

UNEP - BIODIVERSITY PLANNING SUPPORT PROGRAMME

A country case study

**BOTSWANA: INTEGRATING BIODIVERSITY
INTO THE TOURISM SECTOR**

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Introduction: Abstract brief overview of Botswana

Botswana is a country in southern Africa covering an area of 582 000 sq. km. It has an estimated population of 1.5 million people. Botswana has been the fastest growing economy in the world during 1970 to 1990 with an average annual GDP growth rate of 13 percent. This rate has somewhat slowed down in the last 10 years. It is presently nearly US\$ 3000 per annum. Reasons behind this impressive record include the country's rich mineral deposits, especially high quality diamonds. Though tourism growth is at its infancy, the Government of Botswana views the tourism industry as an important engine of economic growth; this commitment is demonstrated by the recently produced Botswana Tourism Development Master Plan.

In terms of biodiversity Botswana is a land of contrasts. It has world famous wetlands in the north and the arid Kalahari Desert in the centre and southwest. Both these contrasting areas have famous protected areas, the Okavango Delta is the largest inland delta in the world and is a Ramsar site, and the Chobe National Park which has large numbers and varieties of game. Chobe harbours one of the largest elephant densities in the world. To the south, Botswana has the first formally declared trans-boundary park in Africa, the Kgalagadi Trans-frontier Park. There is a transitional ecological area in between these two national parks, the Central Kalahari Game Reserve which is one of the largest game reserves in Africa. There is also a unique huge prehistoric lake, the now dry assemblage of salt pans called the Makgadikgadi and Nxai Pans National Park system which harbours an important habitat for migratory birds. There is the hard veld to the east along the Limpopo River.

Botswana's tourism development is concentrated on wildlife and the wilderness experience and the country is the third most popular tourist destination in Southern Africa.-- after South Africa and Zimbabwe. Tourism development is regulated by government through the Department of Tourism and the Department of Wildlife and National Parks. The tourism industry is mainly run by the private sector with a large component of expatriates. There are great efforts to incorporate the local community based organisations and local individuals through training and tourism awareness creation. Further efforts are geared towards diversifying the tourism product into cultural, historical and other manmade attractions.

Threats to biodiversity include growing human population, overexploitation of wild animals and fuel wood, expanding agriculture, frequent and unpredictable drought, infrastructural developments such as expansion of hotels and tourism facilities, soil erosion leading to desertification, uncontrollable fires, poor inventory and knowledge of species some which are probably endemic, and conflicts with local people resulting from livestock predation and crop raiding by wild animals.

Botswana's National Conservation Strategy Coordinating Agency is in the process of developing a biodiversity conservation strategy and action plan. Botswana is already signatory to a number of international conventions that support biodiversity conservation and sustainable tourism. There are a number of local and international NGOs, which work directly with community based organisations, which have helped

to ensure that tourism development does not compromise biodiversity conservation. Botswana has been practising a policy of high cost, low volume tourism due to the ecologically fragile nature of its tourism attractions. With diversification into other non-wildlife based tourism, this policy is being revised.

Proposed strategies and solutions include the conscious inclusion of the Botswana biodiversity strategy into the Botswana Tourism Development Master Plan; enhancing the growth of local participation and benefits of the tourism sector which will lead to sustainable resource use. There is need to continue with institutional and responsibility reorganisation to give local communities a larger stake in the tourism sector, and enable government departments to be better extension service providers. Reform will also cause those who utilise the environment in the name of investors to plough back their returns into Botswana. There is opposition to the common procedure where transactions by tourists coming to Botswana are finalised and paid for outside the country. Little if any money comes to Botswana and even less goes to the districts to be reinvested there. To the indigenous people, the net economic benefits of tourism are potential rather than actual.

1. OVERVIEW OF PRESENT STATE OF TOURISM DEVELOPMENT IN BOTSWANA

1.1 Relative importance in the national economy

Botswana, the third most popular travel destination in Southern Africa is home to one of Africa's great wildernesses and some of its most striking beauty. Most attractive is the Okavango Delta the world's largest inland delta and the Chobe National Park to the north of the country, both of which have an astonishing proliferation of wildlife.

The tourism industry in the country has developed over the years more through the initiative of private investors than through concerted government efforts. The major tourism attraction to the country has been its wilderness and wildlife.

In 1990 Botswana's government began to encourage tourism, conscious of its over-dependence on a few key industries namely diamonds and beef. The government has since pumped more money and human resources into the tourism industry as part of an economic diversification programme. At present tourism is referred to as Botswana's future engine of economic growth.

The tourism sector has experienced strong growth in recent years. The Botswana Tourism Development Master Plan document gives the following analysis. The number of holiday visitors increased by some 90 percent from 106,800 in 1993 to 203,172 in 1998. The tourists come mostly from South Africa, Europe mainly from United Kingdom and Germany and from the USA and Japan. At the same time the number of rooms for tourist accommodation increased from an estimated 1,780 rooms in 1993 to an estimated 2,375 rooms in 1998 (+33 percent).

In 1997, an estimated P1.1 billion (**1 Pula = US\$ 0.2**) was spent by the tourists who visited Botswana. Of this gross visitor expenditure, it is estimated that some P605 million was retained outside Botswana and that a further P175 million represented (first-round) leakage due to imports.

It has been estimated that the initial injection of visitor expenditure, (minus the monies retained outside Botswana), would lead through successive waves of spending to an ultimate contribution of around P800 million to GDP in 1997. This represented some 4.5 percent of GDP in 1996/97, or 7 percent of non-mining GDP. It is likely that this proportion increased further in 1998.

Credits on the Travel Account of the National Bank amounted to an estimated P495 million in 1997 representing 4.5 percent of the total exports of goods and services. This would suggest that, even allowing for its relatively high import content, 'tourism was the third largest export sector, after diamonds (P7,654 million) and vehicles (P748 million), and ahead of copper-nickel (P343 million) and beef (P243 million).

Direct employment in core tourism-related occupations is estimated to have amounted to 9,900 persons in 1998, or some 4.5 percent of the total number of paid employees in Botswana. Without tourism, the unemployment situation in the main tourist areas (such as the north and northeast) would undoubtedly be considerably worse.

Tourism related import duties are estimated to have contributed P30 million, followed by licenses and fees (P11.2 million), sales tax on hotels and lodges (P10.4 million in 1998/99), lease rentals and resource royalties (P5.2 million). Excluding income taxes, total tourism-generated revenues would be P64million.

There are increased land board rentals and council fees paid by tour operators. These are direct financial contributions to their communities.

1.2 Relative priority in national planning policy

The Government of Botswana's position on tourism is contained in the Tourism Policy, Government Paper No. 2 of 1990. The general objective of the policy is to obtain, on a sustainable basis, the greatest possible net social and economic benefits for Botswana from their tourism resources, scenic beauty, wildlife and unique ecological, geological and cultural characteristics.

Specifically, the objectives are to increase foreign exchange earnings and government revenues; generate employment mainly in rural areas; raise income in rural areas in order to reduce urban drift; generally promote rural development and to stimulate the provision of other services in remote areas of the country; improve the quality of national life by providing educational and recreational opportunities, and project a favourable national image to the outside world.

There is relevant legislation that regulates the tourism industry. They include Tourism Act, 1992, as amended; Tourism Regulations, 1996; Tourism (Licensing order), 1996; Finance (Tourism Industry Training Fund) Order, 1996; Casino Act, 1971.

1.3 Institutional structure of tourism government planning and policy

Within Botswana's Ministry of Commerce and Industry lies the Department of Tourism (DoT) which administers the Tourism Policy and Botswana's Tourism Act. Its responsibilities are as follows:

The DoT pursues the primary policy objective of maximising utilisation, on a sustainable basis, of existing natural resources in order to increase social and economic benefits to Botswana.

More specifically, DoT is responsible for formulation and execution of programmes designed to promote tourism in Botswana;

Provision of the National Advisory Council on Tourism of such information, advice and assistance as it may require;

Provision to the Tourism Licensing Board of information, advice and recommendations on the licensing and grading of tourism operators;

Research and development, including the collection and analysis of statistical data;

monitoring of tourism operators for adherence to the terms and conditions of licenses, particularly with respect to progress made by the operators in pursuing localisation and other high-quality services to tourists;

Creation and maintenance of an up to date inventory of Botswana's tourist assets and of a system to ensure that these are prioritised for development and protection.

Although the overall structure of the Department of Tourism follows regional standards and specific national requirements, e.g. The Financial Assistance Policy (FAP), at the moment the Department has not yet achieved an acceptable level of effectiveness or the potential for development and growth. However, the necessity to improve this situation has been recognised by government through consultation with the stakeholders, and the intention to establish an autonomous institution, i.e. a National Tourist Board has resulted in a study to lay the foundations of such a body. It is envisaged that the restructured Department of Tourism will be concerned primarily with legislation, policy and control and the proposed National Tourist Board will focus on product development and marketing.

1.4. Dominant types of tourism practiced

Frequently mentioned motives for visiting Botswana among long-haul international tourists are to experience nature, adventure and visiting a far away, exotic country. Wildlife, the waters of the Okavango and Chobe, the wilderness of the Kalahari and Makgadikagadi Pans are Botswana's outstanding tourism assets. Botswana's wildlife is regarded as one of the best, if not the best in Southern Africa, both in terms of variety and numbers. The main tourism assets include, as mentioned before, the abundant wildlife in the Okavango Delta and in the Chobe National Park. Chobe National Park is renowned for very many large elephant herds. Abundant wildlife is also found in the private game farms to the east of the country in the Tuli block and in the Ghanzi farms to the mid-west of the country. Abundant wildlife, including migratory birds, is also found in community conservation areas and wildlife

sanctuaries that are managed by the local communities. These include the Mokolodi Nature Reserve near Gaborone, the Khama Rhino Sanctuary in the central district and the Nata Sanctuary towards the north. The Nata Sanctuary serves to protect the migratory pelicans and lesser and greater flamingos (*Phoenicopterus minor*, *P. ruber*) which come in numbers that vary in some years between 50,000 to 1.5 million. There are three wildlife educational parks in the country namely the Gaborone Game Reserve, the Maun Wildlife Educational Park and the newly opened Francis Town Game Park. Other attractions include the spectacular red sand dunes of the Kalahari Desert in the southwest. Visitors are also fascinated by the wilderness that characterises the grass and salt pans of the desert. The Makgadikgadi Salt Pans, home to the Nata Sanctuary are said to have once been a huge prehistoric lake. The flat featureless grey-white surface which seems to stretch to eternity offers tourists a sensation of emptiness and space over an area the size of Portugal. There are archaeological sites of attraction that include the mysterious Tsodilo Hills on which 3500 paintings (up to 1000 years old) have now been recorded on an area of nine sq km of rock in a 22 sq km area.

In general product packaging includes circuits around the Makgadikgadi and Nxai Pan National Park, the Okavango, then Chobe and Victoria Falls just across the border in Zimbabwe.

Cultural, archaeological and historical attractions do not at present play a remarkable role as components of the present tourism product. The Department of Tourism is looking further into diversifying the tourism product from being purely wildlife based to include these and other attractions such as casinos, native folklore, heritage and conventions.

