: Chobe National Park, Moremi Game Reserve and Kgalagadi Transfrontier Park did not review their Management Plans within the prescribed 5-year period, contrary to the requirement of the National Parks and Game Reserves Regulations. This meant that the socio-economic challenges that were supposed to be integrated into the Management Plans in order to manage the parks sustainably were not addressed.

Recommendation

The OAG recommends that the Director of the DWNP should ensure that all the protected areas' Management Plans are developed and reviewed within the

predetermined five-year period to ensure that they remained relevant to prevailing ecological, socio-economic and the conservation challenges within and around protected areas.

Management comment

Management acknowledged that indeed the DWNP had not reviewed Management Plans every 5 years as per the Regulations.

Implementation of Management Plans

Park Managers had not implemented some of the key proposed initiatives of their Management Plans (MPs). For example, there were no Community Use Zones designated for communities within Chobe National Park (CNP), Kgalagadi Transfrontier Park (KTP) and Moremi Game Reserve (MGR) contrary to the Management Plans for all the aforementioned 3 protected areas. Failure by the Park Managers for the 3 protected areas to designate CUZs within the park resulted in lost socio-economic opportunities for communities within the periphery of the park.

Recommendation

The OAG recommends that DWNP Management should ensure that Park Managers appropriately implement Management Plans and engage all stakeholders more especially communities within the periphery of protected areas, in order to facilitate utilisation of natural resources therein, in an optimal and sustainable manner.

Management comment

Management of the DWNP concurred with the finding. However, Management was of the view that communities derived sufficient benefits from the activities associated with the Community Based Natural Resources Management (CBNRM) Programme.

Elephant Population Explosion and Environmental Degradation

The DWNP had not implemented some of the management interventions that were meant to conserve the environment and its animal species in diversity. As a result of failure to implement the control measures, the resurgent upswing of elephants' population had been associated with increased crop damage, damage to farm fence and water supplies; changes in woodland composition and structure.

Recommendation

The Office of the Auditor General (OAG) recommends that the DWNP should implement the Elephant Management Plan (with modifications where necessary), in order to control elephants populations to acceptable level as

defined by the Management Plan in order to minimise negative impact on the ecology.

Management comment

Management stated that the DWNP was constrained to implement the proposed objectives of the Elephant Management Plan of 1991 by the international conventions to which Botswana was a signatory, such as CITES. Therefore, only 400 licenses were issued annually for export in respect of the elephants.

Chobe Riverfront Plan

At the time of audit, the proposals encapsulated in the Chobe Riverfront Plan had not been implemented; five years post their endorsement by the Chobe National Park stakeholders. For example, two-stroke engine boats were still predominantly used instead of the preferred four-stroke boat engines. Hence traffic within the river had not decreased, owing to reciprocally increasing tourists' numbers.

Recommendation

The OAG recommends that the DWNP should expedite the implementation of the Chobe Riverfront Plan.

Management comment

The DWNP stated that they will strive to implement all practically possible and appropriate components of the Management Plan. For example, the stoppage of 2 stroke engines at Chobe National Park was effected as of March 2010.

Community Based Organisations

The OAG observed that all protected areas except the Chobe National Park (CNP) had neither facilitated the establishment of LACOM nor informal consultative committees such as, the Local Consultative Committees and the Local Stakeholder Advisory Committees. As a result, community-farmers considered wild animals as nuisance instead of part of their economic resource

Recommendation

The OAG recommends that the DWNP should ensure that all Park Managers facilitate the creation of Local Advisory Committees.

Management comment

Management of the DWNP concurred with the observation that most of the parks were still lagging behind in the creation of the Local Advisory Committees.

Private Sector

There was lack of clarity on the role of Park Managers on monitoring Private Operators' activities within parks. Park Managers and Regional Wildlife Officers in

the audited protected areas were not acquainted with the details of the business relationship between themselves and the private operators. As a result, Park Managers who were based at the parks could not provide adequate assistance and/or solutions on operational issues raised by their private sector counter partners.

Recommendation

The OAG recommends that Management at the DWNP should ensure that they consistently observe the principles of Good Corporate Governance such as transparency when implementing sensitive initiatives that affect citizens of Botswana as well as their employees such as the privatisation process.

Management comment

Management concurred with the observation. However, Management stated that they were oblivious to the said lack of involvement and knowledge of employees in the outsourcing of campsites.

Public Relations and Education

Although, the DWNP had the Division of Community Extension and Outreach, protected areas had not achieved all their intended objectives with regard to raising public awareness. This made the public education and relations ineffective because the same information was disseminated to different target groups contrary to the proposed strategy of targeted information dissemination strategy as proposed in the KTP Management Plan.

Recommendation

The OAG recommends that the DWNP should ensure that Management of all protected areas develop strategies for public education and relations for their respective protected areas.

Management comment

Management appreciated the OAG's recommendation for the development of market specific strategies for public education and relations for the respective protected areas. The idea will be explored within the limits of the DWNP capacity both human and financial.

Management of Endangered Species

The implementation of the Botswana Rhino Management Strategy (BRMS) and the resultant healthy increase of rhinoceros populations was a clear demonstration of an effective management of endangered species that based on an intensive collaboration between all stakeholders' input into rhino protection and management.

Management comment

Management appreciated the positive feedback on the good management of the endangered species more especially rhinos as observed by the OAG.

Human – Wildlife Conflict

Although the DWNP had already implemented some of its proactive human wildlife interventions by fencing and providing artificial water points, the number of livestock killed by different animal species recorded for the year 2008/09 remained catastrophically high for a region so reliant on arable farming and livestock rearing. As a result human-wildlife conflicts remained high countrywide and thus resulted in high mortality rates of lions that were considered by farmers as the main culprits in livestock predation.

Recommendation

The OAG recommends that, the DWNP should effectively implement intervention strategies aimed at eliminating human-wildlife conflicts and where necessary re-invent new strategies that could effectively reduce the destruction caused by wild-animals in order to normalise human-wildlife relations.

Management comment'

The DWNP stated that they were committed to do whatever was within its powers to reduce Human Wildlife Conflict. Some of the innovative means of dealing with the conflict that were explored included the use of chilli pepper in the case of elephants and specific game proof fencing for different species.

Research and Monitoring

Although the OAG observed that there was monitoring through Management Oriented Monitoring System (MOMS) in all protected areas visited, research was inadequate for management to adopt adaptive management through systematic research. As a result, the impact of MOMS had been effective in monitoring the on-going activities but not in research. Hence, adaptive management towards the management of protected areas had not materialised.

Recommendation

The Office of the Auditor General recommends that MOMS should be audited so that all the above-mentioned shortcomings are addressed to ensure effective research and effective implementation of adaptive management.

Management comment

Management indicated indeed the Research Division had capacity constraints as indicated in the finding. The problem was further exacerbated by high staff turnover.

Departmental Capacity

DWNP was overstretched in undertaking a wide array of activities, more especially road maintenance, fire fighting and road signage. As result, the DWNP was not effective in undertaking some of its operational activities such as patrolling the Predator Proof Fence (PPF). For example, the DWNP had struggled to consistently monitor the PPF because of shortage of manpower and vehicles.

Recommendation

It is recommended that the DWNP streamline their activities in order to improve the efficiency and effectiveness of the DWNP in undertaking its mandate in the management of protected areas.

Management comment

Management appreciated the observation made by the OAG that the mandate of the DWNP was huge and cut across several areas that required different specialties.

Overall Conclusion

The Office of the Auditor General (OAG) concludes that failure to review in time and implement Management Plans, ineffective management of problem animals and inadequate resources in the Department of Wildlife and National Parks (DWNP) was a major challenge in the efficient management of protected areas. This was so because the DWNP did not integrate contemporary challenges and opportunities that could be better managed with the aid of up-to-date Management Plans and research outputs. Such included would broaden the input of stakeholders more especially Communities within the vicinity of parks as well as the private sector. This is a requirement for Good Corporate Governance in modern states. However, credit should be accorded the Department to have been able to pull strings from an array of stakeholders especially the private sector and non-state actors particularly in the management of endangered species amid dire resources constraints.

Management Overall Comment

Management appreciated the report and indicated that it was an eye opener and efforts would be made to implement the recommendations in earnest.

CHAPTER 1

1.0 INTRODUCTION

1.1 BACKGROUND

The devastation of nature through an accelerated loss of species of animals, plants and micro-organisms is a concern world-wide. That is, loss of nature as a result of unsustainable developments connected to industrialisation and urbanisation amongst others has created uncertainty about the future of mankind, the ecosystem, biodiversity and the habitat of all species. Change in land use caused by the commercialisation of agriculture, urbanisation, increasing human populations, and changes in human consumption patterns and lifestyles, desertification and biotechnology is a major threat to biodiversity. In recognising that Botswana was susceptible to the environment threat, the country became signatory to panoply of treaties and conventions that promote sustainable wildlife and environment conservation. Such include; the Convention on International Trade on Endangered Species of Animals (CITES); the Ramsar Convention on Wetlands of International Importance (CWII); Convention on Biological Diversity (CBD); and Regional Agreements on the establishment of trans-frontier parks. Examples of Regional Agreements on the establishment of trans-frontier parks include the Kgalagadi Transfrontier Park, Kavango-Zambezi Transfrontier Conservation Area and Limpopo/Shashe Transfrontier Conservation Area. The Convention on Biological Diversity defines a protected area as a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

Botswana Government took these initiatives seriously to an extent that at least 37% of the country's surface including protected areas is a wildlife estate. The National Parks and Game Reserves account for 17% while the Wildlife Management Areas (WMAs) occupy 20% of Botswana's surface area. The CBD has been adopted by 187 countries including Botswana and its definition thus clearly has great importance as is relevant in defining National Parks and Game Reserves in Botswana.

The Ministry of Environment, Wildlife and Tourism (MEWT) is mandated to plan, implement and coordinate initiatives indentified by the Government in order to achieve a set of goals consistent with the protection of all species of animals and plants as well as the protection of the biodiversity through the Department of Wildlife and National Parks (DWNP).

The Wildlife and National Parks Act Cap 38:01 of 1992 serves as the principal legislation on management of protected areas. The Act also encapsulates regulations pertaining to management of protected areas such as the national parks and game reserves as well as the Wildlife Management Areas (WMAs) that serve as migratory corridors for wildlife between protected areas.

1.2 DEPARTMENT OF WILDLIFE AND NATIONAL PARKS (DWNP)

1.2.1 Organisation

According to the NDP 8, Department of Wildlife and National Parks (DWNP) is responsible for the conservation of natural habitat and biodiversity in National Parks and Game Reserves by minimal interference and adaptive management within these areas, and by appropriate initiatives outside, for the interest of present and future generations. In addition, it is also responsible for the promotion of realisation of the full economic potential of wildlife resources outside National Parks and Game Reserves through sustainable utilisation, whilst maintaining the country's biodiversity and the enforcement of laws relating to wildlife resources.

DWNP falls under the Ministry of Environment, Wildlife and Tourism. The Department of Wildlife and National Parks (DWNP) has the overall responsibility to formulate, implement and coordinate policies, strategies and programmes for wildlife and fish resources. This mandate is aimed at ensuring that Botswana enjoys sustainable development in the utilisation of its wildlife resources for socio-economic development, environmental protection and cultural development.

