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BOTSWANA



COUNTRY PROFILE



UNITED NATIONS

INTRODUCTION - 2002 COUNTRY PROFILES SERIES

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

NOTE TO READERS

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

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List of Commonly Used Acronyms

ACS	Association of Caribbean States
AMCEN	Africa Ministerial Conference on the Environment
AMU	Arab Maghreb Union
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CARICOM	The Caribbean Community and Common Market
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
CSD	Commission on Sustainable Development of the United Nations
DESA	Department for Economic and Social Affairs
ECA	Economic Commission for Africa
ECCAS	Economic Community for Central African States
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	Foundation for International Development Assistance
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAEA	International Atomic Energy Agency
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development
IEEA	Integrated Environmental and Economic Accounting
IFAD	International Fund for Agricultural Development

IFCS	Intergovernmental Forum on Chemical Safety
IGADD	Intergovernmental Authority on Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
LA21	Local Agenda 21
LDCs	Least Developed Countries
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAs	Multilateral Environmental Agreements
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NSDS	National Sustainable Development Strategies
OAS	Organization of American States
OAU	Organization for African Unity
ODA	Official Development Assistance/Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Papers
SACEP	South Asian Cooperative Environment Programme
SADC	Southern African Development Community
SARD	Sustainable Agriculture and Rural Development
SIDS	Small Island Developing States
SPREP	South Pacific Regional Environment Programme
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change

UNFF United Nations Forum on Forests
UNFPA United Nations Population Fund
UNHCR United Nations High Commissioner for Refugees
UNICEF United Nations Children's Fund
UNIDO United Nations Industrial Development Organization
UNIFEM United Nations Development Fund for Women
UNU United Nations University
WFC World Food Council
WHO World Health Organization

WMO World Meteorological Organization
WSSD World Summit on Sustainable Development
WTO World Trade Organization
WWF World Wildlife Fund
WWW World Weather Watch (WMO)

**CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE
DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC
POLICIES**

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES - TRADE

Decision-Making: The Government, through the Ministry of Commerce and Industry has a dual responsibility of encouraging industrial development and protecting consumers. The Botswana Bureau of Standards, established by an Act of Parliament in 1996, is an independent body under the Ministry of Commerce and Industry to develop national standards to address the need for safe and environmentally friendly goods and services consumed in the country. The Bureau ensures that products produced in Botswana meet specifications of international trade markets, and that imported products do not have a negative impact on the Botswana environment.

At present, consumer groups are supported by the Government with the hope that they will grow and become independent. The Government believes that a strong consumer movement will in the future play a major role in trade and environment issues at the national and international levels. The Ministry is also considering legislation on consumer protection which will attempt to address issues relating to the environment.

The Government is committed to implementing a range of policies aimed at economic diversification. The new Industrial Development Policy is a comprehensive agenda for promoting growth in competitive manufacturing and service industries. A new International Financial Services centre is being established to attract foreign investors. Parliament has recently approved the Privatization Policy for Botswana, which aims to improve efficiency in the delivery of services, to encourage direct foreign investment and to boost the citizen business sector. The Government has also just reviewed its public procurement system, which will promote growth in the private sector by encouraging fair competition. In addition, a whole range of policies related to ownership, regulation and control of business are being reviewed to make them investor-friendly.

The establishment of the Botswana Export Development and Investment Authority (BEDIA) in 1997 was designed to boost investment promotion through partnership with the private sector. Because Botswana has such a small population, production for export has to be the main priority. BEDIA's job was made easier recently, when Botswana was awarded the highest credit rating in Africa by independent investment assessors.

The Government economic policy continues to focus on the twin aims of economic diversification and balanced budgets. In its efforts to diversify the economy, the government is pursuing a range of investor-friendly policies, including the establishment of an International Financial Services Centre.

Programmes and Projects: See under **Decision-Making**.

Status: Through disciplined macroeconomic policies, the government has succeeded in combining high economic growth with low inflation and sustained budget surpluses. While many other developing countries have accumulated crippling debts to foreign creditors, Botswana has invested its budget surpluses wisely and built up substantial reserves of foreign currency.

The 35 years since independence have seen a remarkable transformation in Botswana's economy, mainly due to the production and export of diamonds at three sites – Jwaneng, Orapa and Letlhakane – in the Kalahari. Diamonds now account for about 80 % of Botswana's export revenue.

In 2000 Botswana's exports shifted away from the United Kingdom and the Common Customs Area (CCA) of Southern Africa to other European countries and Zimbabwe.

Exports are dominated by diamonds, followed by copper and nickel, textiles, vehicle and parts, soda ash, meat and meat products. Botswana's impressive economic growth since Independence is based largely on good management of the country's diamond mining sector, which accounted for 79 % of export earnings in the first quarter of 2000. Minerals accounted for 33.3 % of GDP in 1999/2000 and the bulk of this came from diamonds.

Imports come mainly from the Southern African region, although there has been a recent shift in favour of Europe and the United Kingdom. Imports include machinery, food, vehicles, fuels, chemicals, wood, textiles, metals and other goods.

A significant level of economic diversification has already taken place. Prior to the emergence of the diamond industry, Botswana's economy was dominated by agriculture, particularly cattle-rearing. The structure of the economy has since changed enormously, with a steep decline in the importance of agriculture, a corresponding rise in the role of mining, and also growth in other sectors. Between 1966 and 1996, Botswana recorded an average

GDP growth rate of 6 % - the highest sustained real GDP growth rate in the world during this period. In the year 2000, annual per capita GDP stood at P15,270 (US\$2,776). While the GDP of the mining sector grew at an annual average rate of 3.9 % between 1983/84 and 1998/99, GDP in other sectors like electricity and water, trade, transport, finance and services (including tourism) grew even faster at average rates of 11-14 %. By 1999/2000 mining alone accounted for one third of Botswana's GDP, while Agriculture's share of GDP fell from 42.7 % in 1966 to 26 % in 1999/00. Inflation during 1999/2000 stood at 8.6 %, a rise from 7.1 % the previous year, caused largely by rising world oil prices and a weakening of the Pula against the US\$.

The challenge now is to provide a productive and motivated workforce that is fundamental to achieving the government's aim of sustainable economic diversification. The problem is that the rate of economic diversification is still not fast enough, but this is mostly because new industries are starting from a very low base. Crucially, growth of the non-mining economy has not yet provided the extra employment that had been hoped for.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The use of environmentally sound technologies in production is essential for the protection of the environment. It is becoming clear that technologies that lead to less pollution save energy, use renewable resources, and recycle waste. While there is no apparent legislation to force manufacturing companies to use environmentally sound technologies, it is noteworthy that some companies, such as the can recycling plant, do protect the environment by recycling their waste products. The Ministry of Commerce and Industry encourages such efforts.

Financing: No information available.

Cooperation: Botswana is a signatory party to the Montreal Protocol which discourages trade in electrical goods which produce chlorofluorocarbons (CFCs) that are harmful to the ozone layer. The Government, through the Department of Customs and Excise, will continue to monitor importation of such goods. The Ministry of Commerce and Industry participates in multilateral trade negotiations which include trade related environmental concerns. At the regional level, trade liberalization issues are being addressed, including those which will impact on the environment.

The World Trade Organization (WTO) has established a Committee on Trade and Environment to look at environment related trade issues and to elaborate specific standardization policies which will address concerns relating to industrial processes to reduce their impact on the environment. Such activities will contribute immensely to national policy development on environmental protection. These issues and policies will form part of the agenda of future multilateral trade negotiations. As a contracting member of the WTO, Botswana actively participates in and supports these trade negotiations and is required to ensure that her national policies reflect the aspirations of the international community on environmental issues. The agreements implemented by the WTO cover a wide range of economic sectors. These include agreements on trade in goods, services, agricultural commodities, textiles and clothing, trade related investment measures, aspects of intellectual property rights, and other trade remedies such as customs, pre-shipment inspections, and technical standards, etc.

Within the Southern African Development Community (SADC) region, trade liberalization is being addressed. The intention is that the opening up of world markets for agricultural and forestry products should not impact on the environment. Likewise, industrial processes or any other similar activities should not cause damage to the Botswana environment and that of her other trading partners. A protocol on trade cooperation in the SADC was developed and signed in 1996. The protocol includes provisions to ensure the protection of the environment by all contracting parties.

CHAPTER 3: COMBATING POVERTY

Decision-Making: The Government of Botswana is committed to a programme of poverty alleviation. The country's National Development Plan (NDP 8) (1997/8-2002/3) identifies poverty reduction as one of the top priorities of the Government. Following the recommendations of the 1997 Poverty Study, published by the Ministry of Finance and Development Planning (MFDP), the Government is currently working on a National Poverty Reduction Strategy and also reviewing its Rural Development Policy, which is complimentary to the Strategy.

The government publication, *Long Term Vision for Botswana: Towards Prosperity for All*, otherwise known as Vision 2016, sets specific goals for reducing poverty: "By the year 2016, Botswana will have eradicated absolute poverty, so that no part of the country will have people living with incomes below the appropriate poverty datum line (PDL). Within the next ten years, the percentage of people in poverty will have been reduced to at most 23 %, which is half the level in 1994." Vision 2016 also sets ambitious goals for per capita GDP growth and the eradication of poverty.

The Financial Assistance Policy (FAP) aims at providing financial assistance to investors to establish employment generating activities in both rural and urban areas. The FAP has a built-in mechanism to encourage women to participate in the business sector by giving them a larger grant. Furthermore, the grant given for locating in rural areas is larger than that given for investors locating in towns.

The planning process is intended to ensure that maximum benefits are derived from the limited financial resources available to Government by prioritizing policies, programmes and projects. The planning also allows the Government to set targets against which its performance can be objectively evaluated. Government policy is also focused on creating an environment conducive to private sector development and expansion.

The government policy recognizes that the eradication of poverty will come only through sustained economic diversification and employment creation. Successive National Development Plans have prioritized this approach for some years.

Programmes and Projects: Many activities are underway to try and tackle the problem of poverty. These range from macro economic policy initiatives to sustain growth, diversify the economy and create jobs, through to specific efforts to develop a National Poverty Reduction Strategy. To mitigate the worst effects of poverty, the government has developed a range of relief schemes and social safety nets, and is about to begin work on a new Poverty Reduction Strategy. At the same time, the government is exploring every available avenue to diversify the economy, upgrade the skills of the workforce and reduce unemployment. The goal of Vision 2016 is to reduce the proportion of the population living below the poverty datum line to 23 % by the year 2007, and to zero by the year 2016. While the spin-offs of these schemes will hopefully assist the poor, and some (such as the micro credit scheme) might benefit the better-off poor, it would be beneficial to look at credit schemes that are targeted more specifically to meet poor people's needs.

An analysis of the structure of poverty, including its underlying causes has been undertaken. From this study, programmes have been and continue to be designed which aim at poverty alleviation and reduction.

Botswana has an unusually comprehensive set of social protection programmes, made possible by its mineral wealth and enlightened government policies. These include: the Needy Children Programme; Orphans Support Programme; Destitute Persons Policy; Labour Intensive Public Works; Remote Area Dwellers (RADs); Drought Relief Programme; Home-Based Care Support; People with Disabilities Policy; Old Age Pension; and, World War II Veterans Allowance. These programmes are extremely important for poor households, especially for those headed by women and for the rural poor (see under **Status**).

There are a few NGO initiatives in this area (such as Women's Finance House), and government has collaborated with UNDP to support some community based women's enterprise schemes.

The Destitute Policy is the main assistance programme for the very poorest of the poor. It has recently been revised and recommendations to increase the destitute people's allowance are currently before parliament. In an effort to lift people out of destitution, participation in the scheme is now conditional on joining rehabilitation programmes provided by local authorities. There are still concerns about the targeting of the policy, however, as it is very much geared to a rural rather than urban setting. The Gaborone Urban Poverty Study found there were just over 60 registered as destitute in Gaborone, while the real number must undoubtedly be higher. Destitute population in

urban areas may not know how to access support from the government or may be deterred by the stigma attached to enrolling. This also applies in rural areas.

See also under **Status** and **Capacity-Building, Education, Training and Awareness-Raising**.

Status: One of the major challenges for human development in Botswana has been the eradication of poverty through increased incomes and employment creation.

The 1997 *Study of Poverty and Poverty Alleviation in Botswana* defines poverty as, “the inability to meet basic needs,” including absolute requirements such as nutrition, shelter and clothing, and relative requirements such as the ability to participate in basic recreation and to meet essential social commitments. At the level of the household, or the individual, poverty is experienced as a lack of choice arising from low income and/or low human capabilities. Income poverty refers to the inability to command the level of income or expenditure needed to attain a minimum material standard of living.

While the global per capita threshold for income poverty is US\$1 per day, Botswana has constructed its own Poverty Datum Line (PDL) with different thresholds for different family sizes. The Botswana PDL defines the cost of a minimal basket of food and other basic requirements for the household to sustain a minimum standard of human existence. Households with consumption above their PDL are defined as “non poor,” those with consumption below their PDL but who were able to cover the food component were defined as “poor,” and those who could not cover even their food component were defined as “very poor.” “Capability poverty” refers to the lack of sufficient basic human capabilities (such as education and good health), to be able to escape from poverty. This concept has now been absorbed into the Human Poverty Index used internationally by UNDP.

Although Botswana has experienced strong and sustained economic growth, only part of the population has benefited in terms of cash income. Based on 1996 figures from the Central Statistical Office, the poorest 40 % of the population received 12 % of total income, the middle 40 % had 29 % and the richest 20 % had 59 %. The distribution of productive assets is also skewed in favour of the better-off. This is an important factor in causing and perpetuating poverty.

By any measure, poverty levels in Botswana have fallen substantially since independence. Between 1985/86 and 1993/94, the proportion of the population living below the poverty datum line B the government’s official measure of poverty fell from 59 % to 47 %. Another way of measuring poverty is the proportion of the population living on less than US\$1 per day: in 1994 this figure stood at 23 %, which is relatively high for a middle income country. Rural areas are worst affected, with the most widespread and severe poverty found in the western districts of Ghanzi and Kgalagadi. Female-headed households, which constitute about half of all households in Botswana, are affected more severely by poverty than men. They have more dependents and have fewer productive assets, such as cattle.

Causes of Poverty

Poverty in Botswana is rooted primarily in the country’s adverse physical conditions and narrow economic base. Poor people face particular difficulties competing for work and earning an income in the country’s adverse climate, narrow economic base and high levels of unemployment. Their situation is exacerbated by a range of social problems that include rising levels of crime, abuse, neglect and destitution. The poor are more likely to suffer from ill health and poor nutrition, and to have difficulties accessing education and skills development. Women face discrimination under the law, unequal gender relations at home and fewer opportunities in the workplace than men. All of these difficulties are likely to be exacerbated by the current HIV/AIDS epidemic.

Although minerals accounted for 33.3 % of GDP in 1999/2000 and the bulk of this came from diamonds, mining is not labour intensive and provides only 3.5 % of formal employment. In addition, it has not created significant spin-offs in other areas of the economy, apart from in the public sector. Lack of cash income is the single most important cause of poverty in most parts of the world, and Botswana is no exception. Moreover, income distribution is skewed. Direct benefits from mining have tended to accrue only to those in formal employment and those with the specialist skills needed in the mining industry and other parts of the formal sector. Improvements in income are trickling through very slowly, if at all, to the rest of the people. Unlike most other countries with mineral based economies, the Government of Botswana has managed its diamond revenues well and spent considerable sums for the benefit of the population as a whole. However this has been through providing services and infrastructure rather than directly raising incomes. Economic policies to date have not prioritized growth that will specifically target the poor and raise their incomes.