Botswana culture is frequently expressed to the visitor in various forms. The traditional homesteads and the kgotla, the seat of the village chief and the village meeting place, enshrines traditional democratic principles which are so cherished and have been carried on into the present day government practice which believes strongly in public consultation as its decision making procedure. A number of countries have sent their officials to learn about this democratic set up. Botswana's democratic principles are used to explain why it has remained a peaceful country even at times when all its neighbours were at war. Culture is also expressed in traditional dance and music which have a uniqueness of being so captivating but devoid of any musical instruments. There are also crafts mainly the high quality baskets of varying intricate designs and a variety of decorative ostrich eggshells. Visitors have also been intrigued by Kalahari Bushmen (the San) who are known to be the oldest ethnic group that inhabited Southern Africa. They are known for their hunting prowess, as well as their music, dance and their rock paintings. Very few Bushmen now live their traditional lives, and most are in the process of acculturation to the Tswana and western cultures.

Historical attractions include the story of David Livingstone a missionary explorer who came to Africa in 1840. Livingstone's contact with Botswana is documented in his travel diaries, which describe how he camped amongst the Bakwena tribe. The Bakwena's paramount chief Sechelle befriended him and told him of the great thirst land beyond – the Kalahari – and a lake in the north that reached the Tswana territories – Lake Ngami. The chief eventually converted to Christianity at a place called Kolobeng near Gaborone.

1.5 Participation and degree of interaction of different sectors and stakeholders in the tourism process: Public, private, NGOs, local communities, universities etc.

As Botswana's tourism product is overwhelmingly dependent on its abundant wildlife, The Department of Wildlife and National Parks (DWNP) played a leading role in the development and management of tourism over the past decades. It still administers the National Parks of Botswana. In the private sector, the Hotel and Tourism Association of Botswana (HATAB) is the most representative organisation and therefore is consulted by the government on policies, legislative issues and government regulations that affect its members. As an association of businesses it has a legitimate interest in marketing, product development and diversification, conservation issues and specific needs of its members such as manpower and training.

Government has resolved that to be able to diversify tourism, communities should be more involved. The Department of Wildlife and National Parks (DWNP) through its community liaison officers (responsible for Community Based Natural Resources Management Projects (CBNRM)) is involved in the planning of product diversification.

The University of Botswana recently introduced tourism education in its Department of Environmental Science and the University operates the Harry Oppenheimer Okavango Research Centre (HOORC) which is presently working on the management plan of the Okavango Delta.

At the Southern Africa regional front there is the Regional Tourism Organisation of Southern Africa (RETOSA) together with the Southern African Development Community (SADC) sector coordinator for tourism with its head quarters in Mauritius and a SADC wildlife unit with head quarters in Malawi. To elaborate on this, there are 14 SADC countries. These include Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. RETOSA operates within SADC. The various countries have been assigned sectoral responsibilities whereby Mauritius is responsible for Tourism. The primary role of SADC is to help define the regional priorities, facilitate integration, assist in mobilising resources and to maximise the regional impact of projects. The approach is to address national priorities through regional action. Each member state has been allocated a sector to co-ordinate, which involves proposing projects for inclusion in the sectoral programme, monitoring progress and reporting to the Council of Ministers. The SADC Programme of Action is made up of all the programmes and projects approved by the Council of Ministers.

As is the case with all human activities, developing tourism and alleviating threats to conservation areas requires the involvement of those most affected by the various land use alternatives in the decision making process. Botswana is lucky in this sense in that it thrives on democracy and the principle of consultation. Botswana consults stakeholders in all decisions on national development, tourism included. As such, national planners are guided by this system of consultation. An example is the government proposal to dredge the Boro River which flows out of the Okavango Delta for providing water to other communities devoid of water and far from the

delta. The neighbouring community and other agencies concerned with conservation of the delta rejected this project. The contractor who was already on the site had to collect his equipment and leave. Greater detail on this project is provided later in this report, as it is used as an example of best practice in linking tourism development and biodiversity conservation planning.

There are a reasonable number of private sector organisations, aid organisations and NGOs that operate in Botswana. Besides government's support through coordination of the National Conservation Strategy Agency (NCSA), the country with the assistance of the European Union (EU) has had programmes on the conservation of the Kalahari ecosystem, and wildlife tourism and the environment. The United Kingdom's Department of International Development (DIFD) has assisted with support to the renewable natural resources (RNR) sector addressing poverty alleviation and environmental degradation. This has been designed to improve the understanding of the issues addressing sustainable RNR and poverty strategies, to strengthen the government's capacity for planning and appraisal of policies and programmes in the sector, and to strengthen Botswana's institutions so that they may implement the government policies effectively. The World Conservation Union (IUCN) has influenced, encouraged and assisted societies to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. The IUCN coordinates and manages the Southern African Development Community (SADC) Natural Resources Management Project (SADC NRMP) in partnership with SADC, World Wide Fund for Nature (WWF), and the African Resources Trust (ART).

To date, NGOs and the Government of Botswana have staged several workshops, seminars, panel discussions and various activities e.g., a World Tourism Day observance, to raise the awareness of environmental biodiversity and tourism. Various private sector organisations give services as consultants in environmental planning, tourism planning, Environmental Impact Assessment (EIA), Geographical Information Systems (GIS), sensitivity analysis and sociological surveys. They provide database and framework for resource monitoring and use and engineering designs. There are other NGOs that will be mentioned later under other headings.

Botswana is blessed in that it has a healthy economy that can afford preliminary work such as EIA studies on development projects, and it is effective in enforcement of policies and laws.

1.5 Education and training of tourism (at different levels)

Training has been identified as one of the primary concerns for development of tourism in the country and as a bottleneck for further expansion. The DoT structure has an Education, Training and Public Awareness section which is mandated to facilitate education and training sufficient to meet the needs of the sector, at all levels, for all occupations, and in all parts of the country. The long-term objective is to make Botswana self-sufficient in all matters of education and training for the development of human resources for the hotel, catering and tourism sector. Botswana should be enabled to acquire the necessary skills and qualifications to occupy positions at all

levels, including management levels, eventually reducing foreign exchange leakage and dependency on expatriate staff.

In 1998, the number of people directly employed in Botswana's tourism sector was estimated at 9,900. When taking into account the high labour turn over for the hotel and catering sector in Botswana, additional and replenishment annual manpower needs can be estimated at 1600 persons per year for the period 1997-2003 (Botswana Tourism Master Plan 2000)

Knowledge about tourism in general is limited within major parts of Botswana society. This is of particular economic significance, as it will affect the role that the sector can play in the future development of the country, especially in rural areas. In light of this problem national tourism awareness programmes have been initiated that address society as a whole. These are as follows:

Public Tourism Awareness:

- Tourism Development Report
 - National Tourism Week in relation with World Tourism Day
 - Promotion of Cultural Heritage
 - Promotion of Domestic Tourism
 - Rural Communities awareness
 - Assistance to Tribal Authorities
 - Production and Dissemination of Tourism Awareness Material
- Tourism Awareness in Schools
 - Tourism Awareness Module for Secondary Schools
 - Tourism Career Guidance Module for Senior Secondary Schools
 - Promotion of Domestic (scholastic) Tourism
 - Awareness in the Tourism Industry
 - Customer Relations Module for Hotel, Catering and Tourism (HCT) workers
 - Cultural Awareness Seminars for HCT Management
 - Language/Cultural tape for HCT Management
 - Visitor Awareness
 - Environmental and Cultural "Do and Don'ts" Guide
 - Cultural Events

All forms of recognised training in tourism include environment conservation as a major module. In schools, wildlife clubs members visit national parks where they appreciate the joys of tourism and learn about conserving biodiversity. At the University of Botswana the Department of Environmental sciences offers a module on the Geography of Tourism.

1.6 Compliance with existing international guidelines on best practice for sustainable tourism

Avoiding mass tourism.

Tourism in Botswana operates under the deliberate “low volume – high value” policy adopted by Government. All mechanisms in place try to limit the maximum number of tourists allowed in a given area. For example, the entry prices (for non-residents) to protected areas are very high (BWP 150 per person per day) and the maximum number of beds in any lodge that exist in any Game Reserve and National Park is only 24. An important reason for the deliberate “low volume – high value” policy is the fragility of the attractive ecosystems such as the Okavango, Chobe and the Kalahari.

Botswana is signatory to a number of nature conservation treaties.

- (i) The 1992 United Nations Conference on Environment and Development, held in Rio de Janeiro, brought the topic of biodiversity conservation to a better understanding by many people. Botswana like other countries placed this subject on its agenda of critical issues. The country participated in the UNCED process, which resulted in **Agenda 21**. Agenda 21 provided a blueprint for addressing current global needs for the environment and challenges of the next century. **The Convention on Biological Diversity** was signed during the Earth Summit in Rio de Janeiro, 1992 and came into force in 1993. It defines biological diversity as “the variability among living organisms from all sources, including *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity between species and of ecosystems.” Biological diversity does not just refer to the biological diversity of species and the protection of threatened species but covers the whole spectrum of the natural environment. Botswana produced a national report named “National Report on measures taken to implement the Convention on Biological Diversity” in 1998. So far work is still continuing on production of the country’s biodiversity strategy and action plan.
- (ii). The **World Heritage Convention** is the convention concerning the protection of the World Cultural and Natural Heritage (Paris, 1992). This convention recognises the obligation of all states to protect unique natural and cultural areas and recognises the obligation of the international community to help pay for them. Botswana became a signatory to this convention in 1999 and it has submitted a dossier requesting Tsodilo Hills to be listed under world heritage sites.
- (iii) **Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar 1971)**. This was ratified by Botswana in 1996. Its objectives are to stem the progressive encroachment on and loss of wetlands now and in the future, recognising the fundamental ecological functions of wetlands and their cultural, economic, scientific and recreational value. Currently the Okavango River system has been pronounced a Ramsar site of international importance.
- (iv) **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES 1973)**. In Botswana this was agreed to in 1997 and enforced nationally by the Wildlife Conservation and National Parks Act with the aim of protecting certain endangered species from over exploitation.

- (v) **United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and or Desertification, particularly Africa, 1994.** This was ratified in 1995.
- (vi) **Agreement of the Action plan for the Environmentally Sound Management of the Common Zambezi River System, 1987.** This was signed in 1987; its objectives are to coordinate the efforts of parties in the sound management of the water resources and the environment of the common Zambezi River System. Botswana has also entered into regional agreements through SADC in its efforts to address the conservation and sustainable use of biological diversity.
- (vii) **The Convention on Migratory Species of Wild Animals or the Bonn Convention 1979.** This convention obligates parties to protect endangered migratory species and to try to conclude international conservation agreements for the conservation of vulnerable species that are not yet endangered. The convention precludes commercial taking of listed species; it also encourages member states to conserve and restore habitat areas for migratory species. Botswana has begun discussions on this convention but has not signed.

1.7 Brief description of main ecotourism attractions of Botswana

In view of Botswana's topography as well as its socio-cultural background, the tourism potential is more or less confined to the country's natural attractions in terms of ecology, scenery, heritage sites, geology, fauna, flora, etc., as well as to those of cultural, historical and archaeological appeal.