The Department is headed by a Director who has two-Deputy Directors who report to the former. In addition to that, there are four Chief Wildlife Officers, heading different Divisions. At the regional level, the Regional Wildlife Officers (RWOs) provide leadership to the region and in-turn report to the Deputy Director Operations. District Wildlife Officers (DWOs) Park Managers and are under the supervision of RWOs. Park Managers are responsible for the day-to-day running of the parks and have a host of officers to supervise at the parks. In addition, the Research and Statistics Division, Community Extension and Outreach Division (CEOD) and the Wildlife Estate Management Division have a supportive role to the RWOs who in turn as already stated report to the Deputy Director: Operations.

1.2.2 Divisions

The Department is divided into 8 Divisions. These are of distinctive components which have interrelated responsibilities in the management of protected areas and they are as follows;

- ❖ **The Directorate** - The Division is responsible for coordinating activities at the Department and providing policy guidelines.
- ❖ **Research** – The Division is responsible for providing scientific data required in the management of wildlife populations and their habitats. The Division of Research, Monitoring and Statistics plays a significant advisory role as an important source of information for the Department of Wildlife and National Parks (DWNP). The Division achieves this by systematically collecting data, analysing it, collating and writing reports pertaining to the vegetation and animal species found in the protected areas.
- ❖ **Wildlife Estate Management** - The Division is responsible for anti-poaching and problem animal control and the development and management of wildlife outside the protected areas, including law enforcement. In addition, the Division is responsible for the development, management and administration of National Parks, Game Reserves, Wildlife Management Areas and the Educational Reserves.
- ❖ **Community Extension and Outreach (CEOD) – The** Division is responsible for the promotion, development and oversight of community based natural resources management activities and initiatives.
- ❖ **Departmental Management** – The Division is responsible for providing support services including financial and manpower resources.
- ❖ **Fisheries** – The Division is responsible for the management and development of fish resources and their sustainable utilization, as well as commercial fish production through aquaculture.
- ❖ **Botswana Wildlife Training Institute (BWTI)** – The Division is responsible for the training of employees on wildlife and fish related issues.

1.3. MISSION STATEMENT AND OBJECTIVES

1.3.1 Mission Statement

The DWNP will effectively conserve the biodiversity of Botswana while ensuring that Botswana appreciate and benefit from the sustainable utilisation of wildlife resources.

1.3.2 Objectives of the Department of Wildlife and National Parks

The objectives of the DWNP are to:

1. Ensure the conservation of biodiversity throughout Botswana in the interest of present and future generations.
2. Ensure the conservation of indigenous fish and wildlife habitat in the national parks and game reserves through minimal interference and, where necessary, by adaptive management.
3. Involve communities, non-governmental organisations and the private sector in the realisation of the full economic potential of fish and wildlife resources outside the protected areas through sustainable utilisation, whilst maintaining the country's biodiversity.
4. Promote continuous research in all areas related to the management of fish and wildlife resources in Botswana.
5. Raise public awareness and appreciation of Botswana's unique fish and wildlife resources.
6. Enforce the laws relating to fish and wildlife resources.

1.4 FINANCES

DWNP funds are provided by Parliament's appropriation through the Ministry of Environment Wildlife and Tourism. The warrants are forwarded to the DWNP which are used to disburse funds to the protected areas in accordance with the provided requests. The annual average recurrent budget for the DWNP is approximately P95 million.

1.5 STAFFING

The Department of Wildlife and National Parks manages three protected areas that were audited with 154 personnel including Permanent and Pensionable as well as Industrial Class Employees. However, the overall staff members that are directly and indirectly responsible for the management of protected areas (PAs), either placed within such areas or at the Head Office is 1535 as indicated in Table 1 below:

Table 1: DWNP staff

Protected Area	Permanent	Industrial	Totals
Chobe National Park	55	24	79
Kalahari Transfrontier Park	24	5	29
Moremi Game reserve	38	8	46
DWNP Staff	1068	467	1535

Source: DWNP

1.6 AUDIT MOTIVATION

The Office of the Auditor General undertook the audit of protected areas in order to establish whether the growth of the tourism industry did not threaten the ecological integrity of national parks and game reserves. This was considered critical given that the number of tourists descending on Botswana's tourist spots had been rising consistently since 1998 from 800 000 to almost 1.5 million people per annum in 2009 (Trading economics) World Bank, (2010) <http://www.tradingeconomics.com/botswana/international-tourism-expenditures-for-passenger-transport-items-us-dollar-wb-data.html>.

Whereas this was a welcome development towards the country's ambitious economic diversification drive by providing sustainable employment creation, it also presented the challenge to the sustainable management of the wilderness areas and Botswana's fauna and flora that were the main drive of the tourism industry in Botswana.

Additionally, the audit was motivated by the increasing reported cases of human-wildlife conflicts which were reported in the Local Print Press as well as rapid growth of elephant populations amid reported declining trends of some of the animal species. On one hand, the Mmegi wa Dikgang Newspaper of 05 April 2007 had covered this development with reference to the destruction perpetrated by predators and elephants in particular, thus impoverishing the

rural communities that relied mainly on agricultural production, both pastoral and arable. On the other hand, the South Africa Mail and Guardian (22 November 2009) and the British Guardian (22 November 2009) Newspapers also published stories about the fears expressed by local fishermen about the possible destruction of Okavango Delta due to increased volume of tourists.

CHAPTER 2

2.0 AUDIT DESIGN AND METHODOLOGY

2.1 AUDIT OBJECTIVES

The overall objective of the audit was to assess the effectiveness of the Department of Wildlife and National Parks (DWNP) in the management of protected areas.

The following were specific audit objectives:

- Determine whether relevant Policy and Management guiding documents especially the Management Plans (MPs) were drafted and reviewed within the stipulated time-frame;
- Determine the extent to which the Regulations and MPs were implemented to achieve both their conservation and socio-economic objectives;
- Assess the effectiveness of the existing stakeholder participation framework as well as efficiency in cultivating the culture of awareness and involvement of all stakeholders in the management of protected areas; and
- Evaluate the capacity of the DWNP to manage PAs in accordance with their pre-determined goals.

2.2 AUDIT SCOPE AND LIMITATIONS

The audit was conducted at the Department of Wildlife and National Parks (DWNP) within the Ministry of Environment, Wildlife and Tourism (MEWT). The audit focused on the DWNP's business operations and also assessed the administrative measures put in place to manage protected areas. The audit covered only four financial years (2005/06 – 2008/09) that fall within the National Development Plan IX (NDP 9) in order to establish the performance of the Department against its goals and objectives consistent with its long-term NDP 9 strategic goals and Key Result Areas (KRAs) pertaining to the management of protected areas.

Three Protected Areas were selected based on their exposure to the risk of human-wildlife conflicts as a result of the expanding agricultural activities in their vicinity. Additionally, the protected areas with significant exposure to environmental degradation as a result of their attractiveness to international tourists were selected as well as those which had a significant number of the so-called problem animals more especially predator animals and elephants, because these animal species were major contributors towards human-wildlife conflicts.

It should nevertheless, be stated from the onset that the term protected areas (PAs) refer to the National Parks and Game Reserves. This therefore, means that bird sanctuaries, wildlife management areas do not fall within the purview of this audit report. Due to the vastness of Botswana and vast distances between the protected areas, only three(3) national protected areas out of six(6) were visited. The audit was carried out at the Chobe National Park (CNP), Moremi Game Reserve (MGR), Kgalagadi Trans-frontier Park (KTP) and at the Francistown Educational Game Reserve (FEGR). To date there are three National Game Reserves; four National Parks, seven private Game Reserves, ten private educational Game Reserves, Bird Sanctuaries and Wildlife Management Areas across the country. Nevertheless, none of the private game reserves was selected for the audit due to limited financial and time resources.

2.3 METHODS OF DATA COLLECTION

The audit was conducted in accordance with the International Organisation of Supreme Audit Institution (INTOSAI) and Office of the Auditor General Manual on Performance Audit in order to collect relevant and required data from a variety of sources, to complement data collected through the respective methods of document review, interviews or physical observation and/or site visits. In addition, a purposive sampling technique was used in undertaking the audit. That is; the observations made in selected protected areas (PAs) were treated as representative for the all Botswana's PAs.

2.3.1 Documents review

The following documents were reviewed in order to understand the legal framework within which protected areas were created and managed. Furthermore, regulations and policies which guide management of protected areas as well as recent research and consultancies pertaining thereto were reviewed. These included:

- National Development Plans 8 & 9;

- (Draft) Management Plans for all the three national protected areas selected for audit
- Wildlife Conservation and National Parks Act Cap 38:01 of 1992;
- Reservations Manual;
- Operational Procedures and Guidelines;
- Draft of Botswana Wildlife Conservation Policy (Final report) 2000;
- National Parks and Game Reserves Regulations;
- Problem Animal Control Regulations;
- Hunting and Licensing and Game Ranching Regulations;
- National Settlement Policy of 2001;
- Okavango Delta Management Plan;
- Strategic Plan for Wildlife Research in Botswana of 1993; and
- Predator Management Strategy for Botswana.

2.3.2 Interviews

A purposive sampling technique was used in the selection of interviewees. Heads of Departments were selected in order to provide in-depth description and input of their Departments as well as policy issues pertaining to the management of protected areas. Therefore, the following were interviewed:

- Director – DWNP
- Assistant Director - Strategy and Research Unit;
- Chief Wildlife Officer
- Head of Reservations Parks;
- Chief Wildlife Officer – Wildlife Estate Management Division;
- Three Park Managers for the three visited protected areas;
- Kasane Township Kgosi representing stakeholders who reside within the vicinity of one of the protected area;
- Two Private operators of camp sites at the Chobe National Park and Moremi Game Reserve: Into Africa Mowana Safari-Operations Manager and Mr. Mbulawa (Managing Director)
- Three Community Trusts Chairpersons: Chobe Enclave Conservation (Trust Manager) and Okavango Kopano Mokoro Trusts) (Trust Manager and Trust Accountant); Boravast Trust (VDC Chairperson)

2.3.3 Site visits

The Audit Team also undertook site visits in order to create a comprehension of the protected areas and developments therein.

CHAPTER 3

3.0 DESCRIPTION OF THE AUDIT AREA

3.1 PROTECTED AREAS (NATIONAL PARKS AND GAME RESERVES)

Protected areas are the cornerstones of all national and local biodiversity conservation. They also represent one of the largest land allocations, therefore, the Governments and other stakeholders are increasingly demanding accurate reports of both their material and non-material value. Parks and reserves are important “green lungs”, providing space for the people to enjoy creation. They assist to protect cultural and spiritual value.

Therefore, the International Union for the Conservation of Nature (IUCN) which Botswana is signatory, indicates that one of the categories of protected areas especially national parks as protected areas, are managed mainly for ecosystems protection and recreation. National land designated to protect the ecological integrity of one or more ecosystems for present and future generations exclude exploitation or occupation inimical to the purpose of designation of the area and provide foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible. The game reserves cover 44 000 km² (or 7.6%) of the country while the national parks account for 11.3% or 60 000 km² of Botswana. Protected areas protect and preserve wildlife and ecology but also support huge tourism trade (with associated accommodation).