Unemployment is a significant problem, affecting 15.8 % of the work force in 1999/2000. Young people are most likely to be unemployed. Unemployment was slightly higher in urban areas (22.6 %) than rural areas (20 %). The government regards high unemployment as “unacceptable and a major socio-economic problem for the country.” Young people are worst affected, with the 15-24 year age group accounting for 52 % of total unemployment in 1994. According to the last Botswana Labour Force Survey, in 1995/96, when unemployment was 21.5 %, unemployment was highest in the 20-24 age group with 38.9 % looking for work, followed by 35.4 % for the 15-19 year age group. Unlike many other developing countries, Botswana has a weak informal sector with low levels of self-employment. Some categories of employees, such as domestic workers and farm labourers, are not covered by minimum wage legislation.

Weakening traditional support systems is another cause of poverty in Botswana. There was considerable inequality in Botswana communities in the past, but those who had more wealth often helped those less well off through various well established community systems such as the loan of animals, pooling of resources, sharecropping and communal production. Three decades of strong economic growth have brought about major changes in Botswana society. The traditional extended family system has weakened due to rapid rural-urban migration, especially of young adults. While many urban dwellers send money back to their relatives in the rural areas, they are not physically there any more to assist less able-bodied family members and neighbours. As a result, poor people in rural areas have lost much of their labour and community support base. In the towns, some rural migrants have not found the employment and wealth they had hoped for. Without their extended family and a community to support them, they have struggled to cope with their responsibilities. Alcohol abuse, the rise of single-headed households, the failure of many men to support their partners and illegitimate children, the abuse of women and children, prostitution, destitution, early and unplanned parenthood and the rise in crime are all examples of a society under strain. In rural and urban areas poor people feel marginalized and disempowered.

The lack of access to public services and infrastructure also causes poverty in Botswana. Good education and health services mean that, even when people are poor, they have the capacity to get out of poverty through finding a job and having the good health to meet their responsibilities. Sadly, the opposite often seems to be the case – poor people often have little education, poor nutrition and poor health, and are therefore unable to take up opportunities to improve their situation. As a result the family’s capabilities are reduced, poverty deepens and it becomes harder to escape. For some sections of the population, poverty is an inherited condition and there are few opportunities to break out. A study of domestic workers carried out by Ditshwanelo – The Botswana Centre for Human Rights - in 1996 found examples of this in Serowe and Kanye. Here researchers found unwaged domestics who had been “given” to a household by their parents – they in turn were family workers (*Malata ba lelwapa*) from the cattle posts.

Although Botswana has relatively good public services and infrastructure, the poor experience particular problems in accessing them. Those living in the more remote and western districts of the country have higher child mortality rates, a greater prevalence of preventable diseases and higher levels of child malnutrition. These problems are closely linked to a lack of education and information, and impoverished living circumstances. As a result, the poor are often unable to protect their health and make full use of available services. High levels of adult illiteracy are found in the more remote areas, for instance Ghanzi and Kgalagadi (43 %) and Chobe (40 %).

Similar problems exist in education. The sheer size of the country means that small populations in remote areas often live far from clinics and schools. National enrolment figures are lowest in the more remote western and south west areas of Botswana. Here children either have to walk long distances to school, pay for transport or live in boarding schools. This is a particular problem for groups such as the Basarwa, who want their children to be educated within their own cultural setting.

The education system generally does not always recognize the particular difficulties facing poor families, and as a result their children are more likely to underachieve and drop out of school. While government schooling is provided free of charge, some children do not attend because of hidden costs such as transport and special contributions asked for by the school. Others are simply needed to help support the household in its daily task of survival. For those who do go, poor nutrition and health, together with a difficult home environment make it hard for them to perform well.

Since the 1997 poverty study was carried out, urbanization has continued to take place at a rapid rate. As a result, growing urban populations have put heavy pressure on existing services in towns. People interviewed as part of the Gaborone City Council survey complained of health clinics with drug shortages, poor levels of staffing and inconvenient opening hours. They also highlighted poor maintenance of public facilities such as standpipes and

sanitation in low-income neighborhoods. This is a matter of growing concern especially given the number of HIV/AIDS patients living in the community.

Health problems such as TB, respiratory infections and (in some parts of the country), malaria have long contributed to poverty. An analysis of the prevalence of different diseases on the basis of outpatients' diagnosis was prepared for the 1997 Poverty Report. It showed that western and more remote parts of the country, where poverty levels are high, had a substantially greater proportion of patients with preventable diseases. These included diarrhea, coughs and colds, respiratory infections and skin diseases. A similar high prevalence of avoidable illnesses was found in urban areas, notably TB, and coughs and colds. These infectious conditions spread faster in overcrowded housing conditions which are common in low cost areas.

In recent years households have also had to cope with the growing burden of HIV/AIDS. This has put intolerable strain on families who are already struggling to cope. The extra costs of medical expenses to treat opportunistic infections, and funerals for those who have died, are more than many poor households can manage. On top of these outgoings, less income is coming into the family due to sickness and the death of breadwinners. Family members caring for the sick at home lose time at work or looking for work. Because of HIV/AIDS, poor families are eating into whatever savings they have and are unable to put anything by for the future.

Recent research predicts that the number of households below the current poverty datum line will increase by between six and eight % by 2021 as a result of the HIV/AIDS epidemic. It is predicted that there will also be an increase in the number of destitute households by between 4,000 and 7,000 over the next ten years. Every income earner can expect on average one extra dependant as a result of the HIV/AIDS epidemic over the same time period. The impact will be worse for the poorest 25 % of households, where the number of dependants for each income earner is expected to rise from 16 to 20. These households can expect twice as large an income loss as the average for the whole population.

Women in Botswana are more widely and more severely affected by poverty than men. This is partly because women have less earning potential as they have fewer training and employment opportunities. About half of all households are headed by a single women, but with less money coming in they carry more of the parenting and household responsibilities than men. (See Chapter 24 of this Profile on more information on women's status in Botswana.)

Public Responses to Poverty

It is generally accepted that social protection programmes are needed for those who are vulnerable in the community. However, there is concern about how to discourage a dependency mentality and instead enable people to be lifted out of poverty to become productive. Better targeting of the poor and disincentives to mitigate dependency are seen by government as ways of tackling the problem.

Most concerned about the problems of poverty, the Government has made economic diversification a top priority for some years, based on the idea that for any national poverty alleviation strategy to be successful it must operate within a macro-economic framework that ensures stability and sustained economic growth. The aims of this policy are two-fold – to boost employment and to reduce the country's risk of depending too heavily on a single commodity. A certain level of diversification has taken place already (growth in the non-mining sector was 5.7 % in 1999/2000), but non-mining sectors are starting from a very low base, and the extent of diversification is not yet adequate. The Government of Botswana has successfully navigated this course, keeping a high level of growth while maintaining low levels of inflation.

Employment constitutes a major source of income and employment creation has been central to all the previous National Development Plans and will continue to engage Governments attention in the future, hence the challenge facing the country now and in future is how to design a strategy that will combine a reduction in the growth of the population with an increase in the growth rate of the economy.

Government is the main employer in Botswana. Including local government and parastatals, governmental body employs 47 % of the population. Despite its economic importance, the mining sector accounts for only 3.5 % of the labour force, while agricultural employment has declined from 17 % at independence to two %. Informal and self employment accounts for 35 % of employment.

The Government is committed itself to high levels of expenditure on meeting the basic needs of the population. Primary and secondary school education, for example, is provided free of charge. Government health facilities provide primary health care and first-level hospital treatment free or for only a token payment. Providing communities with safe drinking water is another high priority for government. In a large, sparsely populated

country with low and erratic rainfall, the fact that 97 % of the population has access to safe drinking water within a maximum distance of 2.5 kilometres from their homes is a remarkable achievement.

These investments in education, health and social services are also reflected in improvements in health indicators. The under-five mortality rate, for example, fell from 151 to 63 per 1,000 live births between 1971 and 1993. Life expectancy at birth rose from less than 50 in the late 1960s to 65 in 1992. Malnutrition in under-fives declined from 25 % in 1978 to 13 % in 2000.

Measured against other countries that have comparable per capita income, Botswana has been more successful in addressing capability poverty than income poverty. Sustained public investment has greatly improved the quality of and public access to services such as education, health care and safe drinking water. However, while the proportion of the population living below the poverty line has declined in recent years, the national rate of income poverty is relatively high for a country with Botswana's per capita income.

According to data from the last Household and Income Expenditure Survey (1993/94), very poor female-headed households derived 43% of their total income from government programmes and just 18% from their own production.

Labour-based public works programmes have recently been extended to cover urban areas, but very little has been done in this area. Such schemes could offer opportunities for the community to plan and design programmes at local level, thus increasing community participation and targeting of the poor. NGOs could play a vital role in this area. In the same way, existing labour-based public works programmes in rural areas could be expanded to run all year round. They are currently linked to drought relief.

Challenges and Opportunities

As we have seen in the preceding pages, poor people in Botswana face a range of problems for a variety of reasons. While many different needs must be addressed, the greatest difficulty facing the poor on a daily basis is lack of income. Government efforts to tackle this issue include sustaining stable economic growth, together with a strong emphasis on diversification to create more jobs and reduce unemployment. At the same time government is prioritizing efforts to boost skills development and training to create a workforce that is willing and able to take up new employment opportunities.

These key policies are tremendously important and must be maintained, but their effectiveness in terms of poverty alleviation will depend very much on the way that vulnerable groups get to benefit from them. Government will need to develop strategies and policies for growth that foster increased employment and income generating opportunities specifically for the poor.

Moving from the macro-economy to the programme level, there is a fairly broad consensus that poverty programmes would be greatly improved by the wider participation of communities at the design and implementation stages. Current initiatives tend to be characterized by a top-down approach that works through structures which often exclude those most in need – particularly women and vulnerable groups. As a result programmes are 'government-owned' and communities are not motivated to get involved. This ultimately militates against their success.

Involving the poor in determining their own future is a challenge, but it also offers a great opportunity to help eradicate poverty and make one of Vision 2016's most important goals a reality. Unfortunately, the challenge of poverty eradication has been made even more daunting by the HIV epidemic. As we shall see in the next chapter, HIV/AIDS is a major human development problem, which threatens to undermine the best efforts of government and civil society to reduce and eventually eradicate poverty.

Capacity-Building, Education, Training and Awareness-Raising: The government is giving higher priority to the development of vocational and technical training, and the Botswana Training Authority has recently been established to provide a framework for mobilizing skills development training in partnership with industry. The Department of Vocational Education and Training has developed a new technical and vocational education and training programme. The first institution to offer the new programme opened in Gaborone in 2000, offering a range of courses integrated with a life skills component. A wider programme is being developed under joint sponsorship of the European Union and the Government of Botswana, and will include the expansion of existing technical training institutions.

Primary and secondary school education is provided free of charge.

Information: Botswana's success in terms of human development, or health, education and per capita income is reflected in its Human Development Index (HDI), which is compiled by the United Nations Development Programme on the basis of life expectancy, per capita income and education. Between 1975 and 1990, Botswana's HDI rose from 0.492 to 0.651, placing it among the top few countries in Africa. By 1998, however, Botswana's HDI had fallen to 0.592. This decline was a direct result of the HIV epidemic, which has drastically reduced life expectancy. These figures suggest that, using changes in Botswana's HDI as an indicator, the HIV epidemic has caused the country to lose 15 years of human development.

In February 1997 the Ministry of Finance and Development Planning (MFDP) published a Study of Poverty and Poverty Alleviation in Botswana, with support from UNDP and UNICEF. The report was commissioned to assist government in its efforts to address the problems of poverty in the country. The study was based on data from the 1991 population census and the Household and Income Expenditure Surveys (HIES) of 1984/85 and 1993/94.

The findings of the report give a thorough and detailed picture of poverty at a household level and provide the best information currently available. Over the next two years new demographic data will be collected providing useful material for updating poverty trends. The next population census is due to start in August 2001 and a new HIES is planned for 2002. In addition, information from the current review of rural development policy will soon be published. The government will also collect new poverty data as part of the forthcoming formulation of a national poverty reduction strategy. Policy makers will be particularly concerned to see how the rapidly escalating HIV/AIDS epidemic affects the poverty levels in the country.

The key findings of the 1997 Study of Poverty and Poverty Alleviation in Botswana are as follows:

- Between 1985/86 and 1993/94 the proportion of the population living below the poverty datum line declined from 59 % of the population to 47 % (623,100 people). The immediate explanation for this was the sharp fall in the proportion of very poor people in rural areas and urban villages.
- Poverty was found to be higher and most severe in rural areas and, to a lesser extent, in urban villages. 55 % of the rural population was below the poverty datum line (PDL), as compared with 46 % in urban villages and 29 % in urban areas. In rural areas 40 % of the population was very poor and 22 % was poor, while in urban areas only 9 % of the population was very poor and 19 % was poor (see Table A). This pattern of poverty is likely to be closely linked to the concentration of formal sector employment in urban areas, and to a lesser extent in urban villages, and to the lack of comparable income earning opportunities in rural agriculture.
- There are more female-headed households living in poverty than male-headed households. In 1993-94 some 50 % of people living in female-headed households were below the poverty line, compared with 44 % of male-headed households. Moreover, the severity of poverty experienced by female-headed households was found to be greater than for male-headed households. About 50 % of all households are female-headed. The main reason for this is that on average female-headed households have more dependants and fewer income earners than male-headed households.
- The central and northeast districts were found to have the largest number of poor people. These districts contain one third of Botswana's population and have relatively high poverty rates. The southwestern districts of Ghanzi and Kgalagadi experienced the most severe poverty, with an estimated 71 % of the population living below the poverty line and 59 % in the very poor category (see Table A). These districts, together with western Kweneng and Southern, have the weakest economic base in the country and are home to most of Botswana's remote area dwellers (RADs). In addition, access to basic public services and infrastructure in remote, sparsely populated areas is lower and very expensive for government to provide.

Table A: National poverty headcount rates by poverty group and geography based on the 1993/94 Household and Income Expenditure Survey (HIES).

Poverty group, individuals	Gaborone	Other towns	Area A: rural SE	Area B: rural NE	Area C: Rural NW	Area D: rural SW	Total
1993/94							
Total population	122,857	205,403	301,584	453,975	68,232	178,202	1,330,253
All households							
Non poor HH	82 %*	63 %*	54 %*	47 %*	76 %*	29 %*	53 %
Poor HH	14 %*	23 %*	17 %*	18 %*	10 %*	12 %*	17 %
Very poor HH	4 %*	14 %*	29 %*	38 %*	14 %*	59 %*	30 %
Total HH	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Poor+Very poor HH	18 %*	37 %*	46 %*	56 %*	24 %*	71 %*	47 %

a/*: designates point estimates with CV>10 %

Source: MFDP, Data from 'Study of Poverty' 1997.

- Poor households, especially those that are female-headed, were found generally to have a large number of dependants to support, and to have few able-bodied adults. Dependency ratios for the rural poor and very poor were typically three times those of the urban non-poor. This relates to issues of inequality between the genders and again, the weakness of agriculture and lack of cash-earning opportunities in rural areas.
- Heads of poor and very poor households were found to be significantly older than in non-poor households, being mostly near to retirement age. Young people and those who can command formal sector jobs tend to migrate to urban areas, leaving rural households consisting largely of elderly people and young children.
- Poor and very poor households owned few household assets and possessions, and this problem was particularly acute in female-headed households. Cash earnings from employment and self-employment provided the major source of income for all poor people. Among poor households the proportion in employment was found to be only half that of non-poor households. This was particularly acute in female-headed households.
- The 1997 Poverty Report found tentative evidence to suggest that men obtain an unfair share of household income and contribute less than women to the work of running the household. This may imply that within household women and children are at greater risk of experiencing poverty than men. Unequal power relations between the genders, together with stereotyped cultural norms, all work to disadvantage women.

Research and Technologies: No information available.

Financing: The government's commitment to human development is clearly demonstrated by high levels of public expenditure on social services. Since the mid-1970s, 30-40 % of the annual budget has been allocated to the social sector, including education, health and welfare programmes, housing, urban and regional development, and other community and social services. Education and health together account for 50-60 % of social spending.