Flora: There are a total of between 2600 and 2800 species of flora in Botswana (World Conservation Monitoring Centre, 1991). The level of floral endemism in the country has been described as low, ranging from virtually non-existent to 17 species. The richest floral areas are found in the northern part of the country, particularly within the Okavango and Chobe river systems. Most attractive is the complexity of the Okavango Delta ecosystem, which has a diversity in vegetation species of both aquatic and terrestrial nature. The Delta is made up of swamp islands and flood plains each with its own distinctive vegetation. The most common species associated with the swamps include *Cyperus spp.*, *Phragmites australis* among other aquatic species. Woody vegetation most associated with the Delta include *Phoenix reclinata*, *Hyphaene petersiana*, *Ficus sycomorus*, *Comberetum imberbe* and *Syzygium cordatum* on the islands. Grasses and sedges dominate the flood plains. The wide range of Botswana habitats, from the arid dunes of the southwest to the permanent swamps of the Okavango is reflected in a great diversity of animal species (mammals, birds, amphibians and reptiles) that occur in the various habitats. Of particular interest are the numerous wild edible plants, which rural residents, particularly the Bushmen, make considerable use of. Over 250 edible plants species have been recorded. Numerous research projects have been conducted examining this fascinating topic, highlighting the extensive botanical and taxonomic knowledge of the people who utilise wild fruits and vegetables of the desert.

Mammalian Fauna: The number of mammalian taxa that occur in Botswana stands at 162, including 39 taxa of hoofed mammals (Perisodactyla and Artiodactyla), 38 taxa of carnivores and 7 taxa of primates. Most large mammals are found in the western part of the country with a greater diversity occurring in the northwest. Mammalian numbers in the eastern part of the country have declined as a result of displacement by human settlement and its associated activities. There are 26 species of mammals that are protected under the Wildlife Conservation and National Parks Act of 1992. Five of these species of mammals are considered globally threatened. They are:

Wild dog	<i>Lycaon pictus</i>
Black rhinoceros	<i>Diceros bicornis</i>
Square-lipped rhinoceros	<i>Ceratotherium simum</i>
Brown hyaena	<i>Hyaena brunnea</i>
Cheetah	<i>Acinonyx jubatus</i>

The elephant, which has become a top species of debate at CITES meetings due to its endangered status in many other countries, occurs in huge herds in Botswana. The Chobe National Park is perhaps the only place in the world where so many elephants can be seen at one time. Pfothenauer (1994) gives the following description:

Botswana has the largest contiguous population of savannah elephant left in the world. During the dry season, the Chobe river area has one of the highest densities of elephants in the world – six per sq km. Their numbers are estimated to be between 47 000 and 60 000, with an average annual birth rate of about five percent, the maximum for the species. The population is spread over vast areas of northern Botswana and the animals move freely across the national borders to the Caprivi in Namibia and into southern Zimbabwe. Besides the rhinoceros which can only be easily seen in the sanctuaries of Khama Rhino Sanctuary and the Mokolodi Nature Reserve, the rest of the big five namely elephant, buffalo, lion and leopard occur in big numbers. The buffalo range is however restricted to the far north and northeast of the country both due to ecological habitat limitations and the veterinary requirements to separate buffalo from cattle for purposes of restricting transmission of foot and mouth disease from buffalo to livestock.

Avifauna: Botswana is a bird lover's paradise. There are 496 main species of birds occurring in Botswana that are represented by 285 non-passerine and 211 passerine species from 47 and 25 families respectively. Although none of these birds are endemic to Botswana, 64 species are found only in Southern Africa. Twenty percent of the avifauna is composed of migrants from the Palaearctic and other African countries. In addition approximately 65 species of rarely observed birds have been identified in Botswana. There are 21 protected species of birds in Botswana six of which are considered globally threatened:

Wattled Crane	<i>Grus carunculata</i>
Cape Vulture	<i>Gyps coprotheres</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Black-cheeked Lovebird	<i>Agapornis nigrigenis</i>
Slaty Egret	<i>Egretta vinaceigula</i>
Lesser Kestrel	<i>Falco naumanni</i>

In Botswana the Ostrich, the largest bird in the world is adapted to the changing environment and will be seen almost everywhere, even within close proximity to settlements and in areas where cattle graze.

Wildlife tourism in the north and northeast, is close to its carrying capacity limits already. An ecotourism strategy is being developed which will aim at product diversification by identifying product components in new geographical regions, in particular the parks in the centre and south of the country with their still under-exploited potential for wildlife and wilderness oriented tourism. The unique wildlife will remain the outstanding tourist attraction for the international and regional markets.

A number of non-wildlife sites exist, but the vast majority are totally underdeveloped in terms of access and visitor oriented presentation. Currently, very little information has been published about potential tourist attractions. Therefore a comprehensive inventory, and in particular an assessment in terms of potential use for tourism has still to be carried out.

Some pilot sites that have been identified include:

- i. **Moremi Gorges on the Tswapong Hills.** Tswapong Hills is a plateau outcrop with a variety of fascinating ecology in the various gorges that indent the plateau. One of the gorges known as Moremi Gorge has flowing water streams and small lakes, which can be seen as one ascends the plateau. It is planned to re-introduce wildlife, establish a cultural village and tap the tourism potential of the Moremi Gorge a National Monument.
- ii. **Kaingo community based organisation (CBO) in Matshumo and Mosu.** This community is planning to exploit the tourism potential of Kubu Island (a National Monument) in the Makgadikgadi pans area. On this dry pan (a prehistoric lake), some areas have shorelines with pebble beaches, spits and bars. One such place is Kubu Island, a small rocky outcrop with thick gnarled baobab (*Adansonia digitata*) trees. There is evidence that Kubu was once a nesting site for large numbers of birds. There are also stone wall ruins which are the remains of the homes of district governors, probably relatives of the Great Zimbabwe kings whose empires stretched into Botswana.
- iii. **Molema CBO and Lentswe - le- Moriti** in the North and Central region. Here there is management of resources by communities near the Limpopo River, which is one of Botswana's major ephemeral rivers. They are developing fenced game farms for game harvesting and photographic tourism.
- iv. In the Kgatleng, Kweneng, Ngwaketse region and Kgalagadi region there are sites like **Matsieng Footprints**. This site has attracted tourism interest because it is associated with a Tswana folktale, which claims that the first ancestor of the Botswana climbed out of a hole at this site followed by wild animals and cattle and he left behind his footprint which can be seen today and some rock engravings.
- v. There is the **D'Kar Community Trust** in Ghanzi district which is involved in development and management of the **Dqae Qare Game Farm** (7500 hectares freehold farm) for cultural tourism and craft marketing.

The fact that new developments will mainly take place in the rural and remote areas is supporting the participation of communities in tourism, thus creating possibilities for employment and income. Because of the complex character of the sector, a range of potential community involvement opportunities are being considered besides the

provision of local-style accommodation and catering, e.g. handicraft production, folklore shows such as traditional dancing and guide services.

2. OVERVIEW OF PRESENT STATE OF BIODIVERSITY CONSERVATION AND PLANNING

2.1 Relative priority in national planning policy

The Government of Botswana recognises the need to include environmental issues such as conservation of the biodiversity in the planning and policy formulation process in order to achieve sustainable development. This is contained in the National Development Plans (NDPs). The minister responsible for environment stresses that it should also cover policies, programmes and projects.[the previous sentence doesn't make sense, author should delete or rewrite] The principle is that, environmental issues are now being incorporated in terms of reference of policies and projects and these should address not only detrimental effects on the environment but also should consider if the policies could help in the attainment of environmental goals.

It is realised that the planning process cannot be complete without incorporation of environmental issues in its economic and physical aspects. Presently this is not the case as the current draft regional plans for the mid-term review of NDP 8 and the plans for development of new agricultural areas do not take environmental issues into consideration. Ministries, districts and towns therefore need guidelines and operational goals in order for them to address this matter. It is imperative to develop a better understanding of the environmental costs related to our economic activities. Botswana is one of the few countries in the world that still possesses an impressive diversity and abundance of wild fauna and flora. This is reflected by the occurrence of more than 150 different species of mammals, around 500 species of birds, numerous species of reptiles, amphibians, insects and plants. The Government of Botswana has demonstrated considerable commitment to maintaining the country's rich heritage by setting aside 18 percent of the country as National Parks and Game Reserves. An additional 21 percent has been dedicated to Wildlife Management Areas (WMAs) where the primary land use is wildlife utilisation.

There are concerns about the drop in numbers of wildlife with the present day factors including drought, population growth and human encroachment, an expanding cattle industry, the restriction of wildlife migration routes due to livestock disease control cordon fences and illegal hunting. Botswana's government recognises the severity of this situation and a number of measures have been put in place to reverse this trend. These include provision of water to compensate for the loss of access to permanent water bodies, protection of wildlife migratory routes by the designation of certain areas as Wildlife Management Areas (WMAs) and the use of wildlife friendly fencing. The role of conservation education in creating awareness among people about the necessity of maintaining the country's biodiversity has been addressed by introducing conservation education in school curricula and the development of ex-situ facilities such as natural history collections and botanical gardens. The government in conjunction with stakeholders has embarked upon a process of developing a comprehensive strategy for wildlife management in the 21st Century.

Botswana has ratified the Ramsar Convention and focuses efforts on the Okavango Delta, the largest designated Ramsar wetland site in the world. However, there are still ecosystem issues surrounding the Delta that have to be resolved. These include the need to develop an overall management plan for the Delta. The pan handle is a fragile area and if it were to be degraded the delta would die off. The pan handle should therefore be given protected area status. There are regional conflicts in the Okavango Delta ecosystem due to extensive border fencing by Botswana and potential water withdrawals by Namibia. The Okavango Delta lends itself to the concept of trans-boundary conservation and management. It is important therefore to redesign the fences to maintain essential wildlife corridors and to have trans-boundary cooperation with up-stream neighbours to maintain the integrity of the Okavango River Basin Delta. The government recognises these concerns and an Ad Hoc Fencing Committee was formed in 1997, which came up with some recommendations some of which have already been accepted by government. These include retroactive environmental impact assessment study of some of the fences. A scoping exercise has been undertaken. An environmental audit of fences that have already been constructed as well as an EIA of those sections of fence still being planned is to follow. The EIA will advise on which of the current fences are essential for disease control and how minimisation of conflicts between fencing for effective disease control, and the maintenance of seasonal and drought related movements that are essential for wildlife could be achieved. This will ensure that the benefits of fences are maximized while the disadvantages are minimised.

2.2 Institutional structure of biodiversity government planning and policy

In 1983 the Government of Botswana accepted the need for the preparation of a National Conservation Strategy (NCS). This need emerged from close cooperation between the government and the United Nations Environmental Programme (UNEP) in the preparation of the Clearing House Mission Report. The Clearing House Mission Report reflected the importance attached to identifying policies and other measures, which, would ensure, whenever and wherever possible, the sustainability of all future development.