The IUCN suggests that the main purpose of protected areas can be summarised as:

- Scientific research
- Wilderness protection
- Preservation of species and genetic diversity
- Maintenance of environmental services
- Protection of specific natural and cultural features
- Tourism and creation
- Education
- Sustainable use of resources from natural ecosystems
- Maintenance of cultural and traditional attributes

3.1.1 Declaration of Protected Areas

Once the protected area (PA) has been declared and established, the Minister assigned the portfolio of Wildlife Management is responsible for the control, management and maintenance of protected areas. The Minister undertakes these responsibilities by ensuring construction of roads, buildings and fences; taking appropriate steps to ensure the security of the animals and vegetation as well as for the preservation of the protected area to remain in a natural state; letting sites for the erection of hotels and restaurants amongst others and control the manner in which such undertakings are carried on; introducing any specimen of animal or vegetation which he/she may consider desirable to introduce into a protected area; authorising any scientific investigations on such terms and conditions as he/she may approve; and authorising the killing or capturing of any animal.

3.1.2 Management Plans

The Management plans provide framework for management operations within the parks and reserves. They provide important mechanisms for the protection of national/cultural heritage and defining acceptable uses within defined areas. Management Plans are legal document requirements required under Section of the Act and Regulations Number 3 which requires the Director to prepare Management Plans for each Park and Game Reserve. In the absence of a Management Plan, the development and management of National Parks and Game Reserves shall be guided by the draft Management Plans and the Game Reserves and National Parks Regulations. According to Regulation 3 of the Game Reserves and National Parks, the Management Plan for National Parks and Game Reserves shall be reviewed after every five years. The following table indicates when Management Plan for each National Park and Game Reserve under audit came into effect.

Table 2: Management Plans for Protected Areas visited

National Parks and Game Reserve	Year of Proclamation	Management Plan 1	Management Plan 2	Management Plan 3	Management Plan 4	Management Plan 5
Moremi Game Reserve	1965	1992 (not formally adopted by DWNP)	2007 (Not in use yet)	-	-	-
Chobe National Park	1968	1988	1993	1997	2002	2009 (Not in use yet)
Francistown Educational Game Reserve	-	-	-	-	-	-
Kalahari Transfrontier Park	2000	1997	-	-	-	-

Source: Extracts from Management Plans for CNP; MGR; KTP and

The Minister also delegates to the Director or to any Wildlife Officer (WO) such of his powers as he considers desirable. The Minister delegates these responsibilities by causing to be prepared for each national park and game reserve a Management Plan, to cover the aspects of development and management of the protected area. The Director then approves, in writing and by initialling each page, of a Management Plan within 60 days of the official completion of the Management Plan. Any part of the Management Plan is substituted at any time if so approved by the Director. However, a Management Plan prepared for a protected area on tribal land is approved by the Director and the appropriate Land Board, signed by the Chairman of the Land Board as an indication of approval. After the approval of the Management Plan, the Officer in Charge then implements all activities guided by the Management Plan unless directed otherwise by the Director. In the absence of the Management Plan, the development and management of the protected area is guided by the Draft Management Plan or the instructions of the Director where such a draft does not exist. Nevertheless, such a Management Plan may be reviewed as and when required, subject to a comprehensive review at least once every five years.

3.2 STRUCTURES AT THE PROTECTED AREAS NATIONAL AND REGIONAL LEVEL

3.2.1 National Parks and Game Reserves

In order to ensure that Management Plans are implemented, the Department of Wildlife and National Parks has established the Parks Division which is responsible for the day-to-day activities of the parks. The Parks Division is headed by a Park Manager who ensures that the Management Plan is effectively implemented in order to achieve the conservation and socio-economic objectives as outlined in the document. The Park Manager ensures that responsibilities are performed by deploying staff to different activities such as patrolling the park fence, controlling entry and movement within the park and ensuring that the fence, roads and water supply equipments are accordingly maintained. The Park Manager achieves these activities by preparing a schedule of activities over a given time-period. For example, a given number of Officers are assigned the task to patrol the park and its periphery in order to ascertain that all animal species are protected from poaching as well as to ensure that the Tourists do not use illegal routes within the park. All the information captured during the patrol activities are recorded into the Management Oriented Monitoring System (MOMS) Manuals in order to understand the patterns of animal movements and determine areas prone to incidents such as poaching. The Park Manager is also responsible for ensuring that the road infrastructure is maintained efficiently as well as ensuring that there is cleanliness in the camp sites

However, it should be stated that although the Park Manager has the overall administration and management role within the park, including proposing manpower and training needs, this responsibility is assigned the Departmental Management. The DWNP has the responsibility to assess the financial and human resources needs proposed by the Regional Wildlife Officer (RWO) who compiles all financial, human and training needs for the region, the Parks Division included. This means RWOs make their assessments based on the presentation from all Divisions at Regional level, and compile a Regional Needs Report to the Departmental Management. Hence, budgeting is done at regional level for all parks.

3.2.2 Research Management

The Division of Research at Regional level represented by the Regional Wildlife Biologist (RWB) plays a supportive role to the Parks Division by collecting, collating and writing research reports. The Parks Division submits their priorities to the Research Division in order for the latter to plan their activities according to the priorities of the former. That is, the Research Division carries-out research activities according to the research problems submitted by the Parks Division based on the latter's observation. The Research Division may also prioritise the research problems identified by the Parks Division in allocating research permits to private researchers. On one hand, the Parks Division collects data through the Management Oriented Monitoring System (MOMS) data collection instruments at different points of the parks while on the other hand, the Research Division collects such data, analyse and produce research information. Such information is shared with all relevant Divisions within the DWNP including the Parks Division in order to devise new and more effective ways of managing protected areas.

3.2.3 Stakeholder Participation in Park Management

In order to develop a culture of people centred conservation approach, the DWNP created the Community Extension and Outreach Division (CEOD). This is to facilitate the role of other stakeholders in the management of protected areas. The Private Sector, the communities within the vicinity of protected area, the DWNP and other interested Government Agencies such as the Department of Conservation, has a role to play in the management of protected areas. In order to reduce conflicts between the DWNP and other interest groups and identify public relations problems, Local Advisory Committees (LACOM) was formed. These Committees facilitate the interaction between the DWNP and other stakeholders. The Community Extension and Outreach Division (CEOD) undertakes this responsibility by liaising with the Park Manager in amongst others; facilitating school trips to the parks as well as organising Kgotla Meetings in peripheral settlements and disseminating the conservation message.

CHAPTER 4

4.0 PROCESS DESCRIPTION

This part of the report briefly discusses processes involved in the management of protected areas right from entry into the park up to processes involved in Management interventions.

4.1 CONTROLLED ENTRY INTO AND MOVEMENT WITHIN PROTECTED AREAS

Entry and movement into the protected areas is controlled by the Management Plan (MP) and the Wildlife and National Parks Act. Potential visitors into protected areas (PAs) apply for valid entry permits at different offices of the Department of Wildlife and National Parks (DWNP) across the country. Applicants specify protected areas they intend to visit in their application forms. If applicants meet all the conditions of entry, they pay specified amounts of fees and are subsequently issued such permits by the Revenue Collector. Nevertheless, the Director or the Officer-in-Charge may waive or reduce any fees for a person or an organised group if deemed appropriate for purposes of education amongst others.

Persons with entry permits are then allowed entry into a protected area through a point of entry or exit, declared by the Director by notice in the *Government Gazette* and identified as such through a notice or a sign. In order to ensure that only specified types (weights) and numbers of vehicles are allowed in the protected areas at a given point in time, individuals are required to provide their identities in order to maintain densities of visitors within the carrying capacities of PAs.

4.2 MAINTENANCE ACTIVITY

Adequate water supply is necessary for the sustenance of wildlife populations in Protected Areas. Owing to the unreliable climate and natural water sources, waterholes are designed and installed within the protected areas so as to provide water to the animals. Therefore, in order to maintain the water supply, maintenance is done by the Department. Water is pumped from underground sources using diesel or solar powered pumps. Waterholes by nature are to be developed in remote areas and low-maintenance equipment such as solar powered systems are to be installed. The solar panel arrays must be protected

from possible damage by animals with an appropriate sized wire mesh fence. Regular cleaning of the water points and ensuring that there is no water leakage is carried out. The debris of bird' faeces and feathers, soil and salt must be ideally cleaned out on a monthly basis and waste taken away for disposal to avoid contamination that will lead to diseases. Furthermore, periodic sampling of diseases like anthrax is carried out to avoid outbreaks of diseases.

4.3 PATROLS/INSPECTIONS

Botswana having a policy of high income, low volume tourism, has kept the number of visitors/tourists to a sustainable level and at the same time maintaining the wilderness feel of the majority of Botswana's parks and reserves. The National Parks and Game Reserves Division uses the National Parks and Game Reserves Regulations of 2000 to carry out their patrols and inspections. The Regulations specifically state expectation of behaviour and conduct of visitors, in order to sustain the wilderness of protected areas. Patrols in protected areas (PAs) are undertaken at least once a week.

4.4 EDUCATION AND AWARENESS

Protected areas resources are managed for the benefit and education of visitors and communities adjacent to the parks. The communities have the responsibility and custodianship to lead and participate in the conservation activity through the Community Based Organisations (CBO's) which in turn reduce the human/wildlife conflicts. The Community Based Organisations together with community also are to provide for the advancement of scientific knowledge. Every PA is mandated to provide good quality interpretive materials which depict their overall corporate image, good signs, displays, maps and posters which are conveniently located in PAs so as to attract visitor attention and enhance visitor understanding of key issues, processes and concepts in relation to the site. The information leads to a more enlightened use of the area which in turn leads to more efficient and effective management of the area by the Site Managers.

4.5 MONITORING AND RESEARCH

Monitoring and Research processes are carried out continuously throughout the year in order to record population trends pertaining to species under observation as well as the impact of specified animal species on vegetation.

The Research and Statistics Division achieves this by carrying out annual aerial surveys, in order to determine the movement and number of animal species in protected areas. The research findings and recommendations are communicated to the management of the DWNP as well as that of the Ministry of Environment, Wildlife and Tourism such that their recommendations are assessed for relevance and adopted or rejected as management sees it fit. Aspects such as the Cost-Benefit-Analysis (CBA) are taken into consideration to ensure that cost-effective recommendations are noted for consideration.

Trends relating to the animal populations are controlled by increasing and/or reducing animal quotas. Therefore, the quota of animals is increased if such animal species' population has gone beyond the limits of acceptable change so determined by the Department. This ensures that the habitat is protected and maintained throughout the duration of the existence of the protected area. Thus, the Department uses the listing procedure to manage the populations of all species of animals.

In addition, the Department liaises with Independent researchers and/or Research institutes as well as local and international academicians on a variety of issues that are relevant to the overall goals of establishing protected areas. These institutions apply for research permits, clearly outlining their objectives and how they will achieve them. After an assessment of the research proposals, the Department allocates and/or rejects the research permits applicants. The findings of the research are prioritised by the Research Division which eventually summarises the findings and recommendations in order for management to take appropriate actions and/or measures in accordance with the priorities of the DWNP. Such priorities include the management of conflicts between the domestic and wild animals due to the expansionary nature of the livestock sector in Botswana in search of better grazing areas. The climatic changes that emanate from the global warming also affect the vegetation and availability of water in the traditional water points thus, these changes are monitored. The impact of the climatic conditions on the movements of wild animals is assessed for informed policy changes and practices, for example by providing them with artificial water points and fencing amongst others.