Cooperation: There can be no doubt that the Government of Botswana is committed to a strategy of poverty alleviation. On an international level it has endorsed a series of United Nations global declarations for improvement of human conditions. Most notably, Botswana is signatory to the Copenhagen Declaration and Programme of Action for Social Development (1995) whose central goal has been the elimination of poverty through the enhancement of productive employment and fostering social integration. In addition, Botswana is signatory to the International Convention on the Rights of the Child (1990), the International Convention on the Elimination of all Forms of Discrimination Against Women (1979), the SADC Gender and Development Declaration, the International Conference on Population and Development (1994) and the World Food Summit (Rome, 1996).

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: No information available.

Programmes and Projects: See Chapter 4-Energy of this Profile.

Status: Economic development is for the benefit of the people of Botswana, who, in turn, are its main agents. On the other hand, the environment will be protected by people who have a stake in its protection. Production is based on natural and human resources. Each sector of the economy utilizes land, water, energy, and human resources in the production process. Infrastructure and Government systems facilitate the delivery of services and final products to the population for consumption. This process of production and consumption has to be directed properly so as to maximize welfare and minimize costs, including environmental costs, and to avoid degradation of the environment.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: See Chapters 4-Energy of this Profile.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

Decision-Making: In recognition of global warming and other environmental climatic concerns, an energy master plan that emphasizes and draws on non-carbon based power supplies has been developed.

Programmes and Projects: The Rural Electrification Programme is on course, although so far the national electricity grid has only reached the main villages. This Programme emphasizes, where practicable, the use of solar energy for lighting and other power supplies.

In the 1980s, Botswana launched an Expanded Coal Utilization Programme (ECUP) in order to provide the country with a more sustainable alternative to fuel wood. Unfortunately, Botswana still uses fuel wood extensively, particularly for cooking and heating. This dependence on wood causes deforestation, especially around settlements. Continuation and expansion of the ECUP programme is highly recommended.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The roles played by the Botswana Technology Centre and Rural Industries Innovation Centre in developing energy saving and renewable energy technologies are significant to human settlement development. Some of these technologies include: the use of solar power; wind power; and biogas. These institutions are also involved in disseminating information on the use of energy saving techniques and energy saving appliances.

See also under **Programmes and Projects**.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: The government is currently considering proposals for increased private sector participation in air transport operations, which is expected to benefit other sectors of the economy, especially tourism, trade, commerce and investment.

Programmes and Projects: No information available.

Status: Botswana has one of the best telecommunications networks in Africa - although with an urban bias - and has one of the fastest cell phone uptakes in the world. Since the recent liberalization of the telecommunications market, more than 200,000 people have become cell phone subscribers. For those with the technology and the knowledge, the internet offers many opportunities, but this service is currently hugely under-utilized for education, public information and business purposes. There are around 500 Botswana web sites at present, and this figure is rising, but many do not make full use of recent technological innovations. E-business hardly exists and there are almost no services that allow for interaction between the web site provider and the user. There is very little citizen awareness of the potential of the internet and therefore a lack of demand for internet services and an enabling environment for development of this sector. Internet potential is also limited by the current lack of bandwidth in and out of the country.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: See under **Status** .

Financing: No information available.

Cooperation: No information available.

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CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: The Government has recognized the fundamental inter-relationship between population and development, especially the close and continuous interaction between population growth, on the one hand, and the growth of the economy, poverty alleviation, human resources development, gender equality and empowerment, environmental conservation and sustainable development, on the other. As a consequence, institutional arrangements are established to address these issues effectively. A Parliamentary Sub-Committee on Population and Development, and a National Council on Population and Development together with its Secretariat are in place. The Government considers population issues and their economic and social ramifications as priority areas for planning and policy making. During the National Development Plan 8, financial allocations have been made towards population and development programmes. The implementation of these programmes is, however, an ongoing activity carried out through several sectors, such as education, health, housing, agriculture, and so forth. The linkage between population and development is crucial in the formulation of development policies, programmes and projects, especially as people are both agents as well as beneficiaries of development. A population policy together with an implementation plan of action has been developed. The population policy was presented to Parliament in July 1997 for consideration and adoption. It will provide a clearly defined framework for the integration of population factors into development planning at all levels; and strengthen the direction, cohesion, and coordination of the many intervention efforts undertaken by government, non-governmental organizations, and the private sector in the area of population and development. The national population policy recognizes the fundamental human rights and freedoms of the individual, as enshrined in the Botswana Constitution. In addition, the Government is currently in the process of developing a national population information, education, and communication strategy to enhance implementation of the policy.

Programmes and Projects: See Chapter 6 of this Profile.

Status: In Botswana, the following objectives are important: developing and disseminating knowledge concerning the links between demographic trends and factors and sustainable development; formulating integrated national policies for environment and development, taking into account demographic trends and factors; and implementing integrated, environment and development programmes at the local level, taking into account demographic trends and factors; incorporating demographic trends and factors into the global analysis of environment and development issues; developing a better understanding of the relationships among demographic dynamics, technology, cultural behavior, natural resources and life support systems; and assessing human vulnerability in ecologically sensitive areas and centres of population to determine the priorities for action at all levels taking full account of community defined needs.

Botswana has a small but rapidly growing population which has more than doubled in size in twenty five years. Between 1971 and 1996, the population increased from 584,644 to 1,495,993. The age structure of the population is youthful, with children under the age of 15 constituting 40.4% of the total population in 1996. Consequently, the proportion of the population in the age group 15-64 increased from 46.9% in 1971 to 56.6% in 1996, while the proportion of the elderly (65 + years) decreased from 5.6% in 1971 to 3.1% in 1996. The proportion of females in the total population has consistently been higher than that of males, although it declined from 54.3% in 1971 to 52.2% in 1991, and to 51.9% in 1996. In both urban and rural areas females predominate, accounting for about 50% in the same years.

Botswana experienced high fertility rates during the 1970s and 1980s. However, there is evidence of a decline thereafter, from 6.5 in 1971 to an estimated 4.23 in 1991. A family health survey which was started in 1996 and scheduled for completion in 1997 will hopefully provide the basis for more information on fertility trends. In the education sector, 90% of the school age population (7-13 years) was in school in 1993. There is almost 100% access from primary to junior secondary education. Between 1981 and 1993, the total literacy rate increased from 34% to 68.9%. Over the same period, the literacy rate for males increased from 32% to 66.9%, while that of females rose from 36% to 70.3%. Given the present rate of population growth, the school age population will grow rapidly and so will the level of resources that will be required to provide additional school places and facilities.

In terms of indicators, Botswana has achieved remarkable reductions in mortality levels during the 1970s to the 1990s. The crude death rate fell from 13.7 per thousand in 1971 to 11.5 in 1991, and was projected to fall below 10 in 1996; while the infant mortality rate dropped from 97.1 to a projected 41 per thousand live births in 1996. Consequently, life expectancy at birth rose from 55.5 in 1971 to 66 years in 1996. Life expectancy at birth in rural areas rose from 54.9 years to 62.3 years, whilst that of urban areas rose from 54.9 years to 62.3 between 1981 and 1991. The rural areas experienced high gains in life expectancy at birth compared to the urban areas. This was due to increasing social equity and access to health services. On average, women outlived men by about 7 years in 1981 and 3.8 years in 1991. However, maternal mortality remained at a high level, ranging from 200-300 per 100,000 in 1991.

Demographic dynamics of mortality, fertility, and migration have an interrelationship with sustainable development. Population and development issues are evident from the high population growth rate resulting from high fertility. Other concerns are the marked increase in teenage and unplanned pregnancies, high maternal mortality, uneven population distribution, and deterioration in the environment. The growth of our population and production combined with unsustainable consumption patterns places severe pressure on the life-supporting capacities of the country.

Access to health services has been enhanced: populations served within 15 km of a health facility increased from 80% in 1985 to 85% in 1991. However, per capita health expenditure has increased significantly during the period partly due to the sparse population distribution. The goal to provide adequate health care for all is likely to be made more difficult by the prevailing high fertility and attendant young structure of the population coupled with the recent surge in the HIV/AIDS epidemic.

The main challenge for the future is to ensure a balance between economic growth, environmental conservation, and the rate of population growth; and to enhance the quality of life for the people through the various social and economic programmes. The young age structure of the population will continue to persist for several years; due mainly to past high fertility levels and the rapidly improving chances of survival, particularly for infants and children. The future outlook for development shows that the high population growth phenomenon and associated high dependency burden will put considerable pressure on households, communities, and the Government. It will also put considerable pressure on the nation's fragile ecosystem, threaten the Government's ability to continue to improve the delivery of services, and compromise its ability to create and sustain employment. Reduction of population growth will enable the Government to promote growth, to diversify the economy, and to enhance the nations' physical and human capital with a view to alleviating poverty. Despite all these challenges, the HIV/AIDS epidemic remains the main concern for future productivity, employment, and improvement of living standards.

See also Chapter 6 of this Profile.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: See Chapter 6 of this Profile.

Cooperation: No information available.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: The Government's strategy places emphasis on health infrastructure as well as district health service provision.

Programmes and Projects: Government health facilities provide primary health care and first-level hospital treatment free or for only a token payment.

Strategies to eliminate measles and neonatal diseases have been planned and are to run concurrently with polio eradication activities.

See also under **Status**.

Status: The Government provides portable drinking water coverage throughout the country to rural and major villages, and water hygiene programmes and sanitation disposal (including excreta) are in place but need strengthening. The safe water coverage is over 70%.

For almost three decades after Independence in 1966, the health status of the population in Botswana improved rapidly, reflecting rising living standards and a huge expansion of health services. The Government of Botswana has invested heavily in health infrastructure and the training of health personnel. Health expenditure in the past two decades has averaged 5-8 % of the national budget. Given the need to serve a population scattered over a wide geographical area, much of the investment in physical health infrastructure has gone into developing an extensive primary health care outreach system. In 1968 there were only 141 health facilities of all kinds. By 1998 there were a total of 1,324 health facilities, including 32 hospitals, 222 clinics, 330 health posts and 740 'mobile stops.' The numbers of health workers has also increased sharply. In 1968 there was only one doctor per 26,315 populations; by 1996 this had improved to one doctor per 3,850 populations.

Access to health care in Botswana is generally good. By 1995, 88 % of the population lived within 15 km of a health facility. Reproductive health services are widely available and free of charge, and the contraceptive prevalence rate stands at 48 %. Some 99 % of births are attended by a trained health worker. Maternal mortality, however, which stands at 330 per 100,000 live births, is still relatively high for a middle income country.

There are other marked regional disparities in health indicators which show communities in remote areas to be most adversely affected. In Kweneng District in the Southern Kalahari, for example, 39.4 % of children under-two were fully immunized in 2000, compared with the national average of 73.4 %. These disparities reflect, in part, the long distances which people have to travel in remote areas to reach health facilities. Also important, however, is the fact that household poverty levels in these areas of the country are higher than the national average.

Botswana's gains in public health were cut short in the mid-1990s, when the effects of the HIV epidemic began to be felt. Within the space of a few years, people with HIV-related conditions accounted for at least half the patients in hospital wards. Life expectancy, according to UNDP figures, declined from 65.2 years in 1993 to 46.2 years in 2000. Government expenditure on health has risen sharply, reflecting the growing demands on the health system of the HIV epidemic. In the 2000/2001 fiscal year, the government budget for health increased by 32 % - by far the largest increase of any sector. The HIV epidemic affects a higher proportion of the population than in any other country of the world. By the year 2000 an estimated 277,000 people in Botswana were living with HIV, and about 10,000 children under 15 years of age were estimated to be HIV-positive. Already the epidemic is impacting adversely on families, hospitals, schools and workplaces. The number of children orphaned by AIDS is estimated at 66,000, and by the year 2010 one in every five children in Botswana is likely to be an orphan.

Capacity-Building, Education, Training and Awareness-Raising: Health education activities including community sensitization, mobilization, participation, involvement and motivation to address health problems are being carried out.

The implementation of the code of practice has already commenced through addresses to hospital staff, and by mounting a series of workshops to introduce and sensitize staff on concepts of effective medical waste management and its importance. This enhances the safety of those within the hospitals and the public at large. A training programme will be developed to ensure that all staff has been adequately instructed. Emphasis will be placed on the importance of segregating the clinical wastes from the domestic waste, and the use of appropriately labeled and color coded containers and plastic bags to ensure compliance.

Information: See under **Status** .

Research and Technologies: No information available.

Financing: The government provides heavy subsidies for health care. There is a standard P2 (US\$ 40 cents) charge for outpatient treatment and first line hospital care, but many sections of the population are exempt from payment: pregnant women, TB patients, HIV/AIDS patients and children under-12, for example, are all entitled to free treatment.

Cooperation: No information available.

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: The Ministry of Local Government, Lands and Housing with the Departments of Surveys and Mapping, Lands and Town and Regional Planning are responsible for sustainable land use planning and management. The District and Town Councils have the portfolio responsibility for providing municipal infrastructure in their respective areas. The Government has established a Housing Department in order to give housing the attention it deserves, especially since shelter constitutes one of the basic human needs. This Department is responsible for promoting housing development and improvement through policy initiatives that create an enabling environment for shelter provision. Apart from the government, various other institutions are involved in the provision of shelter. These include the Botswana Housing Corporation which provides houses for rental; and sale in towns and some urban villages.

In Botswana, the main legislation guiding physical planning, orderly and progressive development, and control of land in both urban and rural areas is the Town and Country Planning Act (1977). The Urban Development Standards (1992) and the Development Control Code (1995) also facilitate the orderly planning of settlements. It is the policy of the Government that all citizens should have easy and equal access to land. In order to realize this, three land tenure systems have been put in place. These are: tribal lands; state lands; and freehold lands.

The administration and allocation of tribal land is the responsibility of land boards established under the Tribal Land Act. State land is administered through the State Land Act, which provides the core principles of the national settlement strategy. The strategy recognizes the general principle is that countries set priorities in accordance with their national plans and objectives; taking into account their social and cultural capabilities and their impact on marginalized and disenfranchised groups, with particular reference to the needs of women.

The National Settlement Policy (NSP) was introduced during the National Development Plan 5 (NDP5) (1979-1985) to counteract the then prevailing bias of investment towards towns, especially Gaborone. The main concern was the inordinate growth of Gaborone threatened the balance of development in the country to the detriment of other major centres which also needed to be stimulated to enhance their development potential. The overall goal of the NSP is to provide a framework for guiding the distribution of investment in a way that reflects settlement size, population, economic potential, level of infrastructure, and the role of settlements as service centres, encourages the development of settlements in terms of: Provision of adequate and up to standard infrastructure and services; Generation of employment; and Improvement of housing conditions.

Formal land use planning in Botswana started with the implementation of the Tribal Grazing Land Policy, in 1975, when some areas were zoned for wildlife use, others became reserved areas, yet other areas continued to be for communal use. Land use planning is done on the basis of assessed needs for various land use types, socioeconomic impacts, resource endowment and use, as well as environmental impact. This is a necessary step towards sustainable land and natural resource management. Various legislation and policies come into play during the preparation of the integrated land use plan. Some of which are: the Tourism Policy (1990); Wildlife Conservation and National Parks Act (1992); National Policy on Agricultural Development (1991); and Many others which have a bearing on land. The districts up to now continue to prepare and update their respective integrated land use plans, this happens from time to time as policies and legislation are reviewed. In the preparation of such plans the communities have major inputs with regard to the various land uses. For land use plans to be feasible and sustainable, the communities should be the ones who decide the uses on a particular type of land. Some districts have started studies, such as the water point survey, which will facilitate the zoning of land and preparation of plans. The Tribal Land Act was amended in 1994 to allow the land boards to gazette the land use plans. This will ensure consistency in the use and management of the planned areas.

See also under **Status**.