The Government of Botswana therefore decided on the establishment of new institutions to coordinate implementation of the NCS. The NCS Advisory Board and NCS Coordinating Agency were thus established. Also introduced were Environmental Liaison Officers (ELOs). The NCS Advisory Board and NCS Coordinating Agency were established within the Ministry of Local Government, Lands and Housing. The National Conservation Strategy (NCS) Agency was set up in 1991 and the NCS (Advisory) Board was appointed by Cabinet in 1992.

The 17-member NCS Advisory Board, which is chaired by the minister of the newly formed Ministry of Lands, Housing and Environment is composed of senior representatives of his ministry, the Ministry of Finance and Development Planning, the Ministry of Agriculture, the Ministry of Commerce and Industry, the Ministry of Minerals, Energy and Water Affairs and the Ministry of Education. Also represented are the chairman of the Botswana Association of Local Authorities (BALA) and the

chairman of the Botswana Association of Tribal Land Authorities (BATLA). The rest of the membership includes non-governmental organisations; the chiefs, the University of Botswana; the media; the business community; and eminent private individuals. The NCS Advisory Board, as the name suggests, has advisory powers and its primary function is to coordinate the implementation of the NCS. In carrying out its functions the Board aims at complementing rather than duplicating the activities of existing organisations.

The primary function of the Board is to coordinate the implementation of the NCS. The Board also performs the following functions: Provides guidance to organisations and individuals; advises organisations on review of policies; prepares the biennial State of the Environment report; coordinates review of legislation; promotes the implementation of EIA legislation and advises and supports line ministries and local authorities.

The NCS Agency the secretariat, is the executive arm of the Board. The Agency services the Board by organising the Board's affairs and coordinating the execution of its decisions and liaising with other organisations to ensure that the NCS goals and objectives are achieved.

The Environmental Liaison Officers (ELOs) within each of the central and local government ministries/departments are responsible for ensuring that their organisations comply with the NCS Act once passed, and for liaising closely with the NCS Co-ordinating Agency. It is envisaged that, at the district level, liaison officers will also be designated. The importance of ensuring development of the necessary links and regular liaison between ministries, departments and local authorities was thus well recognised when formulating the NCS.

2.3 Perceived degree of participation of the country in the Convention on Biological Diversity (CBD), and perceived benefits of being a part of CBD

As has been mentioned before, Botswana is party to several environmental conventions one of which is the Convention on Biological Diversity (CBD) which was ratified in October 1995. The National Conservation Strategy Agency directly coordinates implementation of the requirements of the CBD. Some of the requirements of the Convention are: to identify components of biological diversity essential for conservation and sustainable use; monitoring through sampling and other techniques, the components of biological diversity thus identified, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use; identifying processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; maintaining and organising by any mechanism, data derived from identification and monitoring activities undertaken as above.

As an obligation for all contracting members of the convention, a National Biological Diversity Authority (NBDA) was established. This committee, which is comprised of members from both government and non-governmental organisations, including the University of Botswana, assists the Government of Botswana and the NCS Agency in

advising on all scientific and technological matters pertaining to the CBD. It also advises on plans, programmes and strategies in implementing the convention. The environmental research and monitoring division of the NCS Agency provides the secretariat to the NBDA.

The NCS Agency, through the assistance of the UNDP, and the collaboration of the NBDA, produced the first edition of the country's report on biological diversity, for the Fourth Conference of Parties to the Convention on Biological Diversity. The next phase of this project will be the Botswana Biological Diversity Strategy and Action Plan (BSAP). Through this BSAP, the country will take stock of all its biological resources, assess potential threats, assess the damage done (loss) and come up with a strategy and plans that can lead to sustainable utilisation of biodiversity. A funding proposal to the Global Environmental Facility (GEF) for the project has been finalised with UNDP.

A view at the NCS Action Plan reveals that the national policy on natural resources conservation and development is to be implemented through an action plan, which should be monitored as part of the National Development Process (NDP). A Swedish (SIDA) consultancy drew up the Action Plan between 1996 and 1998. The action plan specifically formulates and describes the different measures to diversify Botswana's economy through the use of the natural resource base. It identifies the natural resources that have significant potential to create employment and incomes particularly where there are limited formal employment opportunities. The action plan also defines specific policies and instruments of a macro-economic nature that should serve as incentives and dis-incentives in the quest to improve the conservation of natural resources. These measures include fiscal and subsidy policies as well as other innovative measures hitherto unused for conservation purposes. It also proposes specific pieces of legislation and provisions, which could play a positive role in promoting environmental rehabilitation and a strong role in stopping degradation. It also proposes amendments and where appropriate, new legislation or the consolidation of existing legislation and provisions.

Ironically though, Botswana does not yet have an approved National Biodiversity Strategy and Action Plan. Presently different sectors have their own projects outlining strategies and action plans addressing components of biodiversity.

The Department of Wildlife and National Parks (DWNP) has a multi-pronged strategy to achieve its policy objectives of improving its conservation of wildlife resources and encouraging and promoting sustainable utilisation by local communities and the private sector. DWNP realises that conservation and sustainable utilisation of the wildlife resource is dependent upon the result of scientific and objective research. Areas of concern such as the management of the country's large elephant population and its habitat will continue to receive attention as set out in the Elephant Management Plan of 1990 which is currently undergoing review. The national protected area system will continue to be managed to maintain and enhance biological diversity for their aesthetic and ecological value as well as to provide a reservoir of wildlife species for wildlife utilisation schemes in surrounding wildlife management areas. The current NDP 8, lays emphasis on the implementation of management plans for protected areas.

Wildlife Conservation Policy of 1986 is the blueprint for the management and utilisation of the wildlife resources. Proposed Wildlife Management Areas (WMAs) that have not yet been gazetted will be afforded this status. Management plans will be implemented to encourage investment by the private sector and participation in wildlife utilisation by local communities. Revised Ostrich and Crocodile Management Plans have been drawn up to encourage and regulate the sustainable utilisation of these species..

The natural history division of the national museum has already begun to develop the national botanical garden. The plan that has been put forward for additional funding outlines the development of the garden to an ex-situ facility, at which plants and some animals can be studied in a concentrated area. The visitor will be able to get detailed information on the flora and fauna. Research projects relating to biodiversity and its management will be undertaken on species in the garden. Another project outlined in NDP 8 is the creation of a new history centre in the botanical garden. The centre should cater for research, documentation and storage of Botswana's existing and growing natural history collections. The aim is to collect and store specimens of all species existing in Botswana. It is to become the national reference collection for natural history, which should serve the needs of other institutions working with issues related to biodiversity.

The Ministry of Agriculture is currently working on a national forest policy, which defines basic principles and goals for conservation, development, management and sustainable utilisation of forestry resources to meet social economic and environmental needs. Forests, woodlands and trees contribute towards (i) the improvement of food security at the household and national levels since about 53 percent of the total energy consumption is generated from wood; (ii) meeting rural subsistence needs by providing construction material; (iii) generation of income through handicraft production, honey, fodder for livestock and wildlife; and, (iv) increasing agricultural productivity and conservation of the environment by protecting soil erosion, conserving wetlands and biological diversity as well as sequestration of carbon dioxide.

On an annual basis, there is a national tree planting day carried out in various parts of the country where various communities plant over 100,000 trees. The various trees range from fruit trees (both indigenous and exotic), shade trees, soil reclamation species and ornamental trees. Past efforts to conserve forestry resources include the gazettement of one percent of the country as forest reserves. Some indigenous trees have been protected which include some timber species such as Mukwa (*Pterocarpus angolensis*), Rhodesian teak (*Baikieae plurijuga*) and Tsaudi (*Guibourtia coleosperma*) and some fruit trees such as Baobab, African Ebony (*Diospyros mespiliformis*) and Mozinzila (*Berchemia discolor*).

There is, however, a growing threat to the maintenance of biological diversity as a result of increased human pressure. Effective strategies have to be sought to counter these threats not only by developing and sustaining the system of protected areas but also by fostering other conservation measures outside protected areas to maintain and enhance species and ecosystem diversity.

There is a national Action Programme to combat desertification and drought (NAP) which followed the ratification of the United Nation's Convention to Combat Desertification and Drought (CCD). Its objective is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of the integrated approach which is consistent with Agenda 21 with a view to contributing to the achievement of sustainable development in affected areas. Ratification of the CCD resulted in the Ministry of Agriculture being identified as the focal point for the implementation of the NAP. A national task force was put in place in 1997 which also started consultations.

Conservation of the Okavango River basin has been mandated to the Okavango River Basin Water Commission (OKACOM). Owing to its isolation and the history of conflict in Angola, the Okavango River Basin has remained remarkably unaffected by human influence. Aside from relatively small extractions in southern Angola and the Caprivi Strip in Namibia, the Okavango's hydrology is largely unaltered. The Okavango has therefore continued to support a healthy ecosystem including a large population of people living in villages surrounding the delta. Recent events, however show that the delta is vulnerable. It is an unstable and complex ecosystem, situated downstream of two countries who may want to extract water from it or use for some other developments. More importantly, the delta lacks the protection of a comprehensive management plan guiding decisions of upstream neighbours. Fortunately two recent developments offer Botswana an unprecedented opportunity to secure the future of the delta. In 1997 the Permanent OKACOM launched a multi-year, basin wide research and planning process, and Botswana inducted the Okavango Delta into the Ramsar convention for wetlands of international importance. The main goal of OKACOM is to produce a comprehensive management plan for the basin, and the Ramsar convention commits Botswana to developing a management plan for the delta.

Botswana being a party to the Convention on Biological Diversity (CBD) has gained in that the CBD espouses the conservation of biological diversity and the sustainable use of its components. This mirrors the commitment of the Government of Botswana to ensure that the development and diversification of the country's economy is predicated on the sustainable utilization of her natural resources. The major benefits that accrue from the development of the wildlife and other renewable natural resources include the creation of economic opportunities and diversification of the country's economic base. From the above, communities have increasingly become aware of the importance of natural resources conservation.

With respect to agriculture, biodiversity - the totality of genetic resources, varieties, and ecosystems - is the very foundation of life for the majority of rural people in Botswana. The food security of communities is based on biodiversity in crops, animals, forests and wildlife resources. The maintenance of yields and disease resistance is based on the access to a rich genetic resource of crops and their wild relatives, animals, forests and wildlife resources. The richness of biodiversity ensures present and future stability of food supply as well as adaptation of natural ecosystems to changing climatic conditions. However, the stability of genetic resources is threatened by among other factors, the destruction of natural habitats, and the wide

spread introduction of uniform seeds/breeds, over-exploitation of veld-products, overgrazing and desertification.

For the rural majority, loss of biodiversity threatens the sustenance of local communities as biodiversity provides shelter, food, fibre, medicinal and other products that ensure the survival and income of the majority of the rural population. The rural population knows how to maintain biodiversity. When they plant, they try to meet the nutritional requirements of their families by inter-cropping, and reduce the risk of crop failure by cultivating a wide variety of crops or having mixed livestock. The growing emphasis on market-driven transactions contributes towards the gradual erosion of indigenous knowledge systems. The 'wild' relatives of cultivated crops form an important part of the diet of rural communities, as these are part of their ecosystem. The 'wild' vegetables are often seen on the table of many rural and urban dwellers and contribute towards the food security and nutrition of the population.

2.4 Overview of the role of NGOs and local communities in biodiversity conservation: Main activities, constraints, and achievements.

In Community Based Natural Resources Management Policy some of the major areas covered include the following:

- i.* Forestry management: Although emphasis is placed on fuel wood conservation, the concern is not strictly restricted to this area;
- ii.* Parks and people: To facilitate community involvement in natural resource management people are encouraged to view parks and reserves as areas belonging to communities as opposed to the government;
- iii.* Intellectual property rights: Communities possess indigenous knowledge in natural resources, as such there is need for this to be protected, as it will contribute towards equitable sharing of revenues;
- iv.* Capacity building: The capacity of the stakeholders should be improved to ensure sustained community based natural resource management.

The involvement of NGO's in biodiversity conservation and their collaboration with local communities has been invaluable. Some of the activities carried out by NGOs in collaboration with local communities include **Kalahari Conservation Society (KCS)**. It was involved in the organisation of a conference on Women and the Environment and in the Pre-feasibility assessment and study of Moremi Gorge, Tswapong Hills, for the community. **Skill Share Africa** assists volunteers of organisations such as Veld Products Research and development (VPRD), and Environmental Watch Botswana. **Forestry Association of Botswana (FAB)** has among its projects, a project on Community Based Woodland Natural Management. **Veld Products Research's (VPRD)** projects include the Community Based Agroforestry Project. **Thusano Lefatsheng** is involved in ecological studies, cultivation and management of grapple plant (*Hapagophytum procumbens*) in order to enhance its sustainable use. **Harry Oppenheimer Okavango Research Centre (HOORC)** is also running several programmes including a research project named the Hydrology and Ecology of Flooding in the Okavango Delta, aimed at understanding the effects of the seasonal flood on the structure and productivity of both terrestrial and aquatic biota. **Permaculture Trust of Botswana** assists communities with drawing natural resources management plans. **Somarelang**

Tikologo (Environment Watch Botswana) has as its overall aim, to monitor, protect and increase awareness about Botswana's environment and to encourage the prudent use and conservation of the country's resources. **Conservation International (CI)** is an international organisation that has a project in Botswana. This project, established in 1991, has the aim of conserving endangered ecosystems that are important either, for their biological diversity or their importance to live systems. The focus of the project has been training in conservation, environmental and support services to communities in and around the Okavango Delta. **Chobe Wildlife Trust** was established in 1988 to assist in the conservation of natural assets of northern Botswana in particular, the Chobe National Park. **Botswana Bird Club** produces a journal *The Babbler*, which contains papers and notes on any aspect of ornithology in Botswana and bird records.

The government of Botswana cherishes devolving management and decision making processes to men and women in the rural areas who live with Botswana's resources and who also have an interest in their utilisation and preservation. This is being achieved through the many Community Based Organisations (CBOs) that have been formed in the country. NGOs and these CBOs face similar challenges in their efforts to conserve biodiversity. One of these challenges are uncontrolled fires, which occur annually, at times burning out the resources that organizations are working to conserve. Botswana's dry and windy climate makes fires a fierce and frequent challenge. Frequent use of fences, such as the buffalo fence around the delta, presents a second challenge. The fence affects wildlife migration patterns and communities located inside the fence such as Seronga and others along the delta pan handle are cut off from wildlife and can not use of it. There are secondary businesses associated with tourism in the delta area; these are craft shops mainly dedicated to selling basket making. The resources they use to make baskets are on land that has no legal tenure. There is therefore no security for these recourses in that someone can walk in and take them rendering them no longer available. On the other hand there is uncontrolled collection of the basket-making palm to unsustainable levels. The communities have to be trained on how to collect the palm leaves without destroying the palms. Other community activities include dug out canoes that are made from hard wood trees that may take up to 50 years to replace. There is a move to use fibreglass canoes in place of 'Mekoro' as they are popularly known in order to conserve these trees.

2.5 Overview of National Systems of National Parks and Protected Areas: Constitutional basis, administrative structure, and operational budget, brief description of main protected areas, present visitation and tourism aspects.



[Chobe Conservation Trust.jpg](#)

Parks were set aside by government primarily to preserve the diverse fauna and flora of the country and secondly to allow for recreational and educational opportunities for Botswana residents and visitors. Today 17 percent of the area of the country comprises parks and reserves, though none are complete ecological units in themselves. Further efforts into improving this situation has resulted in the recent birth of the Kagalagadi Trans-frontier Park which is a trans-boundary national park

stretching across south-western Botswana into northern South Africa. More information is given on this park at the end of this chapter in the section on best practice case studies. Botswana has four national parks, and seven game reserves that are administered by the government (DWNP). There are also private reserves and wildlife sanctuaries. The Central Kalahari Game Reserve with a size of 52 800 sq km is among the largest protected areas in the world. There is an additional 20 percent of land designated as wildlife management areas. However there are significant differences in the use of these areas for tourism. Unanimously, the Okavango Delta, the largest inland wetland habitat of this type in the world covering up to 13,000 sq km, is considered the most important attraction in Botswana together with the Chobe National Park. The other national parks and game reserves, e.g. Central Kalahari Game Reserve and Kalahari Trans-frontier Park (former Gemsbok National Park) are less known and visited.

It is estimated that some 90 percent of all persons coming to Botswana for a vacation come primarily for a wildlife-based vacation (Botswana Tourism Master Plan 2000). This proportion varies according to country of origin, with visitors from South Africa (20 percent) more likely to come for other vacation purposes such as sporting occasions or special interest field trips. The majority visit national parks and reserves. The northern parks and reserves attracted 95 percent of total visits by paying visitors in 1998, with Chobe National Park (61 percent of the total) and Moremi Wildlife Reserve (31 percent) the most visited individual protected areas. Analysis of country of residence shows that visitors from Europe (excluding the United Kingdom) formed the largest single category, accounting for 32 percent of the total visits. Next in order of size were visitors from South Africa (18 percent), United Kingdom (10 percent), North America (10 percent) and Australia/New Zealand (7 percent). Botswana citizens and residents accounted for just over 6 percent and 9 percent, of total visits respectively. Average length of stay has been estimated at 2.3 to 2.7 nights for visitors to the central and southern parks and reserves, and slightly lower, 1.3 to 2.1 nights, for the northern parks and reserves. As for revenue, in 1998, a total of P10.6 million was collected in revenues from visitors to the national parks and reserves. Looking at the visitor carrying capacity, a total of some 2,064-bed places are presently available within the protected areas. These are provided in a range of accommodation, including permanent and non-permanent lodges, mobile campsites, public camp grounds, wilderness camp sites, observation hides and educational group camp grounds. The number of permitted bed spaces in all forms of accommodation is 3,804 (according to DWNP). However it is noted that some sites within the protected areas already experience extremely high levels of utilisation during the peak season, especially the Chobe National Park and Moremi Game Reserve.

The Government of Botswana has promulgated various policies and legislation to guide and control the use of wildlife and wildlife areas. These include the Wildlife Conservation Policy of 1986, The Wildlife and National Parks act of 1992, the Tourism Policy of 1990, the Tourism Act of 1992, as well as the National Conservation Strategy of 1990.

Threats to the parks include devastating fires that may account for the disappearance of up to 80 percent of woodlands allowing encroachment of undesirable fire resistant species of vegetation. Measures to control fires should be put in place early every season. There are also problems with water for the parks. Moremi Game Reserve in

the Okavango is the only park with sufficient surface water. The Chobe National Park only has approximately 70 km of permanent water in the form of Chobe River. Other than this no surface water exists in the Chobe National Park; water is therefore pumped by machines to the surface from deep aquifers underground resources. This at times results in the lowering of the water table. Observations have shown that some perennial surface springs and water holes are now dry, indicating the need for a comprehensive monitoring exercise.

3. OVERVIEW OF LINKS BETWEEN TOURISM DEVELOPMENT AND BIODIVERSITY CONSERVATION AND PLANNING (BCP)

3.1 Description and critique of existing national strategy, plan or policy applied to any interaction between tourism development and biodiversity conservation and planning – i.e. national biodiversity strategy and action plans (NBSAPs).

The Convention on Biological Diversity aims at committing all nations to conserve biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. The CDB also recognises the sovereignty of governments over their biodiversity. It also recognises that local communities have life styles that have a strong traditional dependence on biological resources and the need to share equitably in the benefits arising from biodiversity. Mujakachi (1997) outlines below the challenges associated with addressing the Convention's objectives:

Unlike many countries of the North where environmental issues that result in processes leading to conventions are pushed by the public, in Southern Africa such pressure is missing. Generally addressing environmental issues in Africa has been the monopoly of government. Ratification of these conventions is guided by other considerations such as the need to be part of the global family or the desire to access funds that may have been established to implement the convention. These conventions also depict that national legislation should conform to the international regulations.

An additional challenge is the occurrence of larger populations of wildlife outside protected areas. Hunting, harvesting, transfer and trans-boundary movement of biological resources does take place but there is a level of absence and/or inadequacies in legislative and regulatory mechanisms in place to address all these. Therefore enforcement has been identified by the NCSA as a key area that efforts will go into to facilitate efficient bio resource utilisation in situ and ex-situ.

The benefits of visitors to Botswana have been seen. An increase in tourism, however, always carries the risk of harming the very attribute (i.e. natural resources) that attract visitors in the first place, as well as putting pressure on the local infrastructure: roads, airports, water supplies and public services. While it is evident that natural heritage should be preserved for the appreciation and enrichment of generations to come for their inherent value alone, it should just be as obvious that its preservation makes overwhelming economic sense as well. When a tourism attraction goes into decline

because of overuse and neglect, it is a case of killing the goose that laid the golden egg. Not only does it reflect short-sightedness in terms of potential profit, it also robs the world of something irreplaceable in value that should be preserved to enrich the lives of generations to come. Only proper planning, management, and control can ensure that a resource will live up to its commercial potential and survive intact into the future.

Mujakachi (1997) in his critique of western attitude to African conservation endeavours, states that there is a growing tendency by international conservation advocates to promote a concept of Africa as an idyllic and sacrosanct wildlife sanctuary which is separated from the socio-economic realities of the continent. This elitist and condescending attitude lowers the credibility of African conservation efforts. Africa has become a battleground of the global conservation movement. At stake is whether Africans can manage their wildlife or whether the task will be usurped by a cartel of conservation organisations based in the USA and also in Europe. The implication being that African people do not possess the proper conservation ethics nor are they able to duplicate the First World managerial efficiency. There is a strong international determination to preserve the wildlife in Africa. The WWF/Tourism Concern's definition of sustainable tourism carries the same view about this. For WWF, sustainable tourism is tourism and associated infrastructures that, both now and in the future, (1) operate within natural capacities for the regeneration and future productivity of natural resources; (2) recognise the contribution that people and communities, customs and lifestyles, make to the tourism experience; (3) accept that these people must have an equitable share in the economic benefits of tourism; (4) are guided by wishes of the local people and communities in the host areas.