Additionally, the Department has devised a system called Management Oriented Monitoring System (MOMS). MOMS is used to monitor, record, report and archive management activities in Protected Areas (PAs), as well as Wildlife Management Areas (WMAs) and provide an effective means of collecting and collating information in a simple and systematic manner. With the system, management activities are repeatedly revised until objectives are met by the particular protected areas. Progress towards conservation and other objectives is monitored through the system to evaluate management.

CHAPTER 5

5.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The findings of the audit on management of protected areas are based on the efficiency and effectiveness of the Department of Wildlife and National Parks in managing protected areas. Thus, protected areas were assessed based on their effectiveness in achievement of laid-down strategies, goals and objectives of the Department as well as their implementation for each protected area that were as outlined in the Management Plan.

5.1 DEVELOPMENT AND REVIEW OF MANAGEMENT PLANS

The National Parks and Game Reserves Regulation No. 3 requires that a Management Plan (MP) be prepared for each protected area (Game Reserve or National Park) in order to aid the Department of Wildlife and National Parks (DWNP) to control, manage and maintain protected areas (PAs) in accordance with best international conservation practice. Management Plans are to be revised every five years so that they remain relevant to the objectives of conservation and economic empowerment, through utilisation of natural resources, in order for them to promote sustainable tourism.

Documents reviewed indicated that all protected areas visited except for Francistown Educational Game Reserve had Management Plans. However, such Management Plans had not been reviewed within the statutorily prescribed five-year period. For example, the Moremi Game Reserve (MGR) Management Plan of 1989 was reviewed in 2007. That meant that, there was an 18-year period between the 1989 and 2007 Management Plans without any review contrary to the requirements of National Parks and Game Reserves Regulations. The status quo prevailed at the Kgalagadi Transfronteir Park (KTP) and the Chobe National Park (CNP). KTP was still guided by the 1997 MP while Chobe National Park (CNP) still used the 2002 MP although there was the latest MP of 2009. In essence, the DWNP Management had not reviewed any of the MPs in use at the time of audit for all the 3 protected areas within the five-year period as required by the National Parks and Game Reserves Regulation No.3 (7).

All protected areas visited failed to review their Management Plans within the prescribed 5-year period, contrary to the requirement of the National Parks and Game Reserves Regulations. This was a clear indication that there had been an

advertency on the part of the Department to review Management Plans. This meant that the existing Management Plans were not in line with the prevailing ecological challenges and biodiversity developments within protected areas. For instance, according to the Elephant Management Plan of 2007, the rapid growth of elephants populations from 50 000 in 1989 to 155 000 in 2009 and the declining populations of springboks from 50 332 in 2004 to a 22 863 in 2005 indicated new challenges within protected areas, which required contemporary management approaches. These challenges extended to the detrimental effect on the woody vegetation structure within protected areas that was associated with the elephant populations, more especially at the Chobe National Park area. This also meant that the socio-economic challenges that were supposed to be integrated into the Management Plans in order to manage the parks sustainably, were not addressed (this is extrapolated below at paragraph 5.2).

In the opinion of the Office of the Auditor General (OAG), failure by the DWNP to facilitate the development and review of Management Plans of protected areas, negatively affected the ability of the DWNP to control, manage and maintain Protected Areas (PAs), in accordance with best international conservation practice. This was reflected by the inability of the DWNP to determine factors that contributed to declining populations of certain species of animals whilst others experienced rapid growth simultaneously among others.

Recommendation

The OAG recommends that the Director of the DWNP should ensure that all the protected areas' Management Plans are developed and reviewed within the predetermined five-year period to ensure that they remained relevant to prevailing ecological, socio-economic and the conservation challenges within and around protected areas.

Management comment

Management acknowledged that indeed the DWNP had not reviewed Management Plans every 5 years as per the regulations. As a result of the cost factor arising from lack of in-house capacity and the need to outsource the exercise, the DWNP was constrained to review Management Plans for all protected areas within 5 years. Furthermore, Management stated that the relationship between elephants and other animal species including springboks and humans should be investigated scientifically in order to establish factors contributing to the decline of springboks.

5.2 IMPLEMENTATION OF MANAGEMENT PLANS

The Management Plans are aimed at aiding protected areas to conserve; maintain the wilderness; facilitate sustainable economic benefits for the country; facilitate tourism development; facilitate the socio-economic and cultural benefits to the communities; enhance wildlife educational objectives and facilitate relevant research in protected areas. These aims are achieved by providing and regulating the appropriate recreational and tourism services including; the gazetting of Community Use Zones (CUZ) as well as facilitating the operations of Community Based Natural Resources Management.

However, Park Managers had not implemented some of the key proposed initiatives of their Management Plans (MPs). For example, there were no Community Use Zones designated for communities within Chobe National Park (CNP), Kgalagadi Transfronteir Park (KTP) and Moremi Game Reserve (MGR) contrary to the Management Plans for all the aforementioned 3 protected areas. Moreover, the Moremi Game Reserve (MGR) had not implemented the Low Density Tourism Zones (LDTZs) which entailed the designation of low impact activities such as Accompanied Walking Areas (AWAs) and overnight camping in wilderness camp sites. For example, the proposed LDTZs in MGR included the Chief's Island LDTZ, Jedibe, Xepa, Xigera and Xaxaba amongst others; which had not been utilised as proposed in the MGR Management Plan of 2007. Therefore, none of the above-mentioned proposed activities relating to community use zones were carried out for the communities within the park.

Failure by the Park Managers for the 3 protected areas to designate CUZs within the park resulted in lost socio-economic opportunities for communities within the periphery of the park. The communities lost out on the proposed tourism activities such as walking path ways, cultural and, photographic tourism as well as wilderness camping sites within the park. All these proposed activities would have played a significant role in conserving the existing fauna and flora within Botswana's parks. This was so because, they could have facilitated sustainable economic benefits for the country by diversifying Botswana's resource utilisation based tourism to a much more sustainable non-consumptive tourism that did not involve hunting quotas as was the case in the Community Hunting Areas (CHAs) or Wildlife Management Areas (WMAs). Furthermore, the implementation of MPs could have facilitated locally-driven tourism development; socio-economic and cultural benefits to the communities; and enhanced wildlife educational objectives.

Lack of implementation of Management Plans (MPs) to the letter at parks and game reserves was also on account of unfamiliarity of the content of the MP by the Park Managers. This was observed in Moremi Game Reserve (MGR) where

the Park Manager was not familiar with the content of the 1989 or the 2007 MPs. However, it was apparent that the private operators within the MGR were much more enlightened with the content of the Moremi Game Reserve Management Plan since they had already initiated some of the proposed activities such as walkways without the authorisation of the Park Manager. As a result of failure by the Park Managers to implement the Management Plans on account of unfamiliarity with the content therein of the documents, local communities including Community Trusts, were in the dark on their role within the parks. For example, two Community Trusts (Chobe Enclave Conservation Trust and Okavango Kopano Mokoro Trust) interviewed at Chobe areas and Ngamiland (MGR) respectively, were also not aware that there were potential cultural and socio-economic tourism activities for them in the parks. As far as they were concerned, protected areas were the preserve of the DWNP whilst their interest was confined to WMAs or CHAs where they were allocated hunting trophies.

The OAG is of the view that inadequate implementation of Management Plans within protected areas remained the single most thorny management challenge in all protected areas. It should be noted that Management Plans remain the most critical operational and management guide in the management of protected areas. Thus failure to appropriately implement them (that is, MPs) may cast the objectives of creating protected areas a national failure. This is so more especially, when their ecological integrity is compromised with consequent reversal of economic gains associated with tourism that remained the second important engine of Botswana's economy.

Recommendation

The OAG recommends that DWNP Management should ensure that Park Managers appropriately implement Management Plans and engage all stakeholders more especially communities within the periphery of protected areas, in order to facilitate utilisation of natural resources therein, in an optimal and sustainable manner.

Management Comment

Management of the DWNP concurred with the finding of the Auditor General that some activities of the Management Plans such as the allocation of Community Use Zones (CUZs) were not implemented as proposed in the Plans. Management was of the view that communities derived sufficient benefits from the activities associated with the community based natural resources management program (CBNRM) to the extent that there was currently no need for the communities in the area to use Community Use Zones. The allocation of CUZs will be considered in future as and when the need arises. However, the DWNP acknowledged that there was need to find additional avenues for the involvement of communities in the management of protected areas.

On a related but different observation made by the Office of the Auditor General, the DWNP indicated that walking safaris were permitted in the concession areas that have been allocated to lodge operators within protected areas. However, the undertaking of the activity was limited by lack of capacity amongst professional guides. None of the guides had the relevant qualification to conduct walking safaris within protected areas. On the overall, the DWNP was agreeable to implementation of the Management Plans for the various protected areas.

5.3 ECOLOGICAL INTEGRITY

The sustainability of tourism is inextricably linked to the sustainability of ecology and biodiversity within protected areas. Ecology here refers to the enhancement of environmental and ecological quality and serenity; conservation of genetic resources and essential life support systems; and protection and conservation of natural, scenic, aesthetic and cultural principles and values. Thence, Botswana's tourism strategy is driven by the high value-low volume policy that is meant to attract few-high net tourists who can sustain the country's tourism ambitions without necessarily crowding her popular tourism spots, thus negatively affecting the integrity of the ecology (Botswana Tourism Masterplan, 2000; Botswana National Ecotourism Strategy, 2002). Therefore, the Department of Wildlife and National Parks (DWNP) developed management interventions in order to continuously maintain and protect the soundness of the environment and its surroundings. Examples of such interventions include Conservation and Management of Elephants in Botswana of 1991, Park zonation and limits of acceptable change, and the Chobe Riverfront Plan or the decongestion plan.

5.3.1 Elephant Population Explosion and Environmental Degradation

The Conservation and Management Plan of Elephants in Botswana of 1991 intervention capped the total population of elephants in Botswana at 60 000 based on the carrying capacity of protected areas, including Wildlife Management Areas (WMAs). The Plan also proposed the removal of about 3000 elephants per year as a way of ensuring that the 60 000 upper limit is not exceeded. The main objectives of these interventions and elephant management in Botswana are inter alia to prevent, reduce or reverse unacceptable elephant induced environmental changes and optimise the socio-economic benefits from sustainable utilisation of elephants. The prevention and reduction of unacceptable elephant induced environmental changes was to be achieved by bringing impacts of elephants to within limits of acceptable

change and by protecting samples of habitat types that are threatened by elephant in order to preserve parts of the original vegetation diversity and create species seed banks for the future.

However, the DWNP had not implemented some of the management interventions that were meant to conserve the environment and its animal species in diversity. For example, the population of elephants was not controlled through removal or culling as proposed. As a result the population of elephants in Botswana grew rapidly from 55 000 in 1990 to ≈155 000 as at the time of audit in January 2010.

According to documents reviewed and interviews with Management, the elephant population control measures were not implemented, on account of Botswana's signatory to the Convention on International Trade on Endangered Species of Animals (CITES) which barred the country from trading in ivory. In addition, the DWNP was sensitive to the proponents of animals' rights who considered culling (one of the proposed methods of controlling elephant's populations) as cruel.