Programmes and Projects: There are eight programme areas encompassed by this strategy which are consistent with Agenda 21. It is important to note that some implementation activities pre-date the Rio Conference, including: *Provision of Adequate Shelter for All:* The objective is to achieve shelter for rapidly growing populations and for the currently deprived urban and rural poor, through shelter development and improvement that is environmentally sound. The Government published the National Policy on Housing in 1981. The long term objective of this policy is “to ensure safe and sanitary housing for everyone.” To this end, the Government has instituted a number of programmes to facilitate the process of shelter delivery. The Self Help Housing Agency Programme (SHHA) was

introduced in 1973 to assist low income urban households to develop their own houses whereby the Government provides basic services such as earth engineered roads, communal water stand pipes, and a pit-latrine to each plot. In 1992, the service standards of SHHA areas were improved to include individual plot water connection and water borne sewage system, and provision of electricity to the plot boundary. The SHHA Programme has also been used to upgrade the squatter settlements of Naledi in Gaborone and Peleng in Lobatse which existed prior to its inception. Shelter provision in rural areas has been on individual initiative, most important pre-requisite for housing development. Access to land has not really been a disturbing issue due to the fact that all male and female citizens who are of age are allocated free tribal land. In an effort to facilitate shelter provision in rural areas, the government intends to introduce a rural housing programme.

Improving Human Settlements Management: The objective is to ensure sustainable management of all urban settlements to enhance their ability to improve the living conditions of residents, especially the marginalized and disenfranchised, thereby contributing to the achievement of national economic development goals. A number of initiatives to support this objective have already been or are being implemented in one way or the other in Botswana. The Major Village Infrastructure Programme aims at providing basic infrastructure, such as improved roads, potable water, storm water drains, and electricity in large villages. The objective is to make these settlements attractive to investors and as such make them alternative centres for commercial and industrial location. Another initiative is the provision of industrial sites and factory shells. In an effort to create an enabling environment for employment generation, and support small scale business initiatives, local authorities in rural and urban centres have designated industrial sites and factory shells. Some are provided with water and electricity.

Promoting Sustainable Land-Use Planning and Management - The issue of access to land, especially in urban areas, is often a concern. This is further compounded by competing demands of land for industry, commerce, agriculture open spaces, and so forth. Other issues of concern include unsustainable practices, such as encroachment on environmentally sensitive areas. The objective is to provide for the land requirements of human settlement development through environmentally sound physical planning and land use.

Promoting the Integrated Provision of Environmental Infrastructure: Sustainable urban development hinges on the availability of clean water supply and provision of infrastructure for sanitation and waste management. The main policy in supporting infrastructure development, especially in the urban areas, is that of full cost-recovery. In towns, developers are required to pay rates and a service levy. Currently, efforts are being made to look into ways of applying the cost-recovery principle in the urban villages, especially as they also need a certain level of infrastructure making them attractive to investors. Several programmes and projects have been instituted to facilitate the provision of environmental infrastructure on a national basis. For example, the National Rural Sanitation Programme is geared towards the facilitation of safe and sanitary living conditions in rural areas. Waste Management Project mainly focuses on the prevention and control of water pollution through proper waste management, including the proper location for waste disposal sites. This Project is at a fairly advanced stage, and has led to the development of a draft Waste Management Act and guidelines for landfill sites.

Natural Disaster and Relief Programmes: Due to recurring droughts, the Government has instituted a Drought Relief Programme to assist the worst affected areas with basic relief supplies. The Government has also established a National Disaster Preparedness Committee. This committee is charged with the responsibility of rendering assistance to disaster victims in times of need. There are also similar committees established at local levels.

Status: NSP has established a three tier settlement hierarchy: Primary centres which have a population of over 20,000 and a high development potential (this includes the four largest towns and eight largest urban villages); Secondary centres with a population range of between 10,000 and 19,999; and Tertiary centres which constitute the remaining settlements with populations ranging from 500 to 9,999.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: See Chapter 10 of this Profile.

Research and Technologies: See Chapter 4-Energy of this Profile.

Financing: Financial institutions, such as Commercial Banks, the Botswana Building Society, among others, as well as the government are providing the necessary financial resources to members of the public to build houses.

Cooperation: No information available.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: The Botswana Government recognizes and reaffirms Agenda 21, which aims at addressing the pressing needs of today while preparing the world for the challenges of the next century. This recognition is premised on and reflects a global consensus and political commitments at the highest levels, on development and environmental cooperation. National strategies, plans, policies and processes are crucial in achieving this.

Each of Botswana's eight national development plans since independence has been based on the pursuit of four objectives: rapid economic growth, social justice, economic independence and sustained development. During the past two decades the government has incorporated other elements into its development goals, including gender equality, conservation of the environment and assistance for remote area dwellers. The centerpiece of Governments development efforts since the inception of the First National Development Plan (1968 - 1973) is to raise the standards of living of the people of Botswana. In line with this, the development plans have been guided by the planning objectives of sustainable development, rapid economic growth, economic independence, and social justice.

Botswana's National Development Plan 8 (NDP 8) commenced at the dawn of the third millennium, and focuses on sustainability, which stresses the role of natural resources in providing for present generations and for posterity. Sustainability is seen as a strategic concept that links population, the economy and natural resources together, in the context of socio-economic development for the long term. It raises questions such as: under what conditions can natural resources be used so that their long term yield potential is not decreased! And how can inter- and intra-generational equity be assured. Sustainability, therefore calls for appropriate use of natural resources and consideration of environmental costs and benefits in development planning.

In conformity with the principles of Agenda 21, Botswana's long-term planning for sustainable development does extend beyond the time horizon of the NDP 8, to consider issues of a long term nature which are crucial for a better quality of life for present generations and for posterity. The long term planning perspectives are based on the following four pillars: human resources development; sustainable use of natural resources; sustainable economic growth and diversification; and timely policies, management and decision making combined with democracy, a free market economy and political stability.

In 1997 a special Presidential Task Group published *Vision 2016: Towards Prosperity for All*, which sets out the Government of Botswana's long-term vision dedicated to the achievement of *kagisano* or social harmony.

A complementary role in development policy formulation and implementation analysis is played by the Botswana Institute for Development Policy Analysis (BIDPA) which was set up to complementing these national initiatives. BIDPA's mandate as set out in the trust deed is to: promote and conduct research on development policy in Botswana and the region; monitor the performance of the Botswana economy and public policy implementation; offer consultancy services to Botswana Government, foreign governments, NGOs and the private sector; offer technical and financial assistance to Botswana Government, foreign government, NGOs and the private sector; and, provide professional training and public education about the economy of Botswana. BIDPA initiatives are therefore in consonance with principles 16 & 17 of Agenda 21.

In line with principles 16 and 17 of Agenda 21, Botswana has a National Policy on Natural Resources Conservation and Development which calls for a comprehensive evaluation of all the economic, social and environmental implications of major policies, programmes and projects before they are implemented, to foster sustainable development. The internalization of environmental costs in economic decision making helps bring a system-wide perspective, a long term view which underscores prevention, and a package of ecological practices that reinforce sound socio-economic development.

Currently, the system of Environmental Impact Assessment (EIA) is being legislated for and is intended to provide for the concept of Strategic Environmental Assessment and Environmental Health Impact Assessment to focus on the overall aspects of the cross-sectoral/cutting planning issues and to provide for a more comprehensive and rigorous approach for the identification, prediction and appraisal of the environmental factors which affect human health, as an integral part of the assessment respectively.

The concept of the Strategic Environmental Assessment has been applied to the NDP 8 through an Environmental Audit which identified, described and assessed the potential beneficial and adverse environmental consequences of the plan. The Audit also identified possible measures to enhance the environmental benefits or to reduce or eliminate environmental disadvantages of the proposed actions and provided information to planners, decision

makers, affected communities and other interested parties regarding the full range of environmental consequences of the development planning and implementation options. The cross cutting issues that have emerged from the Environmental Audit do emphasize the need to dispel any notions that conservation is a limited, independent sector that is largely concerned with bio-diversity or soils; and that ecological factors are an impediment to development, which in some cases may be overlooked and in others may be considered simply on a cases by case basis, and not as matter of policy.

Instruments for the implementation of anticipatory environmental policies include: taxes, charges and financial incentives (to encourage choices compatible with the maintenance of a healthy environment); technology assessment; design and product regulation; anticipatory and pro-active socio-economic and environmental planning; and procedures for the rational use allocations.

A population policy provides a clearly defined framework for the integration of population factors in development planning at all levels and strengthen the direction, cohesion and coordination of the many intervention efforts undertaken by government, non-governmental organizations and the private sector in the area of population and development, is currently being formulated. This national population policy recognizes the fundamental human rights and freedoms enshrined in the Botswana Constitution and enshrined upon Botswana's four national guiding principles of democracy, development, self reliance and unity, which are in accord with the traditional Botswana culture of promoting social harmony. In the foregoing context, the Botswana Government adheres to these obligations to ensure equal access and opportunity to development and we do not encourage separate development for any individuals or communities.

Human Rights: Although Botswana is a multi-party democracy with a constitution and a bill of rights, there is considerable ignorance about human rights amongst the general population. Most people are not aware of their rights and do not have access to the civil courts because they cannot afford the legal fees. Botswana's sole human rights organization, Ditshwanelo – the Botswana Centre for Human Rights, which was set up in 1993 by a group of concerned voluntary agencies and academics to promote a human rights culture in the country, carries out para-legal work with marginalized groups, human rights education, and advocacy to uphold existing human rights, while also trying to reform discriminatory law.

Legal System: Botswana's legal system is plural, comprising Roman-Dutch common law and statutory law, together with customary law. Roman-Dutch law was imported from the Cape Colony into Botswana in 1891, primarily to apply to non-Batswana, but subsequently it was applied to all persons in Botswana. The Roman-Dutch and customary law systems co-exist, although there are differences in their substance and in their application. The highest court in Botswana is the Court of Appeal. The High Court has jurisdiction to hear and determine civil and criminal proceedings. Customary law is administered by the chief (*kgosi*), and cases are generally dealt with at the *kgotla*. The bulk of customary law is unwritten and practice can vary between different *kgotla*. The local police are officials of the *kgotla* and appeals are heard in the Customary Court of Appeal.

See also under **Status**.

Programmes and Projects: See under the heading **Programmes and Projects** in the various chapters of this Profile.

Status: Backed by a strong economy, political stability and democratic institutions, the people of Botswana are making real progress towards the goals of Vision 2016, a mere 50 years after achieving independence.

In the process of striving to achieve these objectives, the Government has taken cognizance of the fundamental inter-relationship between population and development, especially the close and continuous interaction between population growth, on the one hand and growth of the economy, poverty alleviation, human resources development, gender equality and empowerment, environmental conservation, and sustainable development on the other. Consideration of these linkages between population and development is crucial in the formulation of development policies, programmes and projects, especially as people are both agents as well as beneficiaries of development.

The foregoing measures are to play a key role in the implementation of NDP 8 period and beyond, during which conservation should be integrated with development through the use of instruments that help to implement anticipatory policies, through the establishment of effective coordination mechanisms that ensure that a cross sectoral conservation policy is applied, and by the adoption of national accounting systems to include measures of conservation performance.

Compared with most other developing countries, Botswana has many advantages which should ensure a bright and prosperous future for its entire people. It has a strong economy, democratic institutions and political stability. It has good relations with its neighbours and is not embroiled in external conflicts. It has a high level of official transparency and low levels of corruption. Crime, although rising, is still relatively low. With education the number one item of government expenditure, the country's human capital is increasing in value every year. Moreover, in Vision 2016, Botswana has another precious resource – a set of nationally agreed ideals and development goals, which can serve as a point of reference and inspiration for all sections of government and society.

High on the government's priority list is the eradication of absolute poverty so that, by the year 2016, "no part of the country will have people living with incomes below the appropriate poverty datum line." There is no doubt that Botswana has the means to eradicate absolute poverty in the foreseeable future. Its chances of doing so, however, have been reduced by the HIV epidemic, which is now unfolding across the country. Botswana has the highest HIV prevalence rate in the world. HIV/AIDS is not only a fatal disease but an economic catastrophe for the families and communities affected. Finally, the fragile ecosystems which support all forms of human, plant and animal life in Botswana are under threat from two directions: first, from unsustainable levels of natural resource utilization, and second, from the consequences of global climate change. These three issues – poverty, HIV/AIDS and the environment – are therefore the main themes of this Common Country Assessment report of the United Nations agencies and their partners in Botswana.

The challenges faced with Botswana require some global partnership that is founded on a bio-ethic which is energized by communication, education and training, all which reflect common values that include respect for nature and self responsibility. International cooperation should continue to support and supplement national efforts. In this context, the United Nations system has key role to play. Other international, regional and sub-regional organizations are also called upon to contribute to this effort. The broadest possible public participation and the active involvement of the non-governmental organization and other groups should also continue to be encouraged.

Capacity-Building, Education, Training and Awareness-Raising: See Chapter 36 and also under the heading **Capacity-Building, Education, Training and Awareness-Raising** in the various chapters of this Profile.

Information: No information available.

Research and Technologies: See Chapter 35 and also under the heading **Research and Technologies** in the various chapters of this Profile.

Financing: No information available.

Cooperation: The Botswana Government ratified the Convention on Climate change during the UNCED world summit, and has subsequently ratified the following: the Convention to Combat drought and Desertification; Biological diversity; Wetlands of International importance especially as Water Fowl Habitats; the Convention on the International Trade in Endangered Species (CITES); and the Southern African Centre for Ivory Marketing (SACCIM).

The implementation of the provisions of the these conventions is underway, albeit the limiting resources .An effective implementation of the provisions of the these conventions requires substantial flows of new and additional financial resources, in order to cover the incremental costs for the actions we have to take to deal with such environmental problems and to accelerate sustainable development.

Botswana is also a member of the Southern African Development Community (SADC) and the Southern African Customs Union (SACU), and continues to be an active member of these organizations.

CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: In recognition of global warming and other environmental climatic concerns, an energy master plan that emphasizes and draws on non carbon based power supplies has been developed.

The basis for action is the concern over climate change and climate variability, air pollution, and ozone depletion which have created new demands for scientific, economic, and social information to reduce the remaining uncertainties in these fields. Better understanding and prediction are needed of the various properties of the atmosphere and affected ecosystems, including health impacts and their interactions with socioeconomic factors. In Botswana, this would include better understanding of the role of the Kalahari as a sink to reduce greenhouse gas levels. Improved management of veld fires to curbs emissions from agricultural management is also required.

See also under **Cooperation**.

Programmes and Projects: The basic objective of the atmospheric protection programme area is to improve the understanding of processes that influence and are influenced by the earth's atmosphere on global, regional, and local scales, including physical, chemical, geological, biological, oceanic, hydrological, economic, and social processes. Mitigation and response measures addressing such changes and capacity building through enhanced international cooperation are key programme elements. In Botswana, these issues are addressed through the relevant technical institutions, both governmental and non-governmental.

A rural electrification programme has been developed, which emphasizes, where practicable, the use of solar energy for lighting and other power supplies (see Chapter 4-Energy of this Profile).

See also under **Status**.

Status: The Terms of Reference for a National Climate Committee have been finalized.

In the future, strategies will be developed to ensure that the available electrical power supply is used to the maximum. Emphasis will be placed on power efficiency in the areas of power generation, power transmission, and end use. Specific projects to address these areas will be developed and, where appropriate, funding will be sought.

Botswana, as Party to the Montreal Protocol, has undertaken to phase-out the use of ozone depleting substances (ODS). This step has been taken recognizing that substitutes are available. In 1994, it was determined that the per capita consumption of the controlled substances under the Montreal Protocol in Botswana was low, about 0.02kg. This classifies Botswana as a developing country operating under Article 5 paragraph 1 of the Protocol.

Parties to the Montreal Protocol whose per capita consumption of the controlled substances is less than 0.3kg are allowed a grace period to delay their compliance with the Protocol for ten years from the date of entry into force of the protocol for the party. In the case of Botswana, the use of ODS is allowed by the Protocol until the year 2002. Arrangements have been made to assist developing countries operating under Article 5 with funds and technical support from a Multilateral Fund. Botswana qualifies for this support to reduce or phase out the use of ODS in accordance with its obligations.