That being said, there are of course perceived problems that emanate from the local situations. One of these problems is the lack of necessary linkages between the various development sectors. For instance as Ngwamotsoko (1997) explains, in the National Development Plans, the policies that guide decision makers and policies that are affecting biodiversity conservation do not at all or are inadequate in accommodating conservation interests. For example, policies governing water resources and settlement allow fragmentation of the wildlife habitats, even within protected areas through permitting the siting of hotels and camps next to the wildlife watering sources. The Agricultural Policy while it recognises pesticide use against quelea birds, locust, tse tse fly and other so called pests, the application methods to avoid affecting non-target species of wildlife are not clarified. In the Tourism Policy itself all conservation issues have been left to the Department of Wildlife and National Parks and this is mainly in reference to conservation in protected areas. Also, there is no wildlife liaison officer in the DoT. Other biodiversity conservation sectors that are well reflected in the National Conservation Strategy Agency report, including ex-situ conservation of botanical gardens, zoos and the potential detrimental effects of introduction of exotic animal and plant species, are not addressed in the tourism policy. DoT has no figures on visitor carrying capacities for the various tourism attractions. Besides aerial surveys conducted by the DWNP to count and monitor the distribution of large animals in areas where they are abundant, at the moment there are no official inventories available to the visitor at the entrance of protected areas which display the richness of the park's biodiversity. The inventories could include facts about the most abundant taxa and the presence of endemic species all of which

could go a long way in enhancing the visitor understanding, appreciation and enjoyment of these areas.

3.2 Analysis of main perceived problems and constraints at the national level (including negative linkages and threats of tourism to biodiversity conservation).

3.2.1 Political

The political and economic stability of Botswana has been an essential advantage to tourism development as it is related to a democratic social environment and provides a favourable investment climate and comparatively no corruption. Safety and security are important factors for tourism development as well, especially in view of the situation in neighbouring countries. Bureaucratic procedures, however, do negatively affect the planning and implementation of projects; for instance, it could be difficult to obtain adequate land or to successfully apply for financial support.

Wildlife is recognised as an important natural resource in Botswana, however it is one of the major land users and as a result competes for space with other land uses. Socio-economic policies have at times led to programmes and projects that do not have due consideration to the consequences on wildlife. Take for example the National Settlement Policy, among the specific objectives of this policy are the preservation of the best arable land and to achieve balanced development. The policy identifies activities it will protect but it is silent on wildlife. Yet settlements are among the most serious factors in wildlife conservation. Settlements have a close relationship with water sources. In areas with river systems, settlements are near rivers or dams. Rivers and pans are systems that provide water, as well as a great diversity of food varieties, minerals and nutrients to both people and animals. In Okavango for example with the hotels along waterfronts, ground seepage and contamination from sewerage systems is a possibility. Such contamination may lead to eutrophication of the water. Pollution may come from lead compounds from petrol in heavily patronised tourist areas. These may accumulate in quantities large enough to be toxic to aquatic life. These settlements and human activities obviously displace wildlife. The settlement policy does not address this issue at the moment. Even in national parks tourist facilities such as campsites and lodges are sited in ecologically sensitive areas such as along waterways. This is a hindrance to the free movement of wildlife to the water, which is an essential element of their survival.

3.2.2 Economic

Tourism in Botswana is still at infant stage and as such it seems to have only limited linkages to other sectors of the economy. On international agreements and conventions, Collingwood (1997) states that internationally and nationally there are grounds for concern. Funding levels for wildlife conservation and management are inadequate and they are not maintained. Beyond finance there is still a great and unsatisfied need for technical support and above all for capacity development (in general the follow up of the 1992 Rio agenda for actions is not impressive). He goes on to say closer international partnerships needs to be developed, not just in the donor/recipient relationship, but South/South and North/North. The aim must be to

prevent biodiversity conservation and management from being crowded out by other competing priorities.

The curio industry is a big consumer of hard woods and palm leaves that are used to make baskets and carvings. Occasionally these, when not harvested sustainably, cause localized or extensive over-harvesting of rare indigenous trees. There is a loosely structured co-operative which acts as a middleman. It buys crafts from artisans and transports and sells them to a store in Maun - the main town near the Delta which is the major tourist stop. Another middleman is a church organisation which operates on the same lines. The crafts in some cases have proved to be a crucial source of income especially for the elderly and female households.

Tour operators in many cases arrange to have their payments done abroad. As was mentioned before of the gross visitor expenditure there is some considerable amount that is retained outside the country and another amount that represents leakage due to imports. As such what is reaped from the environment to create an attractive tourism product does not all get ploughed back so as to be able to pay for manpower plus the training required and other facilities that are needed to sustain posterity of biological diversity. Payments by tourists should be done locally so that the local people can benefit.

3.2.3 *Social*

There are land use conflicts that exist between tourism (i.e. mainly wildlife) and other sectors, like agriculture. Although not to be overrated, negative impact issues can be brought in to the country by tourism or they can be enforced (drugs, crime, etc.) and negatively influence the social fabric, possibly rising negative perceptions on tourism in the indigenous population. This would result in a bad attitude towards tourism and conservation efforts supported by benefits of tourism. Negative perceptions by Botswana might also arise if the imbalance of ownership and management within the sector continues.

People have been displaced to create natural resources conservation zones such as during the creation of Makgadikgadi Game Reserve and other national parks. In Botswana the government has been encouraging the indigenous San people to relocate from the Central Kalahari Game Reserve to a settlement outside the reserve but this is an issue that has caused long drawn debates.

3.2.4 *Technical (managerial)*

An unbalanced industry development is the major threat to tourism development in Botswana. This is so especially in view of the fragile natural environment in national parks, game reserves and wildlife management areas. There has been easy transferability of licenses whereby large companies that have money have swallowed smaller ones. This creates a monopoly by the big giants and the local people cease to see the benefits of conservation. Over-utilisation of limited resources, e.g. land and water, can lead to conflicts but also to destruction of assets. If carrying capacity

ceilings are not respected, certain areas may even experience, at least temporary, signs of “mass” tourism. Tourism development is at a relatively youthful state of development. This is characterized by a somewhat dangerous dependency on the single product of wildlife, offered in a restricted part of the country. This at the moment is manifested in an absence of professionalism in terms of knowledge of conservation ethics and also to some extent poor customer service due to a high percentage of untrained staff in the industry.

Another managerial challenge is that most recreational hunters, many of them tourists, prefer to hunt rare species e.g. lion. To get the desired trophies they may even illegally kill conserved species.

3.2.5 *Human resources.*

There is at present limited awareness about the opportunities of tourism and a general lack of entrepreneurship in Botswana. The local population is as such not much involved in the activities of this sector . This has left an apparent dominance of foreigners in both ownership and management of tourism companies. The benefits to the community therefore are small because locals are employed in junior jobs and are paid low wages. Sometimes negative views about tourism are created because locals are made to feel that they interfere and their presence is shunned in front of tourists. The local people therefore need to be given opportunities for training and advancement for them to realise the benefits of tourism and hence support biological conservation.

3.2.6 *Biodiversity conservation (at all three levels: ecosystem, species and genetic)*

Almost all human activities disturb the existing biological environment. Vegetation degradation is caused by construction of hotels and camps, collection of fuel wood for heating water and cooking and for making campfires. Carelessness may even cause the fire to burn extensive areas of vegetation. This can alter the vegetation itself and consequently the fauna composition. Human settlements cause the natural habitat to fragment. On some private game farms exotic species of animals have been introduced and it is not easy to predict that they would not eventually cause extinction of some indigenous species. Damage is also caused by vehicle pollution from hydrocarbons, dust and soil erosion. In the national parks and reserves there are degraded roads due to vehicle usage. These damaged areas become pools of water during the rainy season or sometimes elephants fell trees across the road thus blocking it, the drivers then open a new road to go around the blocked site. This destroys the vegetation over a cumulatively large area. Pollution of the soil, water and the atmosphere change environmental conditions that species are no longer able to complete their reproductive cycles. It has been documented that artificial illumination from campsites may affect some aquatic life forms.

During recreational activities, trampling has direct impact on the vegetation ground layer. This leads to a decrease in species diversity. In addition plant picking, uprooting and flower picking may also damage the vegetation composition. With regard to animals, hunting, shooting and fishing may deplete local populations of

certain species. The mere presence of people can be sufficient to disrupt the activities of animals especially breeding; this is particularly true for birds and large mammals.

In Botswana in situ conservation is commendable. However, as mentioned before, most habitat types do not have an inventory or the knowledge of even the most abundant taxa. Certainly many hundreds of species in Botswana have yet to be described by taxonomists. Lack of inventory is most pronounced in the documentation of invertebrate groups and the endemic species. In order to get the most out of its biological riches, Botswana needs to catalogue, understand and monitor changes in its biodiversity. There is at present though, limited fiscal and manpower capacity to fully catalogue and develop the biological resources.

Research carried out by the DWNP since the late 1980s has revealed that some wildlife species are under serious threat of extinction as their populations have declined considerably. For example, wildebeest and hartebeest were reported to have declined by about 90 percent. Most other species were reported to be in decline albeit at a slower rate. The elephant has been the only species whose population has continued to grow significantly. The issue of wildlife declines is complex since it can neither be attributed solely to any one particular cause nor be redressed with a simple solution. Man induced activities further complicate the picture. A number of negative factors known to be contributing towards the negative trend are: changes in climate especially recurring cycles of drought, rapidly increasing human population with its growing demand for land, and expanding livestock husbandry and arable farming. These affect wildlife by either reducing the carrying capacity of the land or by hindering necessary animal movements and migrations.

The harvest of wildlife remains a real threat to the survival of this resource. There continues to be hunting over and above the biologically sustainable quota. The Wildlife Conservation and National Parks Act provides for killing of wildlife, which causes or threatens to cause damage to property, consequently many predators including endangered species are killed in this manner. While this has been generally welcomed by the affected communities, conservationists have heavily criticized it. The abuse of hunting licenses also present a major challenge to law enforcement authorities, as unscrupulous hunters have a tendency of killing more animals than permitted.

It is also worth noting that the reported declines are in direct conflict with government policies of sustainable utilisation of wildlife including the promotion of CBWM programmes. The latter has the potential of fostering harmony between rural communities and wildlife.

3.2.7 Examples of bad practices and failures

Institutional Capacity and Private Sector Participation: Although wildlife management in Botswana has made positive strides through the implementation of community based wildlife management programmes (CBNRMs), the management of wildlife as well as other natural resources is generally perceived to be lagging behind the dynamic and rapidly changing environment. There have been forums, which have raised scepticism on the effectiveness of wildlife policies and programmes. There have also been doubts about the capacity of the DWNP in managing these resources

and meeting the challenges of the 21st century. It has been suggested that a National Parks Board be created to foster private sector participation at higher levels of decision making.

Hunting and Habitat Loss: Thouless (1997) writes that there is no other sufficient explanation to the main cause of wildlife declines in the Kalahari area than overexploitation. Due to concerns about diminishing wildlife populations, commercial and citizen hunting has largely been banned in both Kgalagadi and Ghanzi districts. Most hunting that still occurs is carried out illegally, favoured species being Eland (*Taurotragus oryx*) and Gemsbok (*Oryx gazella*). Because of the vast areas, the effectiveness of anti-poaching operations is necessarily limited, although DWNP has now intensified its efforts in this area. In the long term the greatest threat to wildlife in unprotected parts of the Kalahari may be habitat loss, and there is continuing pressure to erode the wildlife management areas in favour of cattle ranching. However it appears that even if wildlife habitats are secured, recovery of populations in these areas will be inhibited unless illegal hunting can be controlled.

Fires: There is the issue of fires, which destroy habitats and are a major environmental problem. Problems arise from Botswana's aridity, which makes it difficult to control fires. People must be made aware of the damaging effects of fire, and fire management policies must be established and implemented.

Fences and Cattle: One rather complex practise is the issue of livestock husbandry in Ngamiland, the land of the Okavango Delta. The presence of cattle in this area has now and again resulted into conflicts between biological conservation or its sustainable utilisation, and measures taken by the veterinary department to contain livestock disease. This conflict has in part been linked to the buffalo fence around the delta. This fence functions to restrict contact between cattle and buffalo in an effort to control transmission of foot and mouth disease from buffalo to cattle. There are also three very long fences that were constructed in 1996 to try and stop the spread of cattle lung disease (bovine pleuropneumonia), which had erupted in the cattle population there. The fences were not effective in containing the disease outbreak and the Ngamiland's entire 350,000 cattle stock had to be exterminated. The buffalo fence and the cattle lung disease fences have negative effects on the natural dispersal pattern of wildlife in the area. Then there is the tse tse fly spraying in the delta to control the disease that this fly causes to cattle. The chemicals sprayed could be fatal to many organisms that live in the delta ecosystem. If there were no cattle all these cattle disease control measures would not be necessary. It has to be noted, however, that in Botswana tradition and culture, cattle denote wealth, power and provide food . Cattle have such a high sociological value that their worth cannot be expressed in monetary or other common expressions of value. As such the debate on the conflict between cattle disease control and the conservation of biodiversity is a non starter or of limited extent.

4. PROPOSED STRATEGIES AND SOLUTIONS

The following are proposed strategies and solutions for improving biodiversity conservation and planning into the tourism planning sector:

4.1 Policy – oriented

There is need to improve the effectiveness of the Department of Tourism in linking tourism development to conservation of biodiversity in Botswana. A clear policy commitment should be reflected both in the Tourism Policy and in the links created with the NCSA. A conservation liaison office should be created within DoT with a mandate to link the department with other conservation bodies, and to carry out EIA audits on tourism establishments measuring their mitigation of negative environmental impacts and commitment to the conservation of biological diversity on which the tourism industry is actually built.

The Tourism Policy should look into degradation factors such as the clearing of many areas for building camping sites, airstrips, etc. In addition it should address collection of wood for recreational fires and fuel, for building camps as well as for building dug out canoes (mekoro). Clearing vegetation for boundary demarcation of animal reserves and other tourist attraction areas should be regulated and monitored. The siting of tourist hotels and camping sites next to rivers and water sources for wildlife has many detrimental ramifications and alternative ways of recreational siting should be found. The extraction of water from bore holes to provide water for recreational purposes such as in swimming pools and other purposes that require large quantities of water especially for tourist hotels may affect the water table in Botswana's arid areas and hence the biodiversity that depend on it. These and many other issues need to be brought to light and addressed. There has to be buffer zones between protected areas and human activities, e.g. game ranches or Controlled Hunting Areas (CHAs). Fencing of protected areas and provision of water and other resources can alleviate conflicts with livestock and people's settlements. There is need to maintain visitor numbers into protected areas below carrying capacity levels in order to have sustainable tourism and not damage the resource that tourism depends on. Large numbers of people in an area at any one time cause damage to the environment. It is recommended that efforts should be made to spread the tourism season throughout the year to avoid high peaks. Ecozoning (zoning of natural resources and habitats) should be done to avoid environmental deterioration and for securing safe undisturbed habitats for species vulnerable to human interference. Zones that are not so vulnerable should allow higher visitor levels which they can sustain.

The Government of Botswana is doing well on a number of fronts and this performance should be maintained. Land allocation programs and the control and management of parks contribute positively to tourism. Botswana is land locked and has boundaries with Republic of South Africa, Namibia, Zambia and Zimbabwe, dialogue and good relations have been maintained in cases of conflict such as cross border poaching, violation of rules by tour operators from neighbouring countries and problem animal control. The creation of the Kalahari Trans-frontier Park has set a precedence for more ecological mindfulness in the demarcation of wildlife zones. The fencing programme for veterinary disease control has accepted the concept of leaving gaps to allow wildlife movement between national and international zones where ever this does not compromise the livestock disease control efforts. Funding is pumped into developing management plans for all areas. Efforts being made to diversify tourism to cultural, historical and other manmade attractions will reduce imminent pressure on wildlife areas.

4.2 Economic

As a result of government efforts to conserve natural resources, wildlife based industries including tourism contributed about P271.8 million or 3 percent of the gross domestic product in 1995. It is expected that tourism based on both consumptive and non consumptive uses of wildlife will continue to grow and contribute to the national economy. This is particularly important as wildlife based tourism has the added advantage of generating employment in the rural areas. For these reasons, the importance of wildlife to the national economy cannot be over-emphasised. A look at NDP 8 shows that for both recurrent and development expenditure the share devoted to wildlife conservation (assuming that this covers biodiversity in general) is around 0.7%. This figure includes all anticipated donor support. A fundamental review of biodiversity conservation priorities and the funding, both available and still required, for conservation initiatives, is imminent (Collingwood 1997). Coordination of various stakeholders through the NCSA rather than duplicating and wasting individual efforts would streamline and enhance the effectiveness of the limited funding that is available.

However, donor financial support, worldwide is vital if conservation programmes are to be funded adequately, in accordance with the Convention on Biological Diversity and the programmes of Agenda 21. The less developed countries like Botswana simply do not have the resources to follow these programmes through without external funding. Fortunately many donors are working to address this issue.

Efforts to make conservation pay for itself should continue. The CITES down-listing of the elephant, which is over abundant in Botswana, would be a tremendous contribution, through the country's renewed ability to once again trade elephant products.

Conflicts of crop raiding and livestock predation arising from communities living with wildlife are a major economic set back to the communities. The same communities should continue to be encouraged to conserve wildlife through strengthening community based natural resource management and sustainable utilisation not only in WMAs, but also inside national parks and game reserves. This is entirely consistent with modern thinking of people in national parks and with the biosphere concept. This could be a difficult subject for Botswana but continued reflections on it could bring an acceptable solution to all the stakeholders. Communities should be involved in the creation of protected areas. Examples of this exist in the creation of Moremi Game Reserve and the protection of the Okavango Delta by the people of Ngamiland.

Strengthened localisation, better positions and more jobs for local Batswana, would go a long way in stimulating harmonious co-existence of local people and wildlife and other biological resources.

4.3 Technical/managerial – including mechanisms for intersectoral coordination

Several positive management trends should be encouraged; these include community based protected area establishment and management, and trans-boundary cooperation.

Community based management has been encouraged through DWNP's efforts to relinquish its policing duties to communities, it now plays an extension role. Historically parks were established authoritatively from above but now in Botswana, wildlife sanctuaries are initiated and run by local communities. This has contributed tremendously to conservation of endangered species such as the white rhinoceros (*Ceratotherium simus*) and migratory birds such as flamingos and pelicans.

There is also cross border international cooperation; the Kgalagadi Trans-frontier Park has a management committee, comprised of members from the Department of Wildlife and National Parks and South African National Parks, which oversees developments within the system. It has a management plan in place that provides guidance on how the system can operate, and addresses different issues such as problem animal control.

Another program that should be supported is the inventory of existing and potential ecotourism attractions. The methodology being used for this project has involved the establishment of a Geographic Information System (GIS) into which a range of data will be fed. This will be easily sufficient to identify sites with a range of attributes that make them potentially viable for ecotourism pilot projects. The GIS will include data sets such as: sites of high archeological potential; national monuments; proximity to protected areas (foci for tourists); CBNRM areas; proximity to major tourism routes; water utilities dams; and villages with cultural attractions and areas of scenic value. Experts collect archaeological, museum and national monument data. The results are transferred onto the GIS and given attributes. CBNRM areas will be mapped on to the controlled hunting area boundaries. Dams will be inserted into the GIS and protected areas taken from national data. To be included as well are additional areas of interest such as nature reserves and game farms.

Another technical area that could benefit from intersectoral coordination refers to the fact that most habitat types do not have biological inventories. Taxonomists should be employed to describe as many species as possible. Endemic species and other species of world or regional importance could create important tourism attractions. All National Parks, CBNRMs and private sanctuary operators should be required to post an inventory of biological resources and a monitoring record of the species abundance.

In defining the role of local, district and central government authorities (and private and civil society) regulatory mechanisms have been observed to have a tendency of being expensive and difficult to enforce, while excessive 'red-tape' can stifle investment. Conversely, the lack of an effective planning and regulatory framework can easily lead to ill-thought-out and unsustainable tourism development. The challenge therefore is to find the balance between facilitating market-led tourism development by harnessing the expertise and entrepreneurial drive of the private sector, while at the same time ensuring that the necessary legislative, planning and regulatory framework is in place to guard against unsustainable, ill-conceived, or damaging developments.

Other suggestions that have been made include the creation of a National Parks Board to foster private sector participation at higher levels of decision making. Others

suggest that certain activities of the DWNP such as administration and development of tourist facilities in protected areas should be outsourced to the private sector to improve management and customer satisfaction. It is further urged that the placement of the DWNP in the Ministry of Commerce and Industry is inappropriate.

Another recommendation is that the western and developed world should respect the fact that existing protected areas, which hold much of the remaining wildlife in the world, have been in the hands of local people for centuries. It is ironic therefore that the developed world should be prescriptive and iron handed in what the developing world should do to conserve its natural resources. Suggestions and agreements should be reached on the basis of mutual respect. International conventions such as CITES and the work of NGOs should operate under this principle.

4.4.1 Human resources (including education and training)

More resources should be injected in training adequate workers with the right skills and knowledge to protect and make policies that are appropriate to the sustainable use of Botswana's biodiversity. More human resources should be made available to support the anti-poaching operations and the general policing of compliance to biodiversity conservation regulations.

Official information on policies, rules and conduct required to sustain biodiversity conservation should be readily available to tourists visiting Botswana, to tour operators and the local community. Public awareness campaigns using seminars, videos, school curricular programmes, should be done to raise public awareness about conservation and benefits of tourism. There is a course that was run from 14 August –7th September 2000 in Botswana for the Southern Africa region. This course, on biodiversity, biotechnology and law, was sponsored by the Global Biodiversity Institute of Delaware in the United States of America. The course objective was to provide up to date information and training in biological diversity and biotechnology to scientists, lawyers, government officials, intellectual property professionals and other stakeholders in Southern Africa to stimulate economic development and biodiversity conservation. Such approaches should be frequently employed.

Technical and financial support should be provided for creating awareness of programmes such as Chobe Enclave Conservation Trust and other CBNRMs to assist people in making informed choices between their economic engagements especially where there are serious conflicts between wildlife tourism and farming communities. It must be noted, however that cultural practice will take a very long time to change.

4.5 Biodiversity conservation *per se* (at all three levels: ecosystem, species and genetic)

It is recommended that there should be overall management plans for important biodiversity conservation sites such as the Okavango Delta, only part of which is a protected area. Efforts to continue seeking protected area status for areas such as the Moremi Gorge on the Tswapong Hills, Tsodilo Hills and the delta pan handle should continue and receive support. There should also be better coordination of land use designation between protected areas, agricultural areas and settlements. Environmental impact assessment of veterinary disease control cordon fences and

other means of providing animal migration and other movements and EIAs on other tourism establishments such as hotels and airports should be a must and auditing of their mitigation on environmental effects should be enforced. Trans-boundary cooperation with neighbours and further explorations into the possibility of creating more peace or trans-boundary parks to maintain the integrity of cross-border ecosystems and genetic exchange should be considered critical issues in sustainable biodiversity conservation and successful tourism development.

Preventative fire policy must be established to curb the frequency of dry season fires that are often being set by people. These fires cause total removal of grass and ground layer biomass in most habitats; they cause the progressive destruction of woody vegetation including trees and the role of these as habitats for other organisms. These fires also increase the rate of nutrient cycling with the ultimate loss of nutrients by leaching in sandy soil environments leading to a lowering of graze quality and other needed nutrients for a wide range of organisms.

There should be studies to determine the extent, trend and the biodiversity response to factors like fire, drought, diminishing canopy cover, human and livestock encroachment, predation, noise, and other human disturbances. This should aim at describing thresholds of sustainability to such disturbances on the various species.

4.6 Examples of best practices in linking tourism development and BCP

A(i) Name of project or development: Chobe Enclave Conservation Trust

In Botswana there is the Chobe Enclave Conservation Trust project, which aims at returning custodianship of natural resources to the people who live with those resources.

A(ii) Exact location

The Chobe Enclave is in the far north of the country. It was the first one to be issued with community management rights. The Chobe Enclave is bounded by the Chobe National Park and the Chobe River that marks the boundary with Namibia's Caprivi Strip. It is made up of five villages covering 306,000 hectares of tribal land of which 137,000 have been gazetted as forest reserve. Of the 169,000 hectares available for farming and grazing 91,000 hectares lie within the Chobe River flood plain and are subject to periodic flooding. The five villages have a population of around 5,000.

A(iii) Management and coordination

The communities were initially introduced to natural resource management through government and NGO support. They now manage their own

guest house project, a fish farm and manage a hunting quota. They have five village based committees that have representatives on a board. They have a constitution of their community trust that has given them legal status and a set of rules.

A(iv) Description of main objectives, achievements, and constraints

The constraints have arisen from development of deep divisions within the community over access to wildlife and to lands associated with it. There was mistrust, but a number of key management decisions were made by the communities such as considering wildlife to be a common resource and to work together as a group of independent but connected communities. The communities have also agreed to have community members accompany each hunter to ensure that proper practice and procedures are adhered to.

In the first two years they made almost US \$ 12,000 the following year \$27,000 and then \$65,000 in 1995. In 1996 they stood to make \$100,00. The trust made a decision to reduce the percentage of the quota that is sold to hunters during 1997 in order to sustainably manage their resource. Links were being made between resource conservation and benefits. It is no longer the size of the quota which matters but the sustainability of the benefits to be derived from it.

B(i). Name of project: Moremi Wildlife Reserve

B(ii) Exact location: Moremi Wildlife Reserve is situated in the eastern reaches of the Okavango Delta.

B(iii) Management and coordination:

This can only be described by telling the story of how the reserve was formed. Moremi's distinction is that it is the first wildlife sanctuary in Southern Africa created by an African tribe on their own land. Moremi is the only protected area within the Okavango Delta and as such it is of enormous scientific and environmental importance. This reserve features prominently in Botswana's tourism portfolio. It has excellent wilderness, scenery and wildlife including birds and fish besides large game.

The origins of the reserve go back as far as the 1896 great rinderpest (a deadly virulent infectious disease of ruminants especially cattle) which reduced wildlife populations and hence the tsetsefly range. (Tse tse fly is an African fly of the genus *Glossina* which causes disease especially sleeping sickness. It thrives in areas where it can suck blood from wildlife and livestock). Following the reduction of tse tse fly, man and his livestock expanded into the Okavango Delta. Most communities disappeared due to re-invasion by the fly in the late 1940s. In 1961 the idea to form a game reserve was born. A Fauna Preservation Society (FCS) affiliated to a headquarters based in London was formed through the Batawana (one of the local tribes). In 1963 the Batawana annual meeting approved setting up a reserve in Moremi and FCS and Batawana elders fixed the boundaries of

the reserve. Chief L. Moremi was reigning and the reserve was named after him. Regulations for tourism in the reserve were drawn. There was rapid increase in tourism in the area with 4.500 visitors in 1971. The Department of Wildlife and National Parks took over its management in 1979. It took a very long time to come to an agreement on how to share the revenues obtained from entrance fees between government and the Tawana Land Board. Agreements regarding who can issue leases and dictate conditions within the reserve have also been slow to develop.

B(iv) Description of main objectives, achievements and constraints:

The efforts of the people of the Okavango to conserve the environment and the biodiversity within is shown by their resistance in a case where the Government of Botswana's Department of Water Affairs had developed a project known as the Southern Okavango Integrated Water Development Project (SOIWDP). The government was considering improving agriculture in the area and providing water to areas far away that did not have water. The idea was to dredge Boro River, which is the major channel from the Okavango Delta that flows into Tamalakane and Boteti rivers. The channel excavation was designed to reduce flooding so it could expose more land for agriculture and this would also enhance the flow of the river conserving water that is lost to evaporation so that communities that have a water shortage can use it.

There was considerable opposition to the implementation of this project. The local people said dredging the river would kill the river and the delta. They referred to the dredging of the lower Boro in the 1970s, the creation of Mopipi Reservoir and diversion of Boteti waters into the reservoir which did not produce the intended results. They said this project was also not going to achieve the goals and that there were better alternatives for achieving the goals.

The government showed response to local concerns by suspending and eventually cancelling the project. The contractor who was already on site had to decommission and leave.

C(i) Name of project:

Kgalagadi Trans-frontier Park, launched on 12 May 2000, was the first formally declared trans-frontier park in Africa (Trans-frontier parks are sometimes known as Peace Parks). It will hopefully be a model for conservation in the 21st century.

C(ii) Exact Location

The Kgalagadi Trans-frontier Park is located around the international boundary of Kgalagadi District on the southwestern border of Botswana and the Northern Cape border of South Africa. Contained within its new boundaries is the 9,591 square kilometres formerly Kalahari Gemsbok National Park in the Republic of South Africa and the 28,400 sq km former Gemsbok National Park in Botswana. This is about 250 km north

of Upington or 310 km west of Tshabong. The park is located on the Kalahari Desert which is part of the largest continuous area of sand in the world. The sand plains cover nine African countries: Gabon, Congo, Democratic Republic of the Congo (in the north), Angola, Zambia and Zimbabwe (in the centre), Botswana, Namibia and South Africa (in the south). The sand can be well over 100m deep.

C(iii) Management and coordination

Plans to formalise the joint development and management of the two contiguous parks were proposed in 1989 following a fact-finding study on tourism developments in Southern Africa. As a result, in May 1991 the Department of Wildlife and National Parks of Botswana received the mandate to consult further on the matter with South African National Parks. Initial meetings between the two conservation agencies led to the establishment of the Trans-frontier Management Committee (TMC). The Kgalagadi Trans-frontier Park (KTP) has been in *de facto* existence for more than half a century. It has enabled Botswana and South Africa to manage this vast area, located in the southern Kalahari, as a single ecological unit. In recognition of this agreement, no barriers to wildlife movement exist along the international boundary that separates the parks.

The TMC has been responsible for the co-ordination of the management of the two parks and has worked towards the formal establishment of the trans-frontier park. The management plan for the area was drafted by the TMC and the policies and actions necessary to maintain the cohesiveness and unity of the trans-frontier park were agreed upon. It provides the policies for joint management of the area as a single ecological unit and serves as a basis for the promotion of tourism. This plan is now being implemented and will be regularly revised and updated. Tourists will be able to move freely within the park and the TMC has produced a unified set of regulations to govern visitor behaviour. The two parks operate autonomously in the running of their own internal affairs and in the development of their own tourist facilities as agreed in the management plan. Both countries recognise the sovereign equality and territorial integrity of the other. It has been agreed that entrance fees will be pooled and shared equally by both countries but that other income (from accommodation, camping, etc.) will be retained by the countries that generates it.

C (iv) Description of main objectives, achievements and constraints

One needs to understand that the southern Kalahari represents an increasingly rare phenomenon in the world: a vast ecosystem relatively free of human influence. The absence of man-made barriers, except to the west and the south, has made possible the establishment of a conservation area large enough to maintain examples of two ecological processes that were once wide spread in the savannas and grasslands of Africa. These processes are: (1) large scale nomadic and seasonal movements of wild life, and (2) predation by large free-roaming mammalian carnivores. These two processes are extremely difficult to maintain except in the largest of

areas, and their presence in the Kalahari makes it a valuable area for conservation.

The overall objectives of the management plan of the KTP are as follows: To preserve the diversity of organisms indigenous to the southern Kalahari as functional elements of the ecosystem, with predators receiving priority; to maintain those ecological processes which characterise the Kalahari ecosystem; to provide facilities and opportunities for research and monitoring to advance understanding of the physical and biological processes of the Kalahari ecosystem; to provide educational and interpretative programmes for visitors to foster a better understanding and appreciation of the Kalahari ecosystem and to realise economic returns from tourism while safeguarding the ecological integrity and pristine wilderness of the Kalahari.

The benefits for South Africa and Botswana include the following: Guaranteeing the long-term conservation of the valuable wildlife resources in the southern Kalahari, thus helping to maintain the integrity of the entire Kalahari ecosystem; pooling of expertise and experience on a good neighbourly basis; raising the international profile of this important conservation area through joint promotional campaigns, thereby enhancing its status and potential as a tourist destination; maximising the tourism potential of the park and surrounding areas, which will generate economic benefits for both countries, especially to the local communities living nearby; strengthening of political ties and the promotion of regional peace and stability through mutual co-operation.

The constraints include fires that may burn in the park then go out of the park threatening the surrounding people, buildings and other properties. The two countries will cooperate in fighting of fires. Predators have been a thorny issue for the surrounding livestock owners. This is a sensitive issue as farmers resent their livestock being killed by lions and hyenas from the Park. An electrified fence has been built to prevent the local lions and hyenas from leaving the park in the particular troubled area. The authorities are trying to establish a cooperative relationship between the park and the surrounding communities. Movement of animals have been affected by extensive fences that have been erected for varying reasons. Movement of wildebeest, hartebeest and eland to the north of the park may be curtailed by the possible construction of a fence to protect the Trans Kalahari Highway from livestock and other animals to avoid fatal motor traffic accidents. Botswana is trying to keep the land to the north of the park open, without fences so that movement remains a possibility.

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