As a result of failure to implement the control measures, the resurgent upswing of elephants' population had been associated with increased crop damage, damage to farm fence and water supplies; changes in woodland composition and structure. Although there was no scientifically proven evidence to link the increased population of elephants to the degradation of the ecosystem and deterioration of the biodiversity, there was scientific evidence that linked changes to woodland composition to increased or reduced species diversity and abundance of some species. For example there was an estimated 42 990 steenboks' in 2001 as compared to 23 992 in 2005 that is 44% decrease while there were 1056 Roan species in 2001 as compared to 70 in 2005 depicting a decrease of 93 %. This was contrary to the overall goal of elephant conservation and management in Botswana which was to "conserve and optimise elephant populations while ensuring the maintenance of habitats and biodiversity, promoting the contribution of elephants to national development and the communities within their range at the same time minimising their negative impacts on rural livelihoods".

Recommendation

The Office of the Auditor General (OAG) recommends that the DWNP should implement the Elephant Management Plan (with modifications where necessary) in order to control elephants populations to acceptable level as defined by the Management Plan in order to minimise negative impact on the ecology.

Management comment

Management stated that the DWNP was constrained to implement the proposed objectives of the Elephant Management Plan of 1991 by the international conventions to which Botswana was a signatory, such as CITES. Therefore, only 400 licenses were issued annually for export in respect of the elephants. For example, the ethical requirements considered the proposed interventions like culling and sterilisation as unethical. Hence, ignoring the ethical requirements was considered a high risk against Botswana's wildlife driven tourism. Nevertheless, the Elephant Management Plan was under review at the time of audit with a view to addressing some of the challenges raised by the Office of the Auditor General.

5.3.2 Chobe Riverfront Plan

The Chobe Riverfront Plan (CRFP) focuses on the management of the Chobe Riverfront High Density Tourism Zone, which is the area between the Chobe River and Kasane. This is one of the most attractive and sometimes overcrowded with tourists because the game viewing of hippos, crocodile, lechwe, waterbuck and puku that are only found by the river is exceptional. In addition tourists are much more likely to see lions and buffalo there, more than anywhere else as well as large herds of elephants. According to the Chobe National Park Management Plan the CRFP had been developed with the objective of ensuring that that this High Density Tourism Zone (HDTZ) environment remains unspoilt by tourism activities although providing visitors with a memorable and positive experience. The Department of Wildlife and National Park (DWNP) as the custodian of protected areas was also to set up appropriate measures to optimise tourism use of the Riverfront and divert any surplus away from the area. The wilderness of the Riverfront was to be maintained by ensuring that the tourism carrying capacity of the area was not exceeded. The Park Manager of Chobe National Park (CNP) was also to develop and implement the Decongestion Strategy, as a measure to reduce congestion.

However, at the time of audit, the proposals encapsulated in the Chobe Riverfront Plan had not been implemented; five years post their endorsement by the Chobe National Park stakeholders. For example, two-stroke engine boats were still predominantly used instead of the preferred four-stroke boat engines. The Department of Wildlife and National Parks (DWNP) was unable to enforce the use of larger boat engines. The Boat control jetty had not been erected to aid the Department to control various boats on the river contrary to the Management Plan. As a result, Chobe River was polluted by engine emissions of speed boats ferrying tourists along the river fronts to the White Sands. They also caused disturbance and physical harm to animals and plants within the river

and its banks. The number of boats had also not been reduced to the initially planned 42, but instead remained at 50 because the capacity of two-stroke engine boats had a lower carrying capacity. Hence traffic within the river had not decreased, owing to reciprocally increasing tourists' numbers.

Equally, the entry points into the park were not increased contrary to agreed proposal of the stakeholders workshop held on the 20th May 2000. The idea behind the increase in entry points was to reduce traffic congestion in the eastern portion of the Chobe Riverfront (Natanga). As a result, during the audit in January 2010, tourists still used the Sedudu gate to enter and exit the park. Hence traffic had not been reduced along the same route. This had the potential to negatively affect the ecological integrity of the environment because road tracks were used continually without adequate time to recover from increased traffic. Certain routes within the park were unprofitable because the CNP Park Manager had not put-up artificial water points in other strategic areas. Therefore, some of the wild animals had not been drawn away to alternative areas other than the congested riverfront. As a result, CNP did not significantly diversify the viewing points within the park to the benefit of the environment.

The consequences of congestion of tourists within the Chobe River and the eastern side of the park had resulted in the complete erosion of the White Sands. The White Sands was a popular stopping spot for tourists who were embarking on site seeing along the river through to the park. As at the time of audit, the white Sands that characterised the spot had been replaced by the black clay soil that was common along the river banks.

Finally, it should be noted that the midpoint of Chobe River was a borderline between Botswana and Namibia. Notwithstanding, there was no inter-country joint Management Plan. The absence of a Chobe River joint Management Plan for both Botswana and Namibian authorities compromised the effectiveness of the Decongestion Strategy. This was so because Chobe River was a protected area in Botswana while it was used as a community area in the Namibian side. Thus, there was no regulation for the use of the River on the Namibian side of the border; hence the implementation of the Decongestion Strategy on the Botswana side was not complemented by the co-users of the river. It would however; serve the environment well if there was a joint River Management Plan between the two countries. However, OAG appreciates that at the time of the audit the DWNP had already initiated communication with the Namibian authorities to that effect.

The Office of the Auditor General considers that the DWNP had been slow in implementing a noble regulatory framework for the Chobe Riverfront which is an invaluable treasure for the current and forth-coming generations of Botswana.

The repercussions of non-implementation of the Chobe Riverfront Decongestion Strategy may be catastrophic to the economic well-being of residents in the vicinity of the river and compromise the Government's economic diversification if the sustainability of the river is not given the attention it deserves.

Recommendation

The OAG recommends that the DWNP should strive to implement the Chobe Riverfront Plan. It is further recommended that the Director of DWNP should plead with the Ministry of Environment, Wildlife and Tourism to persuade their Namibian counter-parts in order to develop a joint Chobe River Management Plan.

Management comment

The DWNP stated that they will strive to implement all practically possible and appropriate components of the Management Plan. For example, the stoppage of 2 stroke engines at Chobe National Park was effected as of March 2010. Furthermore, the Jetty at the park entry point was set-up to enforce compliance to the requirements of the Chobe Riverfront Plan. In addition, 4 additional artificial watering points had been established in CNP in order to divert wildlife and traffic away from the Chobe River to alternative watering points for the purpose of reducing congestion at the Chobe River Front. On a different and related issue, Management indicated that the management of the river with the Namibians will be dealt with effectively once the KAZA TFCA is fully operational as the river falls within the KAZA TFCA initiative.

5.4 STAKEHOLDER PARTICIPATION

The PAs are bordered by WMAs while the latter is in the periphery of communities. The Wildlife Conservation Policy of 1986 states that in order for the economic full potential of wildlife industry to be realised, communities and the private sector must be seen to be actively involved in the management of wildlife. This is because the private sector has vested interest in the management of protected areas since the vibrancy of their businesses is reliant on the sustainability of the latter. The creation of Local Advisory Committees (LACOM) was meant to facilitate the tripartite alliance of the Communities, Private Sector and the Government in order to optimise conservation, maximise the economic utilisation of animal and plants species and unlock the untapped conservation sensitive tourism opportunities such that product diversification is realised in existing or non-existing tourism activities.

5.4.1 Community Based Organisations

According to the Tourism Policy of 1990 the Communities were to be provided with indirect and direct benefits from tourism activities in order to encourage them to appreciate the values of wildlife and its conservation. Additionally, the National Development Plan 8 (NDP 8) states that “Community based resource management is not restricted to WMAs but can take place inside National Parks. Government will seek to increase public participation in the management of these protected areas and the derivation of financial and other benefits from these areas by these communities”. This was given credence by the National Parks and Game Reserve Regulations that says “Community Use Zones shall be for the use of designated communities living in or immediately adjacent to the National Park”. The NDP 8 also states that “A high degree of public support is needed for Botswana to effectively realise the integration of development of the wildlife resources into the economy of the country”. It is for this reason that Park Managers are expected to facilitate the formation of the Local Advisory Committees (LACOM). Additionally, the Moremi Game Reserve Management Plan of 2007, states that LACOMs regulations were in process in order to function as advisory bodies to the Director of the DWNP. In their absence, informal consultative committees such as the Local Consultative Committees and the Local Stakeholder Advisory Committees were to be established pending the establishment of LACOMs.

The OAG observed that all protected areas except the Chobe National Park (CNP) had neither facilitated the establishment of LACOM nor informal consultative committees such as, the Local Consultative Committees and the Local Stakeholder Advisory Committees. This meant that all Park Managers except that of CNP had not created a formal platform for the community through all its structures such as the Community Trusts, Tribal Administration and Community Based Organisations (CBOs) amongst others, to interact and share ideas with the DWNP on innovative ways of managing protected areas. As a result, the relations between the Communities and DWNP remained limited to the management of hunting quotas which were effectively outside the parks. The parties (DWNP and Communities) did not have a cordial relationship as indicated by the persisting human-wildlife conflicts that harboured on ineffective interactions. This was corroborated by Helen Suich (2006) (component 5 of Okavango Delta Management Plan) that indicated that 24% of the victims of crop destruction by elephants in Ngamiland (Moremi Game Reserve) did not report such incidents to the DWNP because the latter was considered ineffective in administering the compensation system as well as in responding to the reported incidents. As a result, community-farmers considered wild animals as nuisance instead of part of their economic resource as indicated

above. Hence, farmers partook in killing wild-animals that caused damage to their property (*this is extrapolated in paragraph 5.5.2*).

Furthermore, the near non-existent input of local communities in the management of protected areas (PA) eliminated their much needed contribution to effective management of PA, which they acquired over many years through their interaction with the environment. This was especially true in as far as integrating the indigenous knowledge of the communities with expertise held by the DWNP personnel. This observation was corroborated by Ashton, Turner, Jensen, Mundy and Bearden (2005) in their: *Development of a five-year Research Strategy for the Okavango Delta Management Plan (ODMP)*. According to them, the informal Committees' participation would have facilitated a cross section of interest groups and facilitated support to DWNP in the management of protected areas from all important stakeholders. This was not the case. As a result, local communities felt excluded in the management of protected areas.

Recommendation

The OAG recommends that the DWNP should ensure that all Park Managers facilitate the creation of Local Advisory Committees. This will encourage the active participation of Communities in sundry, in the management of protected areas and hence integrate them into their socio-economic well-being, partake in their management and ultimately minimise potential human-wildlife conflicts among others.

Management comment

Management of the DWNP concurred with the finding that most of the parks were still lagging behind in the creation of the local advisory committees. However, the existence of the Chobe National Park Local Advisory Committee was being replicated and/or initiated in Makgadikgadi/Nxai National Park. Therefore, the recommendation on the creation of the LACOMs for all the protected areas was endorsed by the DWNP.

5.4.2 Private Sector

The draft Tourism Master Plan of 1998 states that "It is unquestioned that sustainable economic development has to be private sector driven and the commercial activities of the public sector should be kept to the minimum", hence commercially sustainable tourism activities should be identified for privatisation. This is in addition to the Wildlife Conservation Policy that places emphasis on permanent accommodation as opposed to casual campers and spreading economic benefits over a wider area involving more citizens. The

achievements of these initiatives are associated with increased foreign exchange earnings, employment generation and tourist activities carried out on an ecologically sustainable basis. Thus Local Advisory Committee (LACOM) was to create the platform for enviable interaction between the private sector and other stakeholders more especially the communities and the Department of Wildlife and National Parks (DWNP) on behalf of the Government of Botswana.

At the time of audit, Moremi Game Reserve (MGR) and Chobe National Park (CNP) had already privatised some of their wilderness camping sites in an effort to promote citizen participation in the management of wildlife through tourism activities. However, it became clear during interviews with Management that there was lack of clarity on the role of Park Managers on monitoring Private Operators' activities within parks. The Office of the Auditor General (OAG) found out that Park Managers and Regional Wildlife Officers in the audited protected areas were not acquainted with the details of the business relationship between themselves and the private operators. That is, Management at Regional and District levels were of the view that the privatisation process was not transparent.

This complicated the public-private partnership because the driving force behind park management being Park Managers was not kept on board about the privatisation process. The details of the privatisation process were thus a preserve of the Private Operators and the Director of the DWNP who was perched hundreds of kilometres away from the parks. This observation was corroborated by both the Park Management and the Private Operators. As a result of the centralised approach to the privatisation process and lack of transparency, Park Managers who were based at the parks could not provide adequate assistance and/or solutions on operational issues raised by their private sector counter partners. Thus failure to involve Management at Regional and District levels contributed to unforeseen recuperations. For example, the Private operators alleged that the DWNP collected both entry and camping fees from tourists more than 12 months ahead of the latter's arrival in Botswana. That is, the Government had already collected camping fees from tourists in 2008 ahead of their visits in 2009 and 2010 whilst the new fees were introduced in 2009 for outsourced wilderness camping sites.

Thus, this had affected their bottom-line, since the camping sites were utilised whilst under their management, yet revenues pertaining to the tourists' enjoyment of camping sites services had already accrued to the Government. It is nevertheless, important to state that the role of the private sector in the management of protected areas was quite significant. This is discussed in detail at sub-paragraph 5.6.1.

Recommendation

The OAG recommends that Management at the DWNP should ensure that they consistently observe the principles of Good Corporate Governance such as transparency when implementing sensitive initiatives that affect citizens of Botswana as well as their employees such as the privatisation process. This will ensure that there is good working relations between all parties involved and ultimately such initiatives will achieve their intended objectives.

Management comment

Management agreed with the finding of the OAG that camping fees were collected prior to the privatisation of the campsites in accordance with the statutory requirement that bookings by tourists can only be confirmed following payment of the deposit in the form of camping fees. However, management stated that they were oblivious to the said lack of involvement and knowledge of employees in the outsourcing of campsites. However, they blamed they were of the view that may be the transfer of officers might have contributed to minimal dissemination of information regarding the outsourcing of campsites.

5.5 PUBLIC RELATIONS AND EDUCATION

The Department of Wildlife and National Park (DWNP) is aimed at ensuring that there are opportunities for the education of the public especially schoolchildren. The objectives for public education are wide-ranging. Public education is aimed at providing opportunities and facilities which enable communities to understand the (a) impact of consumptive uses of natural resources; (b) economic benefits of conservation; (c) importance of conservation of natural resources; and (d) tourist information and interpretation. In order to achieve these objectives, protected areas had to have facilities, materials and trained staff in order to design and implement the educational programme.

The DWNP had the Division of Community Extension and Outreach (CEO) which played a critical role towards the achievement of the public relations and education objectives. According to Park Managers, all the protected areas visited, invited public schools each year to their areas in an effort to raise public awareness and educate pupils and students about the importance of protecting and maintaining wildlife and the biodiversity within protected areas. For example, Kgalagadi Tranfronteir Park (KTP) had undertaken public awareness within the Kgalagadi District by addressing at least 17 Kgotla Meetings and 22 schools in the financial year 2008/09. However, this was not enough because the economic interests of the Communities were non-existent

in the parks (*discussed at paragraph 5.4.2*). This was contrary to the proclamation of the National Development Plan 8 that indicated that “increase in public participation in the management of protected areas and the derivation of financial and other benefits from these areas by these communities was a priority for enhancing the input of communities in the management of protected areas”. Notwithstanding this limitation on the part of the protected areas, there were educational facilities at Ngoma, Phoha and Kasane in the Chobe National Park.

Nevertheless, protected areas had not achieved all their intended objectives with regard to raising public awareness. For example, the KTP had not yet initiated a Special Education Unit that was envisaged to take care of the Mobile Education Unit while Community Wildlife Conservation Centres were not yet established at the time of audit in March 2010. In addition, there was no market segmentation in wildlife education and interpretation. The same information was disseminated to school children, tourist and communities in the periphery of protected areas. This made the public education and relations ineffective because the same information was disseminated to different target groups contrary to the proposed strategy of targeted information dissemination strategy as proposed in the KTP Management Plan.

Recommendation

The OAG recommends that the DWNP should ensure that Management of all protected areas develop strategies for public education and relations for their respective protected areas. The strategy should be market specific that is, different information should be devised and accordingly disseminated to each target group.

Management comment

Management appreciated the OAG’s recommendation for the development of market specific strategies for public education and relations for the respective protected areas. The idea will be explored within the limits of the DWNP capacity both human and financial

5.6 PARK MANAGEMENT

The Wildlife Conservation and National Parks Act stipulate measures that have to be taken in order to maintain Botswana's Protected Areas (PAs) in accordance with the conventions to which the country is a signatory. Such measures include the control of protected animals, entry into them as well as

Regulations in respect of them. In addition, the Regulations set out the manner with which protected areas should be managed. For example, Section 7 of the Act, clearly outlines the requirements that should be met in order to be allowed into PAs while Section 8 of the same Act, describes prohibited acts in a PA. All these legislative requirements and regulations require strict enforcement by the Divisions of National Parks and Game Reserves personnel. Such enforcements are aimed at reducing human/wildlife conflict, eliminate poaching and ensure protection and conservation of Botswana's natural, scenic, aesthetic and cultural principles. The critical components of Park Management in Botswana entail the reduction and elimination of poaching through deliberate interventions, minimising human-wildlife conflicts as well as integrating research into the activities of the park in order to assess the efficiency and effectiveness of Management interventions.

Section 17 (1) (2) of the Wildlife Conservation and National Parks Act facilitates targeted wildlife protection by stratifying them into three categories being, protected game animals; partially protected animals; and those that can be captured and hunted within the provisions of the Act. Some of the animal species that are completely protected from hunting are cheetahs, giraffes, rhinoceros, hippopotamus and wild dogs while those that are partially protected includes lions, leopards and elephants. In an effort to eliminate poaching and/or reduce the fatalities of wild animals especially against protected game animals, the DWNP developed and implemented interventions geared towards that. For example, the National Strategy for Rhino Conservation in Botswana (2005) was developed to eliminate rampant poaching of both black and white rhinos while restoring their populations. The Office of the Auditor General (OAG) decided to focus on the efficiency and effectiveness with which the Botswana Rhino Management Strategy was implemented within protected areas in order to establish whether the pre-determined objectives were achieved. The rhinos being the most endangered animal species in Botswana and classified as endangered species under the CITES listings were declared "locally extinct" in 1992 in particular black rhinos.

5.6.1 Management of Endangered Species

Following the declaration of black rhinos as extinct in the 1992 survey; and only 19 white rhinos in existence in the entire Botswana, the Department of Wildlife and National parks (DWNP) together with stakeholders introduced management interventions geared towards the restoration of rhino population in Botswana. The near extinction of rhino population in Botswana by rampant poachers heralded the development of Botswana Rhino Management Strategy (BRMS) that set specific and measurable and time-bound objectives. First, the Botswana Rhino Management Committee (BRMC) was to be established that

comprised the DWNP and 4 representative members of the private sector. The Committee was to meet bi-annually, compile reports on rhino status and population performance for each population and approve areas where rhinos could be conserved amongst others. Second, the “rhino populations in Botswana were to achieve an overall growth of at least 5% per annum, through adaptive management”. The target conservation goal was to have 500 white rhinos within 20 years (by 2025) and 20 black rhinos (within 10 years) by 2015. Third, three healthy breed populations of white rhinos were to be established in fenced sanctuaries as well as “establish a secure breeding population for Black rhino in fenced sanctuaries”. Finally, at least one secure unfenced viable population of white rhinos were to be established within former range in cooperation with the private sector.

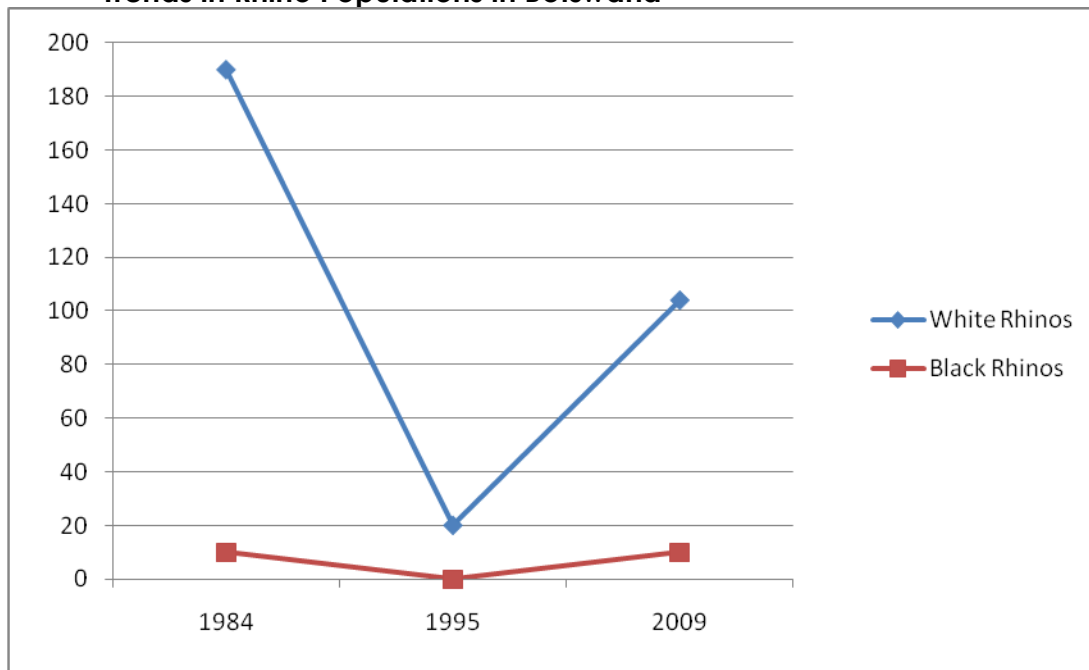
At the time of audit (January-March 2010), the Botswana Rhino Management Committee (BRMC) was in existence and drew membership from the Department of Wildlife and National Parks (DWNP), Khama Rhino Sanctuary, Mokolodi Nature Reserve, Tholo Farm (Edo's Camp) and Jwana Game Park. According to the Global Environment Facility's Small Grants Programme (2007), the committee played a pivotal role in providing information on “rhino populations, species per sanctuary and management issues of the species”. Furthermore, the Committee contributed immensely in ‘The role of communities in the management and conservation of rhinos in the "*Operation Roaming Rhino project*" in the Okavango Delta (BOT/05/19), funded by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF). The project mobilised and educated the Communities living in areas adjacent to the habitat on the value of rhinos, the need for their policing and their contribution to the economy of Botswana. The project also trained Communities especially Community Escort Guides, Professional Guides and Poolers on the identification of rhinos using identification kits. The training was done in collaboration with the DWNP. Furthermore, the partnership between the DWNP, Government and members of the private sector played a pivotal role in restoring Botswana's rhino population.

The healthy growth of the rhino populations was demonstrated by a healthy growth rate of rhinos, the Mombo Rhino Project was launched in 2001 in order to re-introduce the rhino populations back into the Moremi Game Reserve (MGR). The project was a joint initiative of the Wilderness Safaris, Wilderness Safaris Wildlife Trust and the DWNP that saw the re-introduction of rhinos into the unfenced MGR in 2001. According to the Swara Magazine (2009) there were 44 white and 4 black rhinos in the Moremi Game Reserve. That meant that by the end of 2009 there was an overall population of 102 white and 7 black rhinos in Botswana. Hence, it was the conclusion of the OAG that, the Botswana Rhino Management Strategy (BRMS) was by all means successful because, the DWNP and stakeholders had achieved at least 20.4% of their required 20% population

target of white rhinos. This meant that, the DWNP had exceeded the expectations of the BRMS population targets by 0.4%. On the other hand, the black rhino population was expected to have been 4 in 2009. However, the DWNP had achieved a population of 7, thus translating into a population success rate of 175%. Hence, the DWNP achieved the population goal of BRMS by 75% over and above that predetermined.

The achievement of the Botswana Rhino Management Strategy was a result of an intensive collaboration between all stakeholders' input into rhino protection and management. The other stakeholder that had played a significant role in the protection and monitoring of rhinos movements more especially within the Moremi Game Reserve (MGR) was the Botswana Defence Force (BDF) that provided support to the Anti-Poaching Unit (APU). Notwithstanding these achievements, the management of rhinos was not without challenges. Documents reviewed by the OAG, indicated that the monitoring of rhino movements was complicated by the difficult terrain within the MGR as well as floods plains that characterised their spoors, hence some of the rhino spoors were not accessible by road. Furthermore, radio transmitters that were fitted on the initial translocation had ended their life and thus replacements were needed. According to the Swara Magazine (2009) new transmitters were fitted to only 7 white rhinos and to only 1 black rhino. This challenge was confirmed by the Commander of the Anti Poaching Unit (APU) in Maun Regional Wildlife Office who indicated that this negatively affected the DWNP monitoring of rhino movements because they had wide spoors that stretched 4 kilometres (for black rhinos) to 35 kilometres (for white rhinos).

Trends in Rhino Populations in Botswana



Nevertheless, the Office of the Auditor General is of the view that in the overall, the DWNP had been effective in the management of endangered species as demonstrated not only by the healthy growth rates of rhino populations but elephants and giraffe population which stood at ≈155000 and ≈11 000 (in 2004) respectively.

Management Comment

Management appreciated the positive feedback on the good management of the endangered species more especially rhinos as observed by the OAG.

5.6.2 Human – Wildlife Conflict

According to the DWNP there had been an increase in human wildlife conflicts in the past two decades. The increase in the expansion of livestock in the settlements had encroached into the wildlife areas. It was therefore important to strike the balance between wildlife and humans activities in order for both animals and humans to live side by side together peacefully. During the National Development Plan 9, the Government had planned to introduce interventions aimed at avoiding, eliminating and mitigating the ensuing conflicts. Amongst the interventions to be introduced were fencing, increasing problem animal control manpower and opening up new station camps and providing adequate equipment and boreholes/artificial water points.

As at the time of audit, the DWNP had already implemented some of its proactive human wildlife interventions by fencing and providing artificial water points. For example, Kgalagadi Transfrontier Park (KTP) was already fenced, in order to reduce conflicts between humans and wild animals. Nonetheless, in the Kgalagadi District, which covered the Kgalagadi Transfronteir Park the number of livestock killed by different animal species recorded for the year 2008/09 remained catastrophically high for a region so reliant on arable farming and livestock rearing (See Table 4 below). According to the KTP Progress Report of October to December 2008, the predator proof fence (PPF) was old and on the surface of the ground, thus lions easily dug underneath and escaped into the livestock grazing land. The report concluded that the electric fence was not effective due to lack of monitoring. Minimal monitoring of the PPF was said to be caused by shortage of resources, both human and patrol vehicles, hence there was no regular monitoring as required. As a result, there was an increase in reported cases of damage caused by wild animals. For example, the April to June 2007 KTP Progress Report indicated that, 5 cases of lions' harassment outside the park were reported against 2 during the same period in 2006. This

indicated an increase in reported incidents by 3, which translated into a 150% increase in incidents of lion attacks on livestock in the Kgalagadi livestock areas. Overall, 382 livestock were killed by predators with cow/heifer and calves most affected respectively as indicated in Table 4 underleaf. Lions were the leading marauders killing 157 livestock out of 382, which accounted for 41% of the reported incidents. Leopard was the second most problematic predator which targeted calves more than other domestic animals. Table 4 indicates that leopards killed 64 calves out of the 108 killed by wild animals. Thus, ≈60% of calves were killed by leopards.

In the Moremi Game Reserve (MGR), goats were the most killed livestock (see Table 5 underleaf). At least 270 goats out of a total of 730 livestock were killed during the year 2008/09. This meant that 37% of the killed domestic animals were goats. The other most killed domestic animals were cows/heifers, oxen, bulls which totalled 251 whilst 131 calves were killed by wild animals, especially predators. According to Problem Animal Control Record Sheet for Maun District, 35 and 25 goats out of a total 68 were killed by leopards and lions respectively in October 2008. That meant that almost ≈90% of goats were killed and/or attacked by leopards and lions only. On one hand, lions accounted for killing 34 cattle out of 44 killed in August 2009. That meant more than 77% of cattle mortality was as a result of lions predation. On the other hand, leopards were serious menace on farmers who reared goats as they killed 14 out of 24 in August 2009. That translated in almost 60% goats killed as a result of lions' predation.

Table 4: No. of livestock killed by different species of wild animals during 2008/09 at Kgalagadi area

Type of species	Lion	wild dog	cheetah	Leopard	Total
Cow/heifer	81	50	1	2	134
Toll/Bull	12	5	0	3	20
Calf	16	12	16	64	108
Horse	12	0	0	0	12
Foal	2	2	0	36	40
Goat/sheep	1	0	8	22	31
Donkey	31	4	0	0	35
Mule	2	0	0	0	2
Totals	157	73	25	127	382

Source: Annual Progress Report (2008/09)

Table 5: No. of livestock killed by different species of wild animals during 2008/09 at Ngamiland District (MGR area)

Months	Oct	Nov	Dec	Jan	Feb	Marc	Apr	May	Jun	Jul	Aug	Sep	Total
Type of animal species													
Cow/Heifer/Ox/Bull	26	17	23	16	10	29	12	5	12	29	44	28	251

Calf	8	8	7	14	3	8	11	4	7	19	24	18	131
Horse	1	3	2	1	0	2	4	2	0	4	1	2	21
Foal	4	6	1	4	2	2	3	2	0	0	1	0	25
Goats	68	24	13	37	4	18	8	3	9	21	34	31	270
Donkey	5	3	4	2	0	2	1	2	1	1	9	2	32
Overall total	112	61	50	74	19	61	39	18	29	74	113	81	730

Source: An extract from the Problem Animal Control Record Sheet Maun District

Tables 4 and 5 indicate that predators more especially lions, leopards and wild-dogs threatened the sustainability of livestock rearing in both the Kgalagadi and Ngamiland areas where the KTP and MGR were located. However, it was clear that, the Ngamiland farmers were worst affected by predators as compared to those in the Kgalagadi area. This was indicated by high mortality rates of 730 livestock killed by predators as compared to 382 in Kgalagadi area. The main cause for high and sustained predation of livestock by lions in particular, was on account of failure by the Park Management of Kgalagadi Tranfronteir Park (KTP) to ensure that captured lions were rehabilitated after predation incidents as well as an ineffective electric fence that was not adequately monitored and maintained. For instance, according to the Kgalagadi District First Quarter Report of 2008, 10 lions were captured, 2 of them were trans-located to Addo Park in South Africa for a two-week treatment. Of these, 6 were later on killed by farmers. This furthered conflicts between the farmer-communities and the Department of Wildlife and National Parks (DWNP).

As a result of lion predation on livestock the population of lions had reached their low levels in decades because of the high rate of their mortality exerted by affected communities. In Kgalagadi district alone, 18 lions, 8 leopards, and 1 caracal were killed by farmers during the financial year 2008/09 in reaction to the marauding predators on their livestock.

Furthermore, human-wildlife conflicts were not restricted to humans and predators only. Elephants, more especially in Moremi Game Reserve (MGR) and Chobe National Park (CNP) areas threatened the security and economic livelihood of residents. Documents review revealed that during the February to May period in the 2009, elephants' destruction on crops reached disproportionate levels. The Problem Animal Control Sheet for Maun District indicated that in February 2009, elephants accounted for 66 reported incidents out of 90. In March 2009, 114 out of 187 incidents reported that destruction was caused by elephants whilst in June elephants were blamed for 120 incidents out of 169 reported. Elephants' destruction on crops was unprecedented, up-rooting fences and poles, destroying yard fence, harassing residents at the fields and breaking JOJO tanks in search of water. The destruction of JOJO tanks indicated that the provision of artificial water points was not effective as a method of keeping elephants away from harassing residents and destroying their properties.

The increasing incidents of crop destruction by elephants as well as predation by other wild animals was said to be exacerbated by failure of the Department of Wildlife and National Parks (DWNP) in significant increase in manpower in order to ensure intensive monitoring of wildlife movements as pledged by the Department in the National Development Plan 9. This also contributed to inadequate monitoring of Predator Proof Fence (PPF) that resulted in uncontrolled movements of wild animals outside the Protected Areas (PA) as well as outside their traditional corridors especially the Wildlife Management Areas (WMAs). Inadequate manpower at the DWNP had been taken note of by communities around the PA. Research by Helen Suich (Okavango Delta Management Plan Component 5: Wildlife Management – Human Elephant Conflict) (2006) indicated that wildlife destruction of the communities' crops and properties had impoverished them to an extent that they perceived elephants in particular, as nuisance rather than a national treasure that had to be protected. The findings of the research indicated that 89% of households did not have enough food to feed their households due to the damage caused by elephants on their crops; 98% households surveyed had suffered from human-elephant conflict during the 2004/05 cropping season and 24% of the victims did not report the destruction to the DWNP at all because of the high costs involved, the duration it took to receive the compensation as well as lower compensation rates.

Based on the livelihood activities in the Ngamiland area as indicated by Helen Suich (2006), 98% of residents made their living on cropping and gardening and 82% on livestock production, it was only logical to conclude that wild animals impoverished Communities around the protected areas. Nevertheless, the OAG took solace on effort by the Department to introduce additional control measures such as the use of chilli-pepper to reduce crop damage by elephants in particular especially at the fields. The effectiveness of this method was still to be established as at the time of audit (January to March 2010) since the results had not been realised.

Recommendation

The OAG recommends that, the DWNP should effectively implement intervention strategies aimed at eliminating human-wildlife conflicts and where necessary re-invent new strategies that could effectively reduce the destruction caused by wild-animals in order to normalise human-wildlife relations.

Management Comment

The DWNP stated that they were committed to do whatever was within its powers to reduce Human Wildlife Conflict. Some of the innovative means of dealing with the

conflict that were explored included the use of chilli pepper in the case of elephants and specific game proof fencing for different species.

5.6.3 Research and Monitoring

Research and Monitoring constitutes the critical aspect of effective management of protected areas. This is because protected areas are made-up of complex ecosystems that require carefully planned management interventions. According to the Department's 2004 Research Strategy, the objectives of research are to (a) "compile inventories of ecosystems, plant and animal communities and to establish a baseline in terms of distribution and, where possible, abundance"; (b) monitor ecosystems, natural processes and wildlife populations; (c) facilitate and coordinate pure research; and (d) finally integrate "research and monitoring as an integrated part of adaptive management in support of management directed at conservation objectives of the DWNP". The Management Oriented Monitoring System (MOMS) was thus introduced in 2003 and adopted in 2004 as a suitable means of monitoring, recording, reporting and archiving management activities in protected areas as well as in community hunting areas (CHAs) and wildlife management areas (WMAs). Each protected area had customised and/or prioritised the strategy to its unique ecology.

In keeping with their strategy, Kgalagadi Transfrontier Park (KTP) had sound ecological monitoring that recorded the aerial census annually as well as large carnivore age and sex composition. In addition, there was a vegetation map although there was no evidence to suggest that there was monitoring of sensitive plant communities within the park. There were also records of essential meteorological data, monitoring of predator impact on surrounding stock and accurate monitoring of visitor numbers, distribution and activities in which they participate. Records availed for audit indicated that there was a fair amount of research and monitoring on the aforementioned in KTP.

In the Moremi Game Reserve (MGR) the impact of fire on the vegetation had not been recorded although, Management indicated that there had been able to maintain fire breaks that were aimed at controlling the impact of man-made fires. Notwithstanding a lot of research and monitoring on the impact of elephant on the vegetation in the MGR through MOMS, there had not been conclusive scientific information on the vegetation change as a result of elephant population. However, there had been conflicting research findings. According to Braun (2001), "in large nature reserves it is the environment that regulates elephant numbers and not the other way round". In essence, as long as the elephant population increased then they did not have a negative

impact on the vegetation. According to the researcher, elephants were not a threat to the vegetation instead fire, insects and diseases caused substantial damage to the vegetation. This was contrary to the observations made by the Community Based Natural Resources Management Support Programme (2002) that indicated that elephants changed the vegetation structure significantly in the northern part of Botswana including in the MGR.

In Chobe National Park (CNP) the impact of artificial water points, changes in vegetation, soil and baseline indicators had not been conclusively determined by January 2010. However, tourists' numbers, maintenance monitoring or the condition of tracks were monitored regularly. It was for this reason that the numbers of vehicles and tourists that entered and exited the park were recorded consistently.

Although the OAG observed that there was monitoring through MOMS in all protected areas visited, research was inadequate for management to adopt adaptive management through systematic research. This was because of limited human and financial resources to carry-out extensive and systematic researches within protected areas. In addition, MOMS had not been audited as planned in 2005. Furthermore, data gathered through MOMS was filed in unsystematic manner such that it could not be readily accessed for speedy and accurate decision making and for easy retrieval by researchers and management. That would have facilitated informed decisions on the ecology, biodiversity and habitats of animals and/or plants species.

As a result, the impact of MOMS had been effective in monitoring the on-going activities but not in research. Hence, adaptive management towards the management of protected areas had not materialised.

Recommendation

The Office of the Auditor General recommends that MOMS should be audited so that all the above-mentioned shortcomings are addressed to ensure effective research and effective implementation of adaptive management.

Management comment

Management indicated that indeed the Research Division had capacity constraints as indicated in the finding. The problem was further exacerbated by high staff turnover. However, the Department attempted to facilitate wildlife related research, by encouraging private researchers to conduct research in priority research fields in accordance with their research strategy. The DWNP also indicated that they would appreciate, if the OAG could audit MOMS.

5.7 DEPARTMENTAL CAPACITY

In order for any organisation to achieve its strategic and operational objectives, there should be capacity in terms of manpower, financial resources, information resources and logistical capacity. The capacity should match the activities of the Organisation. The Department of Wildlife and National Park (DWNP) mainly has the responsibility to manage protected areas by inter alia: controlling entry and movement within the protected area, research and monitoring, maintenance and monitoring of electric fence, patrols and inspection, as well as public education and awareness on the importance of wildlife conservation. In order to carry-out its activities effectively, such activities should be streamlined in order to improve the operational efficiency of the Department.

However, the DWNP was not effective in undertaking some of its operational activities such as patrolling the Predator Proof Fence (PPF). According to the Progress Report (July to August) 2008 for KTP, the DWNP had struggled to consistently monitor the PPF because of shortage of manpower and vehicles. There was no crew designated such a responsibility although the fence was more often blown out of line by the sands dunes which were easily carried away by the winds. As result, wild animals especially lions and leopards continued to kill livestock outside the park despite an electric fence that was installed to curb such mishaps (*this extrapolated in paragraph 5.6.2*). This was indicated in the Monthly Report of January 2006, where 11 Problem Animal Control (PAC) Reports were received from the community, whilst only 5 were attended to within the same month. That meant that the performance of the DWNP in KTP translated into a 45% success rate which was below 50% success rate.

In addition, Park Management was expected to facilitate the maintenance of the PA by amongst others providing good access roads or tracks and adequate signage within the parks. However, the game viewing routes together with Mabua and Gemsbok wilderness trails were partly debused because of shortage of staff and equipments. According to Progress Report for Kgalagadi Transfrontier Park (KTP) (July to October, 2008) shortage of staff and equipments

contributed significantly to failure to adequately maintain PA. For example, the Parks Division in Kgalagadi Transfrontier Park (KTP) had only 7 vehicles. However, only 2 out of 7 vehicles were in good condition. That meant the park had a mere capacity of $\approx 29\%$ capacity to carry-out their mandate (assuming that 7 vehicles were enough for full capacity). Shortage of vehicles and manpower was exacerbated by the prevailing difficult terrains within the PA in that vehicles had to traverse daily in patrol and other related activities. The nature of work for the DWNP more especially anti-poaching operations involved the bush-crushing of vehicles because poachers used donkeys and horses in the Kgalagadi area. This resulted in shortened life-span of vehicles.

Shortage of transport and equipment was not limited to KTP only as it was widely reported at other PAs visited. For instance, the Parks Division's Quarterly Report for October – December 2006 in Moremi Game Reserve (MGR) indicated that “no maintenance work was done on bridges as there was still no transport for bridge crew to cut logs for fourth Bridge and for some minor repairs on the Khwai and Third bridges”.

The Park Manager together with the DWNP personnel were also expected to control the movement of tourists within the parks, maintain fire breaks and put-out fires in order to protect wild animals, vegetation, property and tourists within the PA which might be threatened by veldt fires arising from natural causes or human-induced fires. According to the MGR Quarterly Report of October – December 2006 fire breaks in the MGR were not graded due to shortage of equipments and vehicles. Furthermore, in MGR the capacity of the DWNP to patrol the Rhino spoor was compromised by flood plains that made the area inaccessible. For example, the Botswana Defence Force (BDF) and Wildlife Officers were stuck in water on 3 November 2009 whilst they were attempting to attend to the poaching report that fresh spoor was seen in NG 25. The anti-poaching operations were also compromised by ineffective communication radios that easily lost signal. This constraint was raised in the Anti-Poaching Unit Patrol Report dated 11th December 2009 as well as by the Commander of Anti Poaching Unit (APU) in Ngamiland (which encompassed the MGR). The communications radios were said to be worn out according to the Commander (APU). This compromised the capacity of the DWNP more especially the APU in their concerted effort to protect endangered species such as rhinos.

In a related but different matter, centralised decision making by Regional Wildlife Management in planning and budgeting; also contributed to inefficiency. For example, Park Managers were not involved in the planning and budgeting processes affecting their portfolios. Decisions regarding amongst others, budgeting were facilitated by the Regional Wildlife Officers (RWOs) at Regional level without the input of Park Managers. The RWOs' failure to engage Park Managers in decisions regarding parks, resulted in inefficient resources

allocation from Park Managers perspectives. This was so because Park Managers had a schedule of activities that could had monthly costs attached to them and ultimately annually. However, resources allocated Park Managers did not reflect the planned activities submitted by the Park Managers to the RWOs.

The OAG, therefore, opines that the DWNP was overstretched in undertaking a wide array of these activities, more especially road maintenance, fire fighting and road signage. In the overall, the OAG appreciates that the DWNP was able to carry out its mandate in the midst of the constraints discussed above.

Recommendation

It is recommended that the DWNP streamline their activities in order to improve the efficiency and effectiveness of the DWNP in undertaking its mandate in the management of protected areas.

Management comment

Management appreciated the observation made by the OAG that the mandate of the DWNP was huge and cut across several areas that required different specialties. Due to limited human capital and other resources' constraints the DWNP had to do make and do with those limitations to optimise efficiency. As at the time of audit an O&M was conducted within the Department.

Management Overall Comment

Management appreciated the report and indicated that it was an eye opener and efforts would be made to implement the recommendations in earnest.

OVERALL CONCLUSION

It is the conclusion of the Office of the Auditor General (OAG) conclusion that failure to review in time and implement Management Plans by the Department of Wildlife and National Parks (DWNP) was a major challenge in the efficient management of protected areas. This was so because the DWNP did not integrate contemporary challenges and opportunities that could be better managed with the aid of up-to-date Management Plans. Such included would broaden the input of stakeholders more especially Communities within the vicinity of parks as well as the private sector. This is a requirement for Good Corporate Governance in modern states.

Furthermore, ineffective management of problem animals more especially lions, wild dogs, leopards and cheetahs contributed to the rising wildlife-human conflicts. The continued destruction of assets owned by Communities within the range of protected areas by wild animals remained the thorn on the DWNP approach in integrating wildlife into the economic well-being of Communities. Thus, damage perpetrated by wild animals defeated the essence of conservation which was the integral and primary reason for the establishment of protected areas. Nevertheless, it was gratifying to observe that the DWNP had finally found a significant role for the private sector within protected areas as well as outside the national protected areas in the management of endangered animal species especially the rhinos. The role and input of the private sector cannot be overemphasised in reviving the rhino population that had become extinct in national protected areas. This was a clear sign that the private sector and all non-state actors are coming of age in the conservation and protection of our national heritage being the wild animals.

Notwithstanding, it cannot be over-emphasised that inadequate resources in terms of personnel and equipments continue to negatively affect the efficiency and effectiveness of the DWNP in executing its mandate. More resources are needed in research as researchers lacked behind. It is the considered view of the Auditor General that more resources should be invested in research activities in order to enhance the capacity of the DWNP through knowledge generation to effectively manage, protect and execute interventions as and when it is necessary in order to maintain our lead in the conservation of wildlife within the protected areas. It is critical important that more resources should be invested through research activities in order to generate more knowledge on the ecology of Okavango and its inhabitant being humans and wild animals as well as the impact of elephant population on other animal species. This will ensure that the DWNP stays ahead in the management of protected areas.

Finally, it is worth-mentioning that despite all the resource inadequacy that the DWNP faces, clearly more has been achieved in the management of protected areas.