

# GOAL 7

“ By the year 2016, economic growth and development in Botswana will be sustainable. Renewable resources will be used at a rate that is in balance with their regeneration capacity... There will be a fully integrated approach towards conservation and development. The key natural resources and assets of the country will be equitably distributed between its people. Communities will be involved in the use and preservation of their environmental assets, and will benefit directly from their exploitation. The attitude towards natural resources will pay attention to a fair distribution between present and future generations. The wild life of Botswana will be managed for the sustainable benefit of the local communities, and in the environment. ”

QUOTE FROM VISION 2016



## THE ENVIRONMENT

Targets	Will target be reached?	Conducive Environment?
18. Reduce by 50 percent, the proportion of people without sustainable access to safe drinking water by 2015	Likely	Strong
19. Reduce conflict between population growth, land usage and environmental and natural resources degradation	Potentially	Good
20. Promote environmental education and awareness necessary to reduce the level of environmental contamination and achieve sustainable development	Potentially	Good

Botswana's range of policy and legislative instruments for sustainable use of environmental resources is extensive. Institutional and monitoring capabilities should receive similar attention.

## 1. WHAT IS THE SITUATION LIKE?

Botswana's stock of natural resources includes land, minerals, water, flora and fauna, and is the backbone of the economy and livelihoods. The basic principle governing the management of these resources is, as stated in NDP9: "Integration of the conservation of natural resources into the national development process" to achieve sustainable development. The attendant objectives are the achievement of equity, intra and intergenerational, in the use of natural wealth. Thus sustainable development is viewed in terms of strategically linking population dynamics, the economy and natural resources to balance development interests within and across generations.

The management of Botswana's natural resources is guided by national environmental legislation and strategies, and multi-lateral environmental agreements (MEAs), seven of them signed between 1997 and 2003 alone. The Government is committed to Agenda 21, the global environmental agenda for addressing the key socio-economic and environmental challenges of the 21<sup>st</sup> century.

Within the framework of the sustainable use of environmental resources, the priority environmental issues are: (a) land degradation and the related issues of desertification, soil erosion and biodiversity loss; (b) conflicting land uses, some of which are discussed below; (c) climate change; (d) access to water, for household, livestock, arable and industrial use; (e) water scarcities; (f) fuel wood depletion and lack of alternative forms of energy; and (g) the protection of cultural and natural heritages.

The human development concerns emanating from the foregoing are equitable access to land resources such as water and land; and land use conflicts. The key land use conflicts are those between human beings, livestock and wildlife; those between commercial interests such as large-scale farming, mining and tourism on the one hand and subsistence interests such as small-scale farming,

hunting and gathering on the other; and that between the present and the future - do current generations' use of natural resources provide adequately for future generations' development need for such resources?

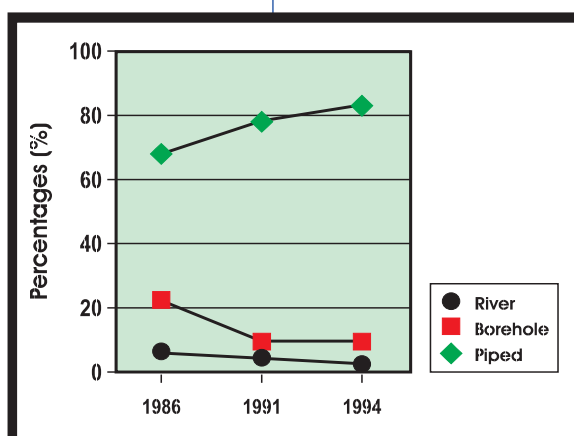
### ACCESS TO SAFE DRINKING WATER

Although water is a scarce resource in Botswana, the country is firmly on course to ensuring universal access to safe drinking water. The proportion of the population with sustainable access to safe drinking water has increased, rising from 77% of the population in 1996 to 97.7% by the year 2000.

#### Multilateral Environment Agreements signed by Botswana.

1. UN Framework convention on climate change (UFCCC).
2. UN Convention to Combat Desertification (UNCCD)
3. Convention on Biological Diversity (CBD).
4. The Ramsar Convention on Wetlands of International Importance.
5. The Basel Convention on control of Trans-boundary movement of Hazardous Waste and their Disposal.
6. The Cartagena Protocol on Biosafety
7. The Convention on the Protection of the World Cultural and Natural Heritage

Percentage of Households using Piped Boreholes and River Water source





Surface water resources, though limited, are the main source of water supply in urban areas while rural areas rely more on underground water resources. All officially recognised settlements have at least one standpipe within an average radius of 400m from every household, provided and maintained by the Government.

Some disparities in access to water exist between urban and rural areas. In 2000, nearly all households in urban areas had running water in their homes (52.1%) or could fetch it from a nearby public standpipe. Only 9.1% of rural households had piped water in their homes. About 7% did not have access to safe drinking water at all.

#### Main Sources of Piped Water for Households in Botswana in 2000 (%)

Location	Inside House/Plot	Outside Plot	Other
Urban	52.1	47.9	0.0
Urban Village	50.1	49.7	0.2
Rural	9.1	84.2	6.7
National	37.1	60.6	2.3

#### ACCESS TO SANITATION

According to 2001 census data, 77% of households in Botswana have adequate on site sanitation – 95% in urban areas and 51% in rural areas – as per the WHO standard. Slum conditions do not exist anywhere in the country. Even so, there are high-density areas in towns where sanitation levels are relatively poor. Furthermore, the majority of households outside towns and cities use pit latrines and septic tanks, which are threats to underground water resources.

Sewerage coverage and waste management in towns and cities is good, so sewerage programmes are putting more emphasis on rural areas. The National Master Plan for Waste Water and Sanitation aims to double sewerage coverage from 12.5% of the population to 25% by 2030. Commensurate effort should go into sewerage and waste water management. Botswana has about 75 wastewater treatment facilities and manages to avail only half of its annual throughput of wastewater for reuse.

#### Sanitation Standards

The WHO on site sanitation standard accepts a pit latrine as adequate. The Government of Botswana uses a relatively higher standard, the ventilated pit latrine. According to this standard, sanitation levels drop to 39% in 2001 – 53% in urban areas and 18% in rural areas.

The GoB aims to raise access to sanitation to 75% by 2030 through initiatives that target the population without access to sanitation and those using unventilated pit latrines

#### MANAGING AIR POLLUTION

Information from Botswana's 17 monitoring stations in the country indicates that air pollution levels are high in three major population centres, namely, Gaborone, Selibe Phikwe and Maun. In Gaborone, the key pollutants are industrial dust, motor vehicle emissions, and smoke from burning refuse. In Selebe



Phikwe, the main pollutant is sulphur dioxide gas from the local copper-nickel smelter complex. Though sulphur dioxide concentration levels remain within the allowable limit of  $160\mu\text{g}/\text{m}^3$  most of the time, the gas damages both natural vegetation and crops around the town, and is a health hazard, especially to asthma patients. Maun has registered high concentrations of ozone pollution, whose annual peak, in October, coincides with the dry season and veldt fires.

Air pollution is regulated through the Atmospheric Pollution Prevention Act (APPA), which sets pollution control standards and provides for the monitoring of industrial pollution and the issuance of Air Pollution Registration Certificates (APRC) to compliant polluting industries.

### LAND USAGE AND ENVIRONMENTAL DEGRADATION

Botswana's land surface area is about 582,000 km<sup>2</sup>. Only about 5% of this is cultivable and less than 1% is tilled. The main forms of land use are (a) reserved forest and vegetation, (b) pastoral farming (60%), (c) National Parks, Game Reserves and Wildlife Management areas. Botswana has set aside 17 percent of its land area for national parks and game reserves. Wildlife utilization has been earmarked as the main form of land use on a further 22 percent. In addition, there are several private game reserves and sanctuaries.

There are three forms of land tenure in Botswana, viz., customary, freehold and state. Customary land accounts for 71% of the total land surface area and is a communal resource on which user rights are relatively insecure. State land accounts for 23% of the country's land surface area and is managed exclusively by the State. It comprises game reserves and forest reserves. The remaining 6% is freehold land under which users have well defined and well protected exclusive rights of use.

Pressure on land resources comes from a variety of sources: economic expansion, population growth, migration, livestock populations, animal populations, and climate change. Economic activities, industry, farming, etc., not only consume land resources but also pollute them. Population growth leads to the annexation of more virgin land to meet human needs such as shelter, energy and water, and the generation of higher volumes of waste. Thus, the GoB has opted for integrated land use planning to strike a balance between competing land uses.



### ENVIRONMENTAL EDUCATION AND AWARENESS

Education and public awareness about environmental issues is fairly strong even though the total effort on environmental education appears under-resourced and in need of stronger coordination. The National Conservation Strategy Agency (NCSA) coordinates advocacy and public awareness on environmental conservation. A number of NGO's



are also active in environmental conservation and awareness creation. Significant achievements have been made.

Environmental education has been integrated into the school curriculum. Public education seminars are held in districts/communities and every year, high profile commemorations are held on environmental issues. The print and broadcast media (radio in particular) also cover environmental education. Strict regulation of hunting activities has also generated strong community consciousness about conservation issues and significantly reduced illegal hunting.

The impact of environmental education on public perceptions and practices in relation to the environment is not easy to measure but the message, even when received and understood, may be in operable under conditions of poverty. For instance, fuel-wood is the dominant source of energy for poor people, especially in rural areas. In 2002, an estimated 92% of rural households and 43% of urban households depended on fuel-wood for energy. This is a threat to biodiversity but technology is yet to deliver viable alternatives for poor people. Nevertheless, there has been a steady decline in dependence on fuel-wood between 1991 and 2001, which most likely reflects rising scarcity values for fuel-wood and growth in household income.

## 2. MAJOR CHALLENGES

Botswana is alert to many of the mainstream environmental challenges and has signed the major international instruments relating to these. The country must now focus on strengthening institutional capacity to take care of its environmental resources in accordance with these commitments and its development needs. The challenges are many and varied but two of the more urgent challenges relate to water and land.

### RESPONDING TO THE INCREASING DEMAND FOR WATER

Water is a scarce resource in Botswana. It is scarce enough to become a binding constraint on development given the rapid increase in consumer and industrial demand for it. The water challenge is threefold.



First, Botswana must stay on the course of developing and protecting (from contamination) surface and underground water resources to meet demand. This should include maximising the capture of runoff water during good rains and exploring the viability of treating and recycling wastewater for reuse. Second, more effort must go into the search for more efficient technologies for using water in the household and at the industry level. Third, user consciousness about water conservation should be raised. These interventions should be elements of a strategy for sustainable development and distribution of water to all.

Access to water is also about developing and sustaining adequate supply capacity. How much of the cost of such capacity should the Government pass to users directly? A progressive cost recovery strategy may be evolving. The Water Utilities Corporation, aims for full cost recovery in the areas it serves, which are urban and richer. The Department of Water Affairs, which serves the poorer rural areas, aims for full recovery of operational costs and partial recovery of capital costs. Cost recovery in the provision of water is a sensitive proposition because water is an essential commodity, thus any cost recovery strategy proposed must be income progressive.

#### **IMPROVING LAND MANAGEMENT TO MEET DEVELOPMENT NEEDS.**

Land management remains a contentious issue in Botswana because of conflicting land uses and the expansion of human settlements and economic activity into new territories. The high profile issues of the moment are, (a) conflicting land uses, which underpin the ongoing conflict between the Basarwa and the Government over the former's relocation from the Central Kalahari Game Reserve; (b) the land market in urban areas, which is redistributing land in favour of the rich and frustrating Government programmes that give poor people access to land in urban areas; (c) and the privatisation of communal land for commercial purposes and the consequent curtailment of poor people's access to natural resources on such land.

Though less mentioned, holding land for speculative purposes is a cost society can ill-afford, especially in and around major human settlements. Botswana should perhaps consider a progressive land tax to improve land use efficiency.

#### **OVERCOMING RURAL POVERTY**

Many of the challenges related to the environment require that progress be made against poverty. For instance, the Ventilated Improved Pit Latrine is not costly but is still beyond the reach of poor households. Successful poverty reduction could generate significant gains in environmental sanitation.

### **3. SUPPORT POLICIES AND PROGRAMMES**

Botswana has an impressive mix of policies and legislation with a bearing on the environment, well in excess of 20. The key ones are listed in Table 19. The NCSA is the main agency overseeing the implementation of these policies and legislation.

## Environmental Concerns of Existing Policies, Programmes and Legislation

The Instrument	Year	Objectives
<b>Policies</b>		
National Policy on Natural Resources Conservation and Development	1990	To pursue policies and measures that increase the effectiveness with which natural resources are used, managed, and integrated in the works of sectoral ministries and interest groups.
Tourism Policy	1990	To obtain from tourism on a sustainable basis, the maximum possible net economic and social benefits
National Agriculture Development Policy	1991	To enhance rangeland management
National Settlement Policy	1998	To guide national physical planning as well as the distribution of investment and services in line with the settlement's comparative advantages and characteristics.
The Wildlife Conservation Policy	1996 Under review	To provide an overarching framework to guide the conservation and sustainable utilization of wildlife in Botswana
<b>Plans and Programmes</b>		
National Water Master Plan	1992	To provide an adequate road map for water development and utilisation
District Development Plans	1985	To rationalize the provision of infrastructure and social services and address pressure on land use and land resources
Integrated Land Use Plan	...	To address land use conflicts and ease land use pressure
<b>Environmental Legislation</b>		
Town and Country planning Act	1977	To harmonise and rationalize allocation of land to different uses and to ensure orderly development in declared planning areas.
Tribal Land Act	Amended 1994	To contribute towards responding to the land use pressure and address problems relating to land use land competition and land conflict
Agricultural Resources Conservation Act	...	To guide the control and conservation of agricultural resources
Waste Management Act	1998	To address the issue of land pollution and dereliction associated with human settlements.
Wildlife Conservation and National Parks Act	1992	To contribute towards the conservation of wildlife as land resources and to address the land use conflict between wildlife and livestock.

## 4. TO TRACK PROGRESS TOWARDS THE TARGETS

Botswana's institutional capacity to manage environmental resources is still in the early development phase. This capacity constraint is especially manifest at the level of statistical capability, which is weak in many dimensions.

The weaknesses in monitoring and evaluation capabilities reflect a wider institutional challenge for the management of natural resources. The Ministry of Environment was established only recently and has brought together a number of departments that had been housed in other ministries. It has an enormous organisational challenge that includes developing coordination and management systems and filling critical positions.

### Monitoring and Evaluation Capacity

Elements of Monitoring Environment	Assessment		
Data gathering capacities	Strong	Fair	<b>Weak</b>
Quality of recent survey information	Strong	Fair	<b>Weak</b>
Statistical tracking capacities	Strong	Fair	<b>Weak</b>
Statistical analysis capacities	Strong	<b>Fair</b>	Weak
Capacity to incorporate statistical analysis into policy	Strong	<b>Fair</b>	Weak
Monitoring and evaluation mechanisms	Strong	Fair	<b>Weak</b>