In order to meet Botswana's obligations under the Montreal Protocol and to ensure cost effective compliance, the country has to: provide information, annually, on the quantity of ozone depleting substances used in Botswana; develop a phase out of the use/consumption of ozone depleting substances; and promote awareness and exchange information on the availability of options and alternatives to controlled substances in certain products (domestic refrigerators, air conditioners, degreasers and solvents or cleaning agents, aerosol spray cans, fumigants, and fire extinguishers).

The main concerns related to the implementation of the Montreal Protocol in Botswana are: the technology dumping and procurement of environmentally sound technologies; future cost scenarios and projections; hazards and consequences of a depleted stratospheric ozone layer; capacity building to provide technical training to retrofit refrigerators with the new technologies and related handling requirements; ability to identify ODS, whether new or recycled; effective substitutes at reasonable costs; and the adoption of appropriate destruction technologies.

Capacity-Building, Education, Training and Awareness-Raising: In Botswana, as in many other countries, the issues of atmospheric pollution and monitoring were not well understood prior to the United Nations Conference on Environment and Development (UNCED). Therefore, training of personnel continues to be undertaken through Government and donor support to develop capacity to meet the challenges of a changing atmosphere.

The country is planning to hold a number of seminars and workshops and to publish relevant material in the local press and media on the Montreal Protocol and its implementation in Botswana. The Government plans to discuss the policy implications of the Protocol for Botswana; brief all respective Councils, other government and non-governmental organizations, educators and health personnel; train refrigeration technicians; and raise public awareness through art competitions, newspaper publications, radio and other media.

Information: A draft report of the inventory of Green-house Gas Emissions and Sinks was discussed and reviewed at the March 1997 seminar. The report consists of four technical chapters on energy, agriculture, waste, and forestry and land use sectors. Further reviews will be conducted to ensure Botswana's compliance, taking into consideration the new reporting formats.

Botswana continues to strengthen the networks of atmospheric and climate monitoring stations to ensure that data and information on the climate of Botswana are available for further synthesis and studies on the extent and impact of climate change in Botswana.

Research and Technologies: See under **Financing**.

Financing: Financial support has been sought to enable Botswana to carry out vulnerability and mitigation studies and to further refine the national inventory of greenhouse gases. Funded projects will give emphasis to the development of mitigation and adaptation strategies under various climate change scenarios. Botswana benefits from funding from the Global Environment Facility to assist in developing the initial National Communications to the Conference of the Parties (COP-2) to the UNFCCC.

Cooperation: Botswana has acceded to both the Vienna Convention for the Protection of the Ozone Layer and its associated Montreal Protocol on the Substances that Deplete the Ozone Layer. The Republic became party to both treaties from 2 March 1992. The United Nations Framework Convention on Climate Change (UNFCCC) was ratified on January 20, 1994.

With respect to the UNFCCC in Botswana, a number of activities have already been undertaken and others are being developed related to the initial national communication required by Articles 4 and 12 of the Convention. Botswana has benefited from training of national experts to complete inventories of greenhouse gases and the development of vulnerability and mitigation assessment programmes. Two national seminars to raise awareness on global warming and climate change were held in Gaborone in July 1995 and March 1997. A number of briefings aimed at informing authorities on the UNFCCC and how it will impact on the social and economic sectors in Botswana have been prepared and delivered.

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CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

Decision-Making: At a national level, a Land Development Committee supervised district planning and coordinated national land use planning. The Ministries of Agriculture and Local Government, Lands and Housing play significant roles in the implementation process. A lot has been accomplished in the area of personnel training in relevant fields, but it is still necessary to enhance the capacity of existing institutions to enable them to deal with the more complex planning and management of land resources. Prior to independence, Botswana had established traditional ways of allocating and managing tribal land and its resources through chiefs and communities. Some of the important elements of this system were that access to land was assured for all citizens, and that the use of land and its resources should ensure availability for future generations. Soon after independence, the authority to allocate tribal land was shifted from chiefs to Tribal Land Boards which were established by an Act of Parliament, but the management of the resources remains the responsibility of the users and their communities.

An integrated approach to planning and management of land resources started in earnest in 1975 with the implementation of the Tribal Grazing Land Policy (TGLP). To facilitate the policy's implementation, appropriate planning and management systems, such as Land Use Planning Groups (LUPAGs), later transformed into District Land Use Planning Units (DLUPUs), were established. The implementation of TGLP has run its full course, but the structures and the land use planning systems have been retained and continue to be useful in the planning and management of land resources.

Land use planning in the 1970s involved very broad zoning of tribal land for various uses, such as determining where cattle ranches could be established, areas which could be reserved as Wildlife Management Areas (WMAs) and, due to demographic constraints, areas which would remain under communal use. This policy enabled individuals or groups to have exclusive use of land in areas zoned for such use, particularly cattle ranches. The objective of this policy was sustainability through individual tenure of land resources (rangeland). Following the successful implementation of this policy, a number of other policies to promote integrated land use planning and natural resources management were promulgated. Some of the recent examples include: The National Policy on Agricultural Development (1991) (largely a follow-up of the TGLP); the Tourism Policy; and the National Settlement Policy, among others.

The practice in Botswana is that the public is made aware of the implications of land use plans before land is zoned for various uses. This is usually done through public meetings where all developments in a district are discussed. The meetings allow for the participation by all community members including women. Further, in the land use planning process, public awareness and participation is ensured by, among others, giving land users an opportunity to select preferred land use options from a range of options determined through the evaluation of physical and economic suitability of land resources.

The currently on-going Rural Development Policy Review raises environmental issues as they relate to livelihoods. It covers policies related to land and natural resources. It reviews the National Policy on Tribal Grazing Land of 1975, Urban Development and Land Policy of 1978, National Policy on Land Tenure of 1985, and National Policy on Natural Resources Conservation and Development of 1990. It also reviewed the Water Policies and the National Water Master Plan of 1991, Tribal Land Act of 1993, and the Botswana Settlement policy of 1998. The report also raises issues of property rights, in which many poor households asserts and improvements on land cannot be used for purposes of collateral. As a result of this, poor people living in rural areas remain poor because they cannot borrow money in banks because they prove that the land and the improvement on it are theirs. The report asserts that efforts to formalize rural land title so as to bring land into the market economy have achieved little success. If sustainable development is to be achieved more needs to ensure that property rights, particularly for land are fully defined.

See also under **Status, Information and Research and Technologies** and also Chapter 7 of this Profile.

Programmes and Projects: Major programmes include: The National Policy on Grazing Land, whose main aim is to deal with the problems of overgrazing — the programme is yet to achieve this objective and has recently been reformulated to emphasize land use planning and management on a sustainable basis; and the Arable Land Development Programme, which aims to improve production in the arable sector.

See also under **Cooperation**.

Status: The Review of the Rural Development Policy states that open access to resources, grazing land for instance, has led to overgrazing. This is the problem of tragedy of the commons. There is no or little apparent regulation of the use of the communal lands. Every family wants to use as much of the lands as possible, without much due regard to the carrying capacity of the land. The report asserts that the communal land system must be designed such that environmental externalities are internalized and proper property rights defined to allow the market system to allocate land efficiently than is currently the case.

Environmental degradation and resource depletion have negative impacts on the rural economy. This requires that a critical analysis of the environmental problems be undertaken. The impact on grazing lands and forests resources, which are caused by the expansion of the livestock and wildlife herds and exacerbated by the continual occurrence of droughts, are a critical rural development planning issue related to both the conservation of the nations resource base and rural poverty.

The Government attaches great importance to the wide range of natural resources and features that exist throughout Botswana, especially in protected areas, such as National Parks, Game Reserves, Forest Reserves, and designated Wildlife Management Areas. Many people depend directly on these lands for their livelihoods. Some, such as the Okavango Delta and the Central Kalahari Game Reserve, are valued internationally for their unique features.

There are three types of land tenure in Botswana. Tribal land covers 71% of the total land area of the country (586 000 km²). It is allocated to citizens free of charge for all types of uses. State land is owned by the state and comprises 23% of the total area of Botswana. Most of this land is used as National Parks, or Forest and Game Reserves within which no settlements are permitted. However, a small percentage of this land is allocated for residential purposes, particularly in urban centres. Freehold land comprises only 6% of the total area and is privately owned. Most government policies to date have been directed at tribal land.

The Botswana's environment is largely semi-arid and therefore offers a limited natural resource base. This base has undergone some development pressures and degradation processes have given rise to concerns about the ability of these resources to sustain the needs of future generations. The impacts of these development pressures are recognized through the depletion of resources; land erosion/degradation; urban and rural pollution; and rangeland degradation.

There are a number of constraints to rational resource utilization. The first is structural, including rapid population growth and poverty. The second relates to research, particularly the absence of data on resource stocks, how they are used and by whom. Third, inadequate enforcement of legal provisions on the use of natural resources has led to their unsustainable use.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: During the early stages of the TGLP, the government realized that land resources data and information for planning and management decisions were deficient. This prompted a number of initiatives particularly by the Ministry of Agriculture to map soils, conduct an inventory on forest and range resources, and to develop land evaluation methodologies.

Land inventory supports sustainable land use planning and management with the primary aim to improve record keeping and the retrieval of information for Land Boards. Various land inventory projects and studies have been carried out in Botswana, but none of these have so far been implemented on a national scale. These include the Maun Pilot Project, and the Ramotswa Pilot Scheme. Several implementation problems have been encountered mainly as a result of the lack of appropriate staff in the Land Boards, high costs, and inadequate consultations between and among relevant institutions, resulting in duplication of efforts. In order to standardize and consolidate these efforts, the Ministry of Local Government, Lands and Housing instructed the Departments of Surveys and Mapping, Lands and Town and Regional Planning to work in conjunction with Land Boards to design and propose an adequate and cost effective Land Inventory System.

Research and Technologies: See under **Information**.

Financing: The Government of Botswana has financed a majority of activities under the programme areas mentioned above. See also under **Cooperation**.

Cooperation: The United Nations Development Programme (UNDP) has assisted the Government with a Land Use Planning for Sustainable Development (LUPSAD) project. The Food and Agriculture Organization (FAO), as the executing agency for the LUPSAD project, has also assisted Botswana to develop computer based methodologies for determining land suitability. These tools are being applied in land use planning, both at the national and district levels.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: The existing forestry legislation and the monitoring of forest resource utilization and management are deficient. Critical issues of forest policy and legislation have been under comprehensive review to improve the economic as well as the environmental management of Botswana's forest resources.

One of the strategies proposed under the current National Development Plan, is to develop and implement a National Forest Action Plan. The action plan is expected to enhance the protection, conservation and sustainable use of natural woodlands, and will help to promote forest rehabilitation, regeneration, afforestation, and reforestation by communities.

The Government of Botswana is committed to improve the conservation and management of Botswana's forestry resources on a sustainable basis through sustainable forest management plans, among others.

Programmes and Projects: Under the Forestry Development Programme for the period 1997 to 2003, funds have been approved to undertake comprehensive forest inventories in the Nata State Lands and Ngamiland. This will lead to the formulation of sustainable multiple use management plans for the conservation and efficient utilization of forest resources in these areas. A Rangeland Inventory and Monitoring Programme has also been initiated with support from the British Overseas Development Administration to develop methodologies for data and information collection and processing, and to ensure accuracy and consistency.

The Nursery, Woodlot, and Afforestation Programme is to be expanded. This will include upgrading the existing twenty government forestry nurseries and establishing additional ones, securing community involvement, including schools, in raising backyard nurseries, establishing village woodlots, setting up research trials and demonstrations to promote forestry and agro-forestry activities, and strengthening the forestry extension programme. A National Tree Seed Centre is to be constructed to augment existing tree seed nurseries to maintain high quality seeds and to be a depository for genetic material.

Fifty wood-lots covering about 1000 hectares have been established in the country, mainly to produce fire wood for villages and for rehabilitation purposes. In addition, a number of projects which rely on afforestation for rehabilitation, such as for sand dune stabilization, have been established in many parts of the country. This amount of planted forests can hardly satisfy the increasing demand for fuel-wood and timber building materials, leading to over exploitation of natural woodlands.

A bee-keeping programme is being promoted as one of the ways through which the contribution of forests to human needs and welfare can be widened. This is consistent with the Agricultural Development Policy, which seeks to diversify food production and improve opportunities for income generation by the rural poor, particularly women. Bee-keeping is promoted through the integration of this activity into village wood-lots, plantations and orchards, for both honey and beeswax production.

See also under **Status**.

Status: Veld and forest products in Botswana play a vital role in the daily lives of most Botswana people, particularly in rural areas. Forest resources have potential as a source of employment, household and national income, and are important for the protection of the environment. As pressure on such resources increases, over exploitation and degradation become problems. Silvi-cultural and forest products research and development are needed. This would cover species trials and assessment of the commercial potential of various tree and veld products, such as grapple plant (devil's claw), morula, morama, truffles, macula leaves, gonometa cocoons, and mopane worms.

In the gazetted forest reserves, the impact of unsustainable commercial timber harvesting and the under-valuation of timber resources became apparent from the results of the inventory of forest resources. As a result, an embargo on commercial harvesting was made, and a number of timber concessions were terminated on expiry in 1993.

Despite the efforts made so far, there is still inadequate information on the extent of forest resources, forest ecology, and sustainable use of woodlands and veld products for most parts of the country. However, the Government is actively promoting the establishment of systems for the assessment and systematic observations of forests and forest lands with a view to assessing the impacts of programmes and projects on the quality and extent of forest resources, land available for afforestation, effects of land tenure on the forestry sector, and the untapped potential of forestry as a major source of income, both at the household and national levels.

The government's capacity to conduct forest research is limited, but modest forestry research initiatives have been made by non-governmental organizations and the University of Botswana. There is still need for improved coordination, and strengthening existing institutions in order to improve local capacity to undertake forestry research in Botswana. There are ample opportunities for collaboration with any willing external support to develop forestry research.

The Government of Botswana has demonstrated its commitment to strengthen the forestry sector, including forestry research, through the allocation of development funds and the creation of an administrative infrastructure during the current National Development Plan period. Funds will be used to implement Forest Management Plans for gazetted forest reserves, including: re-surveying, demarcation, opening and maintenance of fire-breaks, early burning of potential fire hazard veld under a consolidated fire management plan, and the strengthening of the Timber Harvesting and Forest Utilization and Monitoring Unit.

Capacity-Building, Education, Training and Awareness-Raising: Capability in the development of land suitability and land-use plans has been established. This assists the implementation of district-based sustainable management of all land forms including conservation of forests and the greening of degraded areas.

Information: A major forest land inventory was undertaken in the gazetted forests in the Chobe District in order to assess timber stock volumes, regeneration of timber, and the impacts of wildlife such as elephant damage, and so forth. Data derived from the inventory is used to prepare management plans, harvesting techniques, conservation and research activities and multiple uses of forests and woodlands. Mapping and inventory of other forested areas and their ecosystem's characteristics will be initiated during the current plan period. Information from this exercise will be used to determine the potential for the supply of timber products and other non-consumptive uses such as eco-tourism.

A Timber Harvesting and Control Unit has been established to monitor and control the use of forest resources. See also under **Programmes and Projects** and **Research and Technologies**.

Research and Technologies: In order to facilitate data compilation and management, a remote sensing facility and a geographic information system have been established.

In addition, a thorough valuation analysis was undertaken leading to the revision of the existing schedule of forest management fees to promote efficient utilization and assessment and recover the full value of forest goods and services.

Financing: See under **Programmes and Projects**.

Cooperation: The Government of Botswana, with support from the European Union under the Lome IV Convention, sponsored a Forestry Protection and Development Programme between 1993 and 1997 which concentrated on expanding the institutional capacity of the Ministry of Agriculture to better monitor and protect existing forests and develop their proper conservation and management on a sustainable long-term basis.

The Government of Botswana, in collaboration with the member states of the Southern Africa Development Community (SADC), participates in common-based programmes on forestry development to promote and strengthen research, planning, training, capacity building, and human resources development to enhance the sustainable utilization of the regional forest resources. A forestry training programme has been established at the Botswana College of Agriculture with support from the Government of Finland. It has entered into its second phase.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The Botswana government realizes that drought is a recurrent phenomenon and must be planned far ahead of its occurrence. In this respect, institutions have been set up in relevant ministries to deal with various aspects of drought management. Early warning units have been set up in the Ministry of Agriculture and the Department of Meteorological Services. An inter-ministerial drought committee, chaired by the Assistant Minister of Finance and Development Planning, has been established. This committee oversees drought monitoring and assessment, and recommends required action on the basis of assessment reports. Responsibility for managing and distributing drought relief food is vested in the Ministry of Local Government, Lands and Housing. During drought periods all ministries and local authorities are mobilized to assist in relief programmes including public works projects designed to create employment during difficult times.

The Tribal Grazing Lands Policy (TGLP) of 1975 introduced ranch development for designated parts of tribal land where farmers or groups of farmers could have exclusive use of range resources. It was expected that this would help improve livestock productivity and more importantly enhance the management of rangeland within these enclosures. The Agricultural Development Policy of 1991 further extends this concept into areas which have hitherto been zoned for communal use.

Programmes and Projects: Numerous programmes and policies intended to combat desertification in Botswana predate Agenda 21. Most of these are broad and inclusive rural development programmes whose funding was derived from past national development plans. Areas which have received attention include livestock development and improvement, grazing and ranch development, improving dry land farming systems, strengthening agricultural extension, establishment of early warning systems, drought monitoring and assessment capability, and forestry development, among others.

Botswana has recently concluded a comprehensive study of poverty. From this study a comprehensive programme will be elaborated to address the poverty problem, particularly in rural areas where people depend heavily on their not so well endowed natural environment. This is expected to involve the strengthening of some existing initiatives such as the Arable Lands Development Programme, which assists resources-poor farmers with various farming packages and subsidies.

A National Action Programme (NAP), established in the context of the Convention to Combat Desertification and Drought (CCD), has been launched with the requirement to ensure that people participate in anti-desertification programmes.

See also under **Research and Technologies** and **Cooperation**.

Status: Desertification is defined as land degradation which occurs in dry areas and is associated with climate variations and human activity. When desertification occurs it reduces the biological potential or the carrying capacity of land to unsustainable levels and making it lose natural resilience. This in turn has a negative impact on affected communities and may lead to wide spread poverty, hunger, and migration of the population. Recent studies show that 91,000 km² or 15.5% of Botswana is affected by land degradation or desertification. Therefore, implementation of the provisions of the Convention to Combat Desertification is crucial for Botswana.

The impacts of desertification are substantial in both socio-economic and bio-physical terms. People are most concerned with the former as desertification reduces their incomes and depresses their living conditions. Some manage to make up for the losses incurred through formal employment, the sale of livestock or veld products. However, the poor, who mostly depend on dry-land cultivation, hunting wildlife and the collection of veld products, have little to fall back on and are hardest hit. The bio-physical impacts include wind-erosion and loss of biodiversity.

There are two interrelated cycles that affect the long-term sustainability of the environment. Firstly, over-utilization of the resources - as occurs today- adversely affects the productive potential of the environment. This is evidenced by the declining wildlife numbers and reduced availability of veld products. Continued over-exploitation will negatively affect the regenerative capacity of the environment. Secondly, the position of the poor is crucial. Poor people rely most heavily on free natural resources in the vicinity of the place of domicile-where depletion is usually

most serious. The poor are thus disproportionately affected by the decline in productivity of the environment, and suffer most income losses. As a result, they are often compelled to further increase resource pressure.

The conclusion of the Mid-Boteti study suggested that in order to have workable solutions, it is imperative to know the view and secure the active participation of the local population. Whilst most people felt that the primary cause of desertification were of physical nature, the primary impacts were thought to be of a socio-economic nature, including the loss of income opportunities and the lowering of living standards.

Land degradation is severe, particularly around settlements where depletion of vegetation from livestock grazing is compounded by deforestation mainly to satisfy fuel woods requirements. Environmental degradation and resource depletion have negative impacts on the rural economy. This requires that a critical analysis of environmental problems be undertaken. The impact of grazing lands and forest resources, caused by the expansion of the livestock and wildlife herds, and exacerbated by the continual occurrence of droughts, are significant rural development planning issues related to both the conservation of the nation's resource base and rural poverty. The impacts of desertification are substantial in both socioeconomic and bio-physical terms. People are most concerned with the former as desertification reduces their incomes and depresses their living conditions. Some manage to make up for the losses incurred through formal employment and the sale of livestock or veld products. However, the poor, who depend mostly on dry land cultivation, hunting wildlife, and the collection of veld products, have little to fall back on and are the hardest hit. The bio-physical impacts include wind erosion and loss of biodiversity.

Efforts are being made in many villages to plant trees for rehabilitation and to augment the supply of fuel wood from natural woodlands. These rehabilitation efforts include sand dune stabilization projects which have become popular in the drier parts of Botswana. Measures that aim at mitigating desertification do, therefore aim mainly at correction and prevention. It is believed that most of the environment still possesses sufficient resilience to recover once the main causes of desertification have been removed.

The implementation of TGLP has been marked by varying degrees of success depending on the training related to the management of resources and livestock.

Capacity-Building, Education, Training and Awareness-Raising: In Botswana, consultation is a tradition. Thus, the Government recognizes that combating desertification can only succeed through the participation of all those affected or cause desertification while they are trying to make a living from limited resources. Early efforts to sensitize stakeholders and the public on land degradation and desertification continue through Government supported initiatives under various programmes, including the NAP.

Information: No information available.

Research and Technologies: Botswana was one of the affected countries chosen to carry out the Intergovernmental Negotiating Committee (INCD) case study for the Convention to Combat Desertification and Drought. The study was conducted at Rakops in the Mid-Boteti in Botswana affected by severe land degradation. The specific objectives of the study were to: determine the extent and the elements of desertification; assess local perception about desertification and its consequences; and involve the local population in assessing the desirability and abatement measures and the options for alternative sources of incomes.

The study was consistent with the Draft Resolution 1 - the United Nations Convention on Desertification and chapter 12 of Agenda 21, and it used the UNCED definition for desertification: land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors including climatic variations and human activities. The analysis of the study also showed the linkages between the forms of desertification.

This study on strengthening the knowledge base was a useful contribution to the formulation of the United Nations Convention to Combat Desertification and Drought. It clearly identified the need for a comprehensive, multi-sectoral approach which addresses poverty as a means of dealing with the root cause of desertification.

Financing: No information available.

Cooperation: The Botswana Government ratified the Convention to Combat drought and Desertification in Countries Experiencing Drought and/or Desertification Particularly in Africa on September 11, 1996.

Some work is being initiated under the Desert Margins Initiative, an integrated national, regional, and international research programme for developing sustainable natural resources management options to combat land degradation

in sub-Saharan Africa. The programme is led by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the Department of Integrated Agricultural Research serves as the national coordinator. The following is a brief summary of the objectives of this initiative: identification and assessment of the physical, chemical, and biological factors contributing to land degradation; evaluation of the impact of livestock production and cropping practices on soil erosion, sand deposition, vegetation composition and resilience of dry land ecosystems; development of improved nutrient cycling methods by an efficient exploitation of the interactions between organic and inorganic nutrient sources and the relationships between system inputs, soil properties, and crop productivity; development of technologies and biological materials for rehabilitation and restoration of degraded lands; evaluation of the effects of fallow/crop rotations on moisture status and fertility of soils; evaluation of improved cropping systems, and conditions for acceptance and their rapid diffusion; promotion of research on the use of indigenous trees in livestock production and sustainable utilization; promotion of diversification strategies to enhance biodiversity and ecosystem resilience, for example, the introduction of alternative crops and tree species; and evaluation of the use of a combination of crop residue and legume tree in the production of fodder. The study was consistent with Draft Resolution 1 of the Convention and Chapter 12 of Agenda 21. It used the definition for desertification as “land degradation in arid, semi-arid and dry-humid areas resulting from various factors including climatic variations and human activities” derived from the United Nations Conference on Environment and Development (UNCED). The analysis of the study showed the linkages between the forms of desertification. Through the Kalahari/Namib Project, supported by the United Nations Environment Programme (UNEP), the public, farmers, land users, land allocation authorities, traditional leaders, and non-governmental organizations were informed about the causes and impacts of desertification and drought. A national awareness campaign is about to be concluded. Communities in affected areas have shown considerable interest and are prepared to participate in anti-desertification programmes.

Botswana has in the past secured assistance for drought relief, but increasingly the needs are met by mobilizing domestic funds. A number of organizations, including UN agencies, have provided funds to assist the government where such projects have not been adequately provided for in the National Development Plan. The UN Office to Combat Desertification and Drought (UNDP/UNSO) has provided funding for the first phase of the National Action Programme, established in the context of the Convention to Combat Desertification. UNEP has also provided funding through the Environment and Land Management Sector (ELMS) of the Southern African Development Community (SADC) for the Kalahari-Namib project. There are numerous other programmes in which other donors play a significant role.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: Government policy is to improve productivity in agriculture, for example, through expansion of commercial practices and exploitation of niche markets such as horticulture and dairy farming.

The 1991 National Policy on Agricultural Development focused on agrarian reform, which included replacing the food self sufficiency goal with the concept of food security, promoting diversification of agricultural production, and incorporating the element of sustainable food production primarily through improved management of production resources. Agriculture was diversified through the adoption of non-traditional production systems and products. The Government has, for example, encouraged farmers to engage in horticulture production where conditions allow, and in harvesting and processing veld products. However, the transition to new forms of production is slow, but efforts are being made through targeted subsidies, such as the Financial Assistance Policy (FAP) to encourage people to participate. With this reform, Botswana has exceeded the 1995 target for this programme area.

In an attempt to improve the effectiveness of its agricultural policies, the government has funded a National Master Plan for Agricultural Development (NAMPAD) to guide future initiatives in the arable sector. The NAMPAD report is currently being considered by government. While it may have important implications for national agricultural production, NAMPAD's interventions are specialist and more likely to involve large-scale farmers although some extra employment may be generated. NAMPAD makes recommendations on a wide range of issues including the use of wastewater for irrigation, the introduction of horticulture, dairy farming, high value agricultural commodities and urban/peri-urban agriculture.

The government is also currently reviewing its rural development policy and is looking specifically at how to address rural unemployment, underemployment and poverty alleviation. The existing policy is nearly 30 years old and much has changed over this period.

Recommendations from the National Master Plan for Agricultural Development are currently being considered. Government is also reviewing its 30-year old Rural Development Policy.

See also under **Decision-Making** in Chapter 10 of this Profile.

Programmes and Projects: Over the years the government has funded various input subsidies for agriculture – such as ARAP (Accelerated Rainfed Agriculture Programme) and ALDEP (Arable Lands Development Programme), but these have not made a significant difference to agricultural production. A review of ALDEP is currently on-going, and ARAP is no longer in operation. ALDEP, launched in 1980 and has now gone through a number of phases, goes a long way to address the agricultural concerns cited in Agenda 21. It has assisted resource poor farmers to enable them to participate in agriculture, attain food security at the household level, and earn income from the sale of surplus produce. The assistance includes seeds and fencing of fields to protect crops. There are also a number of complementary programmes, such as strengthening the extension system through training of manpower and extension facilities (offices, transport, etc.).

The Government established a programme on agricultural water development under the Ministry of Agriculture in 1967. Through this programme agricultural reservoirs are constructed for watering livestock and for the irrigation of horticultural crops. This programme continues to receive support and will be strengthened in the National Development Plan 8 (NDP 8). Work on tillage systems has shown that double ploughing improves infiltration and enhances soil moisture conservation properties, with increased total moisture available to the crop.

See also under **Research and Technologies**.

Status: Although fewer people are now involved in agriculture and its contribution to GDP has declined sharply in recent years, it retains enormous social and cultural importance for those engaged in this activity, particularly the rural elderly and marginalized groups. In addition, more than half of the country's poor live in rural areas, and while subsistence agriculture alone cannot support them; it is an important component of their household income.

The main agricultural activity in Botswana is the rearing of cattle, goats and other livestock on savannah grasslands. Livestock numbers have grown rapidly since independence. Between 1966 and 1982, cattle numbers rose from 1.2 million to almost 3 million. By 1999, drought and disease had reduced their numbers to 2.4 million. Goats have increased in number even faster than cattle, and in 1999 they also numbered about 2.4 million. Only 5 % of

Botswana's land area is suitable for arable agriculture, and less than one % is actually cultivated. The main crops grown are maize, sorghum, millet, beans and cottonseed.

The agricultural sector is composed of traditional and commercial farming: both engage in crop and livestock production. Commercial farms comprise eight % of the total land area and tend to specialize in cattle production. In 1993, some 507 commercial farms - less than one % of all farms in the country - owned 14 % of all cattle and accounted for 37 % of the total production of cereals and pulses. Two-thirds of traditional farmers practice mixed farming. Livestock is grazed on communal land but arable holdings are cultivated individually. In 1993, traditional farms numbered 100,927 and held 86 % of all cattle.

There is great disparity in the performance of the commercial and the traditional farming sectors. For instance, the average yield of cereal crops on commercial farms is 500 kg per hectare, compared with 200 kg per hectare on traditional farms. Commercial farms also have higher annual calving rates and lower animal mortality.

Cattle ownership became more concentrated in fewer hands between 1981 and 1995, but small stock (goats, sheep, donkeys) are more evenly distributed. The European Union accounts for 80 % of Botswana's beef exports, and has introduced strict guidelines on tracking the life history of cattle.

Agriculture's contribution to GDP has declined dramatically since independence, due partly to the expansion of mining, but also to the stagnation of the sector itself. Poor soil, erratic climate conditions, over-grazing, slow adoption of technology and poor extension services are some of the reasons for this. The weakness of agriculture has contributed to the high levels of poverty found in many rural areas. Nevertheless, agriculture remains an important source of food, income and employment for many rural people.

In most Sub-Saharan African countries agriculture would provide employment for between 50-80 % of the population. But in Botswana a combination of poor soils, extreme variations of temperature and erratic rains create an inhospitable environment that is not conducive to arable agriculture. Production levels remain mostly dependent on rainfall, and even in good years income from arable agriculture is low. Droughts are a regular feature of rural life and more recently, floods have created widespread damage. Land degradation is a growing problem.

Despite a wide range of agricultural support and extension programmes in the past, there has been no sustained improvement in crop yields and the agricultural sector has been characterized by low growth in output and productivity for many years.

The agricultural workforce more than halved from 47 % in 1981 to 20 % in 1991. In 1997 agriculture accounted for about 2 % of formal employment and a significant proportion of informal employment. The contribution of agriculture to GDP reduced in a similar fashion from about 40 % in 1966 to 2.6 % in 1999/2000. This was partly because of the growing importance of mining, but also because agriculture has declined in real terms. Compared with the uncertain life of farming, many rural people hope for more stable sources of income in the towns.

Traditional agriculture is increasingly unattractive to young people, who are now much better educated than their parents and have higher expectations of paid jobs, which they seek in urban areas. With so little potential in agriculture, an exceptionally high percentage of the population is looking for formal sector employment.

Nearly half of households left behind in rural areas are female-headed and have a high proportion of elderly members. These women would face problems making a living from agriculture, even if conditions were more favourable. The majority lives below the poverty line and survive primarily on a mixture of low return subsistence agriculture, remittances from relatives in the towns and subsidies in various forms from government.

Most of the land farmed in Botswana is marginal. Soil fertility management is, therefore, extremely important in the maintenance of soil productivity and sustainable use of the land to avoid degradation. Botswana does not produce chemical fertilizers.

Botswana recognizes that reliance on chemicals for the control of pests is dangerous in the long term and unsustainable. Integrated Pest Management is currently promoted through initiatives by the agricultural research system and others. These initiatives include breeding and selecting crops resistant to major pests and diseases. Capacity has been enhanced by the establishment of a Plant Protection Division within the Ministry of Agriculture. The Division is responsible for the control of migratory and economically important pests, development of procedures for safe handling and disposal of pesticides, and for promoting sustainable pest control technologies.

See also under **Status** in Chapter 10 of this Profile.

Capacity-Building, Education, Training and Awareness-Raising: See Chapter 32: "Strengthening the Roles of Major Groups: Farmers," of this Profile.

Information: The survey and mapping of soils at the national level started in 1981 and was completed in 1990. Information derived from this programme has been used to determine land suitability for various uses. It will be further applied in the inventory of degraded lands, through the on-going Soil Conservation Project, launched in 1992 and the Range Inventory and Monitoring Project launched in 1993. The former funded by the Government of Botswana, and the latter partially funded by the British Government. See also Chapter 10 of this Profile.

Research and Technologies: On-going research seeks to identify grazing systems that would encourage forage rehabilitation and good maintenance in terms of quality and quantity. Preliminary results indicate that continuous grazing during the dry period is less destructive to range than grazing during the growing periods. The conservation and sustainable utilization of plant and animal genetic resources for food and sustainable agriculture is being implemented in line with the Convention on Biological Diversity. In the future, the establishment and persistence of legume forage under range conditions will be studied.

Research on crop rotation of cereals and legumes has shown positive benefits in the improvement of soil fertility and increased yields. Current research activities seek to establish a system that will give maximum benefit to the farmer. Inter-cropping experiments have begun recently with the aim of improving mixed cropping as a manageable system that will maximize the benefits of both row planting and mixed cropping. Such a system is also beneficial to the soil. In addition, soil fertility management has also become an important part of the implementation of soil conservation.

Research programmes on cereals, oilseeds, and legumes are evaluating genotypes for drought tolerance and escape. Breeding activities also concentrate on associated traits such as early flowering and maturity which are considered to be escape mechanisms for drought. Research is now beginning on indigenous crops, such as watermelons, traditionally recognized as drought tolerant. Other exotic crops of dry regions, such as cassava, pigeon peas, and sweet potatoes, are being studied for potential adaptation to Botswana's conditions.

The potential use of crop residues, their nutritional status, and management methods for livestock feed are being studied, together with the identification of locally available feed resources. The development of breeds adapted to local environmental conditions, production systems, and farmer preference is an on-going process involving emphasis on efficient input utilization, productivity, and competitiveness under marginal conditions. The development of a composite breed with some of the above attributes is in its final stages. In the future, breeding work will be expanded to include non-conventional but adapted animals, such as ostriches.

Financing: See under **Programmes and Projects**.

Cooperation: No information available.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: Prior to Rio, Botswana had laws to protect and conserve biodiversity. These included: the Wildlife Conservation and National Parks Act (1992); the Herbage Preservation Act (1972); and the Seed Act (1976). Plans are underway to draft a Plant Genetic Resource Conservation Act, based on the Food Agricultural Organization (FAO) International Code of Conduct for Plant Germplasm Collection and Transfer, and to draft Environmental Impact Assessment legislation. The lack of impact assessment legislation remains a drawback since environmental considerations remain at the discretion of developers. The Government of Botswana endeavours to maintain biodiversity by conserving natural habitats and wildlife in protected areas with minimal interference and adaptive management. Outside of the protected areas, the Government encourages the sustainable utilization of wildlife resources to boost the national economy for the benefit of citizens. The Wildlife Conservation Policy (1986) prescribes the utilization of wildlife resources of Botswana on a sustainable basis.

A draft Community Based Natural Resource Management Policy (CBNRM) now exists. This policy fosters the creation of incentives for the sustainable use and conservation of natural resources. This approach realizes that efforts to conserve natural resources can only flourish if poverty is eradicated or kept at a minimum. Communities are encouraged to enter into joint ventures with the private sector to realize optimal economic benefits. One pilot project has already been established. In addition, three other communities will benefit from the commercial use of a wildlife quota this year, while another four will benefit from subsistence use. Game farming for commercial purposes in Botswana has been confined to ostrich and crocodile. The three crocodile farms existed before Rio, but the number of ostrich farms has continued to grow. In view of this rapid growth, an Ostrich Management Policy was elaborated in 1994. Although Botswana has healthy populations of crocodile and ostrich, farms are potential sources for re-introductions into the wild.

Botswana had a land use plan prior to the Rio Declaration. The plan has since been improved to demarcate administrative blocks.

Programmes and Projects: See under **Status** and **Research and Technologies**.

Status: The rhinoceros is a threatened species in Botswana. Since 1995 it has been bred in captivity in community and Government facilities. Falconry, with one established project, is gradually being established in Botswana. Breeding for restocking into the wild is also undertaken.

Our membership to the Convention on the International Trade in Endangered Species (CITES) prohibits us from utilizing some of our resources that we have conserved, particularly the elephant herds which are now too large for our wildlife habitats, and are already doing irreparable damage to the ecosystem. Botswana's own herd is estimated at 80 000, and our efforts together with a group of five countries in Southern Africa to have some utilization schemes developed have been strongly resisted by the international community.

Since the Biodiversity Convention was signed, several protected areas have been merged or upgraded to national park status. These include the merging of the Nxai Pan and Makgadikgadi Pan National Park, the Moremi Game Reserve with the Chobe National Park, and the Mabuasehube Game Reserve with the Gemsbok National Park. Khutse and the Central Kalahari are the only game reserves left. Area management plans exist at least in draft form for all parks except for the Khutse and Central Kalahari Game Reserves. Nine of the thirteen proposed wildlife management areas have been gazetted. Of these, management plans at least in draft form exist for seven of nine districts. Communal areas are also included in district management plans. The provision of water for wildlife has up to date been limited to protected areas. There are 25 boreholes in parks and reserves.

Protected areas in Botswana cover 18% of the land area, while an additional 22% of the land is designated as Wildlife Management Areas (WMAs). The latter form buffers between protected area and areas of intensive agricultural activities. Wildlife use is the primary form of land use in wildlife management areas, and only compatible activities are permitted within these areas. Therefore, approximately 40% of the national territory is rich in wildlife and it has been possible to maintain it that way. Outside these areas, wildlife is still widespread but its abundance and species richness is inversely related to the extent of human development.

Since Rio, the Government has adopted a structured approach to decentralize the management of natural resources to the people of Botswana and the private sector. This has been done through activities such as community projects, photographic and hunting safaris in WMAs, and game ranches on freehold land. These activities existed prior to the

Rio Declaration, but they were not clearly designed, mapped, and regulated to promote the conservation of biodiversity. Managers are now charged with monitoring the resource stock and, in return, benefit from either consumptive or non-consumptive use of wildlife or the wilderness resource. Draft regulations exist for WMAs, and for game ranching and farming.

The worrisome thing about this particular issue is that objective scientific facts are being ignored. It is in this context that Southern African countries seek to ensure that limited, regulated trade in ivory is permitted by CITES once again. Such trade could significantly enhance the value of elephants to those who live with them on a daily basis, thus, providing an incentive for the protection and conservation of this vital resource.

A number of constraints have inhibited biodiversity conservation in Botswana. The scattered nature of resource management departments and agencies has led to a lack of harmony in policies and uncoordinated activities. The challenge of natural resources conservation in the twenty first century requires a well structured and efficient institution with a clearly defined long term vision. In this regard, the government's department responsible for the management of wildlife resources is currently being structured to enable it to operate efficiently and effectively. Currently, Botswana does not have regulations or legislation addressing intellectual property rights. Management, conservation and development of biodiversity are hampered by insufficient technology and skilled personnel. However, the Botswana Wildlife Training Institute is grappling with this task by equipping officers with sufficient knowledge and skills to manage wildlife resources effectively.

Capacity-Building, Education, Training and Awareness-Raising: The Government completed an active campaign of public educating on the need to conserve natural resources and biological diversity well before the Biodiversity Convention. Conservation education is accomplished through the media, the formation of wildlife clubs in schools, and the inclusion of environmental conservation in school curricula. The siting of educational parks in close proximity to urban centres has been an effective tool for increasing environmental awareness. The parks also serve as centres for the propagation of endangered species. Botswana continues to train anti-poaching personnel so they can deal with modern, sophisticated poachers. Anti-poaching efforts have intensified with an increase in the number of officers involved, and an increase in equipment to combat illegal off-take. The control of wildlife off-take should also improve significantly as soon as the licensing regulations, which are currently drafts, come into force.

Information: No information available.

Research and Technologies: In order to manage natural resources wisely and effectively, it is essential to understand natural ecological systems, the biology of their communities, and the gene pools. The strategic Plan for Wildlife Research in Botswana is a blue print of priority research areas. The broad goals of the research agenda are pursued under three programmes, namely: monitoring, applied research, and veterinary services. The monitoring programme addresses the development of wildlife population surveys, including a baseline inventory of wildlife populations and habitats, and the monitoring of changes including the determination of off-take. There now exists a database of population sizes of various wildlife species. However, with the extensive implementation of utilization schemes, this programme will be intensified to determine sustained levels of off-take.

Applied research includes studies on wildlife management problems, such as problems related to the elephant population, the provision of water for wildlife, and the control of nuisance predators. It also includes research on the ecology of specific species and communities, and studies of factors affecting wildlife utilization, such as game fencing and trophy animal off-take strategies. Extensive studies on wildlife-habitat relationships are in place, and there is a growing focus on wildlife movement patterns. The Government has embarked on veterinary research into wildlife disease control and genetic mapping. The country is also studying veterinary restrictions on the movements of wildlife and wildlife products which constrain effective wildlife utilization.

A National Plant Genetic Resource Committee was established in 1987 to advise the Government on the formulation of guidelines for the collection and conservation of germplasm. Since Rio, this committee has established a National Plant Genetic Resource Centre. The research programmes are currently being implemented in pursuit of a better understanding of Botswana's wildlife resources, and to monitor replenishment and consumption to ensure sustainability. Under the Wildlife Conservation Policy (1986), management plans for various species have been made to ensure that they are used sustainably. These include species management plans

for elephant and ostrich, while policies on falconry, guinea fowl and crocodile are still in draft form. Terms of reference for a flamingo management plan have been drafted.

Financing: No information available.

Cooperation: The Botswana Government ratified: the Convention on Biological Diversity (on October 12, 1995); Ramsar Convention on Wetlands of International Importance Especially as Wildlife Habitat; and, the Convention on the International Trade in Endangered Species (CITES) (on November 14, 1977).

Regional cooperation on the conservation of biological diversity in Southern Africa has existed for a long time through the Southern African Regional Commission for the Conservation and Utilization of the Soil (SARCCUS), and the Southern African Development Cooperation (SADC). Botswana is also a party to the Southern African Convention for Wildlife Management (SACWM), formerly the Southern African Centre for Ivory Marketing (SACIM), and has collaborated closely with the International Board for Plant Genetic Resources (IBPGR). Such cooperation resulted in standardized and coordinated wildlife surveys in the Southern African Region, through the Elephant Survey and Mapping (ELESMAF) Project which started in 1995. Recent plans to merge Botswana's Gemsbok National Park with South Africa's Kalahari Gemsbok National Park to form a trans-frontier park are in progress and a draft management plan has been prepared. A similar development is proposed along the Limpopo Valley between Botswana, South Africa, and Zimbabwe.

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**CHAPTERS 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY
AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY,
COOPERATION AND CAPACITY-BUILDING.**

Decision-Making:

Technologies: No information available.

Biotechnologies: No information available.

Programmes and Projects:

Technologies: No information available.

Biotechnologies: No information available.

Status:

Technologies: No information available.

Biotechnologies: No information available.

Capacity-Building, Education, Training and Awareness-Raising:

Technologies: No information available.

Biotechnologies: No information available.

Information:

Technologies: No information available.

Biotechnologies: No information available.

Research and Technologies:

Technologies: No information available.

Biotechnologies: No information available.

Financing:

Technologies: No information available.

Biotechnologies: No information available.

Cooperation:

Technologies: No information available.

Biotechnologies: No information available.

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CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES.

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES.

Decision-Making: The Government of Botswana is committed to ensuring environmental sustainability in the Okavango by, inter alia, its substantial legislation, regulation and policies designed to promote the conservation and sustainable use of its natural resources, and through its National Conservation Strategy.

The National Water Master Plan (NWMP) was formulated; the first phase of NWMP was completed in 1992. The main objective of the NWMP was to assess water requirements for all users, based on projected water demands for a period of 30 years between 1990 and 2020. The NWMP also took into consideration effects of water development on the environment over the period of its implementation. Prior to the establishment of the NWMP (between 1990 and 1992), Botswana undertook an assessment of its water requirements.

The provision of water for agricultural purposes is carried out under the framework of the National Policy on Agriculture, which lays emphasis on providing adequate and secure livelihoods for those involved in agriculture and increasing food self-sufficiency. Agro-based industries such as inland fisheries and small-stock rearing are encouraged. The Government uses the Financial Assistance Policy to assist those interested, while simultaneously conserving agricultural land resources. The Government has a deliberate policy to provide the population with water at affordable tariffs.

Programmes and Projects: In its first phase, the NWMP developed several projects including the North-South Carrier project which is already being implemented. This project involves the construction of a dam at Letsibogo and a pipeline to transfer water to the southern part of the country at a cost of P1.2 billion. Additional sources of fresh water identified during this first phase will be developed to alleviate widespread water shortages all over the country. Another aspect of the NWMP is the establishment of inter-links between adjacent boreholes to supply neighboring villages. Small filtration facilities will be set up at some of the larger projects to supply potable water to beneficiaries. This is part of the Lands Area Water Supply Programme (LAWS). Furthermore, a programme of rehabilitating and equipping hand-dug wells was also introduced in the mid 1980's. Through this programme the quality of water drawn from open wells has been improved and hand pumps have made it easy for farmers to draw water.

DWA has since made it compulsory for all water development projects to be supported by independent Environmental Impact Assessment (EIA) Studies following the 1991 experience from the Southern Okavango integrated Water Development Project. A section which monitors pollution of water sources has been established under DWA. There is also an Aquatic Weeds Control Unit, stationed in Maun, which samples and analyses water from the area to establish a water quality information baseline. The Ministry of Agriculture has been constructing small dams for agricultural purposes for the past three decades. Some of these structures have the potential to support small scale irrigation projects of up to 15 hectares. Plans are at an advanced stage to use these structures by leasing out plots to qualifying individuals and groups of farmers. Utilization of such facilities will result in the reduction of horticultural imports and generate employment for the rural dwellers in addition to supporting the livestock industry.

The Southern Okavango Integrated Water Development Project (SOIWDP) was a water development project, entailing major excavations of the Boro River and the construction of three large dams and reservoirs. The SOIWDP was designed to augment water from the Boro river to meet the needs of Maun, 15 000 ha of irrigation, and the Orapa diamond mine.

At the Government of Botswana invitation, the International Union for the Conservation of Nature and Natural Resources (IUCN) evaluated the proposed project and found it ill-conceived and detrimental to the ecosystem and communities of the Delta. The Government did accept the recommendations of the review report, and is supporting sustainable alternatives such as the conjunctive use of ground water and surface water. These and other sustainable and economically attractive uses of the Delta, such as eco-tourism, are important in alleviating the pressures to use the resources in potentially non-renewable ways.

Status: Water issue are becoming topical in the Southern African sub-continent, particularly in the context of wetlands ecosystems, which are among the most biologically productive in the world, but are disappearing globally

at an alarming rate. The Okavango Delta wetland is particularly significant as one of the remaining inland wetland ecosystems in the world. While it is unknown how many rare or threatened species of flora and fauna exist in the Delta, the wetland ecosystem as a whole is a critically endangered environment of international significance.

While it is understood that the perpetual change of the Delta's composition is necessary for the maintenance of the biodiversity of the wetland, the critical function of the flora and fauna in this process is only beginning to be studied. The uses of the Delta waters for agricultural, mining, and domestic demands are not necessarily ecologically unsustainable, but water development plans must be carefully appraised and considered.

Findings of the Rural Water Supply (RWS) study, which was part of the NWMP, indicate that supply is close to the 100% coverage target for urban centres and large villages, but rural dwellers living in small or scattered settlements do not enjoy these benefits.

Botswana is generally dry with low, unreliable, and unevenly distributed rainfall both in space and time. The occurrence of long spells of drought is very common. Very often water sources such as dams, sand rivers, and hand dug wells dry up. These characteristics seriously affect productivity in all sectors and leave rural populations with few or no resources. This situation calls for prudence in the planning, management, and utilization of fresh water resources.

Overall planning for fresh water development remains the prerogative of the Government. However, the responsibility for water supply for urban and industrial use rests with a parastatal, the Water Utilities Corporation. This Corporation develops water sources and supplies water for domestic, industrial and other urban uses at charges intended to recover costs of development and operation. The supply of water for urban consumption is not subsidized and, therefore, the operation is self sustaining.

Community participation is encouraged and monitored from the inception of projects. In fact, the initiation of projects is by communities themselves with assistance from the Agricultural Extension staff.

Capacity-Building, Education, Training and Awareness-Raising: The Government, through its various establishments, such as Rural Training Centres, assists target groups in building the desirable management capabilities. The objective is for communities to own such facilities and not the Government.

Information: No information available.

Research and Technologies: No information available.

Financing: The Government plays a major role in financing water resource projects for agricultural purposes and rural areas. Urban water is however sold at cost recovery rates.

Cooperation: At the Government of Botswana's invitation, the International Union for the Conservation of Nature and Natural Resources (IUCN) evaluated the proposed project and found it ill-conceived and detrimental to the ecosystem and to the communities of the Delta. The Government of Botswana did accept the recommendations of the review report, and is supporting sustainable alternatives such as the conjunctive use of ground water and surface water. These and other sustainable and economically attractive uses of the Delta, such as eco-tourism, are important in alleviating the pressures to use the resources in potentially non-renewable ways.

Botswana shares several water sources with neighboring countries. Cooperation and consultation on the use of such sources is therefore inevitable and has led to the creation of a Joint Permanent Technical Committee of riparian states to oversee the utilization of such resources. Botswana has also established bilateral agreements with South Africa and Namibia, and a trilateral agreement with Angola and Namibia. The main objectives of these agreements are to safeguard shared water resources.

In September 1994, Angola, Botswana, and Namibia established a Permanent Okavango River Basin Water Commission (OKACOM) to coordinate and collaborate on the sharing of the basins water resources. The agreement establishing OKACOM specifically advocates the use of Agenda 21 principles in natural resources management and acknowledges the Helsinki rules on the use of international waters. The riparian states have channeled a request for GEF support in the execution of a basin wide Environmental Assessment (EA) and the formulation and implementation of an Integrated Management Plan (IMP) through OKACOM. The integrated management plan is intended to promote the sustainable development of the Okavango River Basin (ORB) and the protection of the hydro-environmental and ecological integrity, its unique wetlands and delta system.

The Botswana government is a member of the Southern African Development Community (SADC) which promotes regional integration in sustainable development. Under the auspices of SADC, the Government of Botswana inevitably cooperates and consults on the use of the shared water sources with neighboring countries in the region. Member states of the Southern African Development Community (SADC) developed and signed an agreement on Shared Water Course Systems in August 1995. The main objective is for SADC members to equitably share the water resources of the region, taking into consideration environmental circumstances. In addition to the protocol, the eight riparian countries sharing the Zambezi River Basin are in the process of preparing a Zambezi River Commission agreement.

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**CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS,
INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN
TOXIC AND DANGEROUS PRODUCTS.**

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES

Decision-Making:

Hazardous Wastes: The Government of the Republic of Botswana remains committed to effectively address environmental health issues and other related concerns. As a consequence, it has embarked upon a number of strategies. A detailed and comprehensive study was undertaken on the management of medical waste in Botswana in 1995, as part of the Waste Management Project. The study produced a reference document for the development and implementation of policies and guidelines for the disposal of medical waste in Botswana. The report also contains a code of practice which forms the basis for medical waste management and, against which, performance of waste management practices can be evaluated.

Solid Wastes: In Botswana, several initiatives resulting from a comprehensive solid waste project have been undertaken. A Government Department is being formed to facilitate and coordinate waste management issues countrywide, and to consolidate the initial achievements. Such a department will be involved in three general areas, namely: minimizing wastes; maximizing environmentally sound waste refuse and recycling; and promoting environmentally sound waste disposal and treatment.

A Waste Management Strategy has been drafted and is being considered for approval by the government. In addition, a Waste Management Bill has been drafted and will be sent to Parliament for approval after internal consultations. Draft Technical Guidelines for waste disposal by landfill have been developed, discussed; and are being consolidated into a final document. Cartographic work on ground-water vulnerability maps has been completed and the maps have been printed and distributed for planning purposes.

Radioactive Wastes: No information available.

Programmes and Projects:

Hazardous Wastes: See under **Decision-Making**.

Solid Waste: The comprehensive solid waste project was considered to be a very ambitious project. Most of the targets have been addressed successfully, while others are near completion. The project had the following objectives: the preparation of a legal and institutional framework for waste disposal and waste management at the national level; the identification of water resources vulnerability; the improvement of the water quality database, and waste generation and current practices of waste management; the establishment of concepts for the reduction, re-use and recycling of certain specific wastes (cans and metal scrap, plastic wastes, waste oil and wastes from health/medical facilities); the completion of case studies on the identification, planning, operation and closing of landfill sites at three elected locations; the improvement of technical staff and planner qualifications; the promotion of public awareness on proper waste handling and disposal, as well as the protection of water resources in general; and the provision of ad hoc, immediate advice on waste management to urban and district councils at the local level (specifically land-filling).

Radioactive Wastes: No information available.

Status:

Hazardous Wastes: No information available.

Solid Wastes: In Botswana, the focus has been mainly on the prevention and control of water pollution through proper identification and planning of waste disposal sites. During the initial stages, starting in late 1989, the stress was on the hydro-geological aspects, especially the compilation of groundwater vulnerability maps that indicated existing ground water regimes and their sensitivity towards pollution.

Inadequate waste management in general and the uncontrolled disposal of wastes in particular were identified as among the core problems in the sustainable protection of water resources in Botswana. This has been exacerbated by increasing waste generation due to rapid economic development, population growth, and changing life styles and consumer habits. Solid wastes include domestic or household waste, human wastes such as night soils, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants, commercial and industrial waste, hazardous waste, hospital waste, street sweepings, demolition and construction debris, and excavation waste. Without preventive measures and tight controls, high risks of water pollution of both ground water and surface water are possible. With the previous uncontrolled dumping of wastes, the deterioration of drinking water quality

was unavoidable. This could have posed a severe threat to public health, and the human and the natural environment.

Radioactive Wastes: No information available.

Capacity-Building, Education, Training and Awareness-Raising:

Hazardous Wastes: No information available.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Information:

Hazardous Wastes: No information available.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Research and Technologies:

Hazardous Wastes: See under **Decision-Making**.

Solid Wastes: Three case studies on medical, metal, and oily wastes have been carried out and their recommendations are being studied for implementation. The University of Botswana has conducted an Environmental Impact Assessment (EIA) course focusing on landfill sites which attracted participants from the Commonwealth and English speaking African countries. Also, an International Waste Management Congress was held in Botswana in June 1995 under the theme “Waste Management - Prerequisite for Sustainable Development,” which attracted some 200 participants, mostly representing local authorities. A second congress is planned for June 1997.

Radioactive Wastes: No information available.

Financing:

Hazardous Wastes: No information available.

Solid Wastes: No information available.

Radioactive Wastes: No information available.

Cooperation:

Hazardous Wastes: No information available.

Solid Wastes: See under **Research and Technologies**.

Radioactive Wastes: No information available.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: In Botswana, the ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) has been approved by the Cabinet. It is the Government's commitment to fully implement the Convention. The Government of Botswana has made efforts to remove legal obstacles that obstruct the full integration of women in the development process, namely the Citizenship Amendment Act (1995), and the Mines and Quarries Amendment Act (1995). In Botswana, both women and men have equal employment opportunities as reflected in some legislative amendments, for example, the Mines and Quarries Act, and the Employment Act, which allows full salary pay for female civil servants while on maternity leave. The Consultancy on the Review of Laws that Affect the Status of Women in Botswana, being coordinated through the Ministry of Labour and Home Affairs, will further address other aspects of the law which are not gender sensitive. Following the UN Fourth World Conference on Women held in Beijing in September 1995, a new collaboration between the Botswana government and NGOs concerned with women's issues began. In the following year, the government formulated a new policy on Women in Development, which identified six critical areas of concern, namely, women and poverty, women in power and decision making, education and training of women, women and health, the girl-child, and violence against women. The Women's Affairs Division, in consultation with non governmental organizations (NGOs), has developed a Draft National Plan of Action based on the Platform for Action from the Fourth World Conference on Women, Beijing, China 1995. Further consultations on this Draft National Plan are being conducted throughout the country, especially in rural communities. The policy has since been translated into the National Gender Programme, launched in November 1998. The Department of Women's Affairs is in the process of developing a comprehensive advocacy and mobilization strategy for gender and development, and will be working closely with NGOs in its implementation. Recent changes in the law attempt to address this issue through the 1999 Affiliations Proceedings Act, which provides for a minimum P100 a month to be given by the father for the maintenance and education of the child. This amount can be adjusted up or down according to the court's view of the father's circumstances. The Financial Assistance Policy (FAP) started being implemented in 1983 in order to diversify the economy of Botswana and create employment. The FAP is more favorable to female entrepreneurs since they are given a higher percentage on grants than males. The grant is based on the location of the business, and rural women are given the opportunity to benefit more from this programme. In addition, different departments of various ministries also provide some assistance and implements for rural communities. In order to improve the status of women, and provide a basis for continuous review and monitoring of women's issues in development, the government of Botswana has found it imperative to develop a Policy on Women in Development. This Policy was approved by Parliament on the 9th of July, 1996. The Policy objectives are to: eliminate all forms of inequalities and inequities among women and men; ensure that the needs of women are identified and provided for in development planning; promote women's health, including reproductive health and rights; ensure that economic trade and employment policies promote women's access to gainful employment; link relevant policies, programmes and measures with a view to establish mechanisms to enable women to function more effectively in their multiple roles; and encourage gender responsive data collection, analysis and research, and ensure their use for planning at all levels. **Programmes and Projects:** Prior to the election of 1999, a local NGO, Emang Basadi, launched a political education project to mobilize more people to vote and to increase the number of women in parliament. This achieved some success. See also under **Non-governmental Organizations** for more information on the activities of women's NGOs. Commendable progress has also been made in the improvement of women's health, as reflected in the Maternal and Child Health and Family Planning Programme (MCH/FP), which has been the core strategy for reaching women and children, particularly because they are the most vulnerable groups. **Status:** Female representation in government improved somewhat after the general election of 1999, but is still relatively low. The representation of women in parliament increased from nine % in 1994 to 18.2 % in 1999, and the representation of women on boards of parastatals has also improved. The provision of services, such as water and sanitation facilities, are designed, developed, and improved in consultation with women. Women in Botswana have made great gains in education, health and employment since independence. However, there are a number of economic and socio-cultural practices, as well as laws, which work against women's empowerment and full participation in society. In Botswana culture women tend to have less power in gender relations than men, and many fathers do not take responsibility for their children. Of particular concern are issues of unequal access to training and employment, rising levels of violence against women, and higher levels of poverty amongst women

than men. Women are also greatly affected by the HIV/AIDS epidemic: young women have higher levels of HIV infection than young men, and female-headed households have more dependants than male-headed ones. Female-headed households also have fewer income earners and take on most of the care for the sick. One of the key problem areas for women is their unequal treatment under the law, compared with men. For instance, under common law, married women must have their husband's consent before loan applications can be approved. Under customary law, the homestead can only be inherited by the youngest son. At times the heir has been known to evict his sisters, leaving them homeless and vulnerable if they have no other means of support. In the area of education, female enrolment is generally slightly higher than that of males at primary school and at junior secondary school. But this drops off at senior secondary level, and by Form 5 males predominate. This is largely because boys tend to perform better than girls at exams for senior secondary school selection, and also because of girls leaving school due to teenage pregnancy. The effect is that many girls leave junior secondary school with levels of education that are too low to get them into the job market. Female enrolment at university level has increased considerably but technical and vocational enrolment is still low. Many women live in rural areas, where employment opportunities are most limited. Women account for three-quarters of informal sector enterprises, and tend to occupy activities with the lowest returns and limited opportunities for credit, skills training and materials. They have limited access to productive resources, particularly cattle, land, cash, labour and credit. While legal changes such as these are a welcome move, there are still many areas of discriminatory law that disadvantage women. For instance women who are married in community of property face particular problems. The provisions of the law allow the husband to manage and control the family estate without the knowledge and consent of his wife, thus reducing her to the status of a minor. Married women must have their husband's consent before loan applications can be approved. Under customary law the homestead can only be inherited by the youngest son, leaving daughters with an uncertain future. The effect of such laws can restrict women's attempts to improve their livelihoods, through involvement in income generating schemes for instance. They can also reduce a woman's circumstances and drive her into poverty. Women come under heavy social pressure to conform to traditional female roles that often work against attempts to empower them. In recent years efforts by the government to secure basic education for all have seen almost equal participation in learning between the sexes, although female participation at vocational and technical training level is still low. However, there is a significant minority of young women who still drop out of secondary schooling to have babies. While the law has been changed so that they can return to school, many are not motivated enough to do so. With high levels of youth unemployment, young women with small children and an incomplete education will find it much harder to get a job and out of the cycle of poverty. Capacity-Building, Education, Training and Awareness-Raising: Organizations, such as the Rural Innovative Industries Centre (RIIC), have created environmentally sound technologies and provide training, research, and resource centres for rural communities, particularly for women. It has been recognized that education is the base for both individual and national development, and recent studies of educational trends in Botswana reflect an improvement in relative opportunities and participation of females in schools and training institutions. Pre-school education (that is, nurseries, kindergartens and day care centres) has increased in Botswana. This has been a result of the increased involvement of rural women in income generating activities in the labour market, with children being left in the care of pre-school centres as well as with relatives. It is also due to the growing awareness by parents of the social and educational benefits of pre-school education (National Development Plan 7, 1991-1997). Research and Technologies: The Ministry of Commerce and Industry is looking into how woman can best benefit from modern technologies. Financing: Women's NGOs are financially assisted by the government and other bodies in order to enhance their capacity building for sustainable development.

Children and Youth: Decision-Making: Botswana acceded to the Convention on the Rights of the Child in March 1995, entering a reservation concerning the definition of a child. The initial report on implementation of the Convention was completed in May 2001. Legislation relating to children has been reviewed and is being revised to reflect the best interests of the child. Children have been involved in the consultations undertaken by the Ministry of Local Government. The principles of the Convention on the Right of the Child are compatible with the rights guaranteed under the Botswana Constitution. Under those principles, Botswana society places undiminished value on the child. However, disparities exist in sharing society's benefits. The Convention provides guidance for the government in its efforts to protect the child and provide an environment for his/her development. From the Convention's standards, the NPA has sited some laws affecting children which need to be reviewed. These include: the Affiliation Proceedings Act; the Deserted Wives and Children's Protection Act; and the Employment Act. His

His Excellency the President of Botswana signed the Children's Declaration on Child Survival, Protection and Development at the World Summit in May 1992. Subsequently, the government developed and adopted the National Programme of Action (NPA) to implement the provisions of the Global Declaration. His Excellency the President acceded to the Convention on the Rights of the Child in March 1995. This document legally binds the Republic to adhere to the Convention's provisions, which have been incorporated into the implementation strategies of the NPA. The NPA recognizes that programmes initiated at the national level are put into practice at the district level. This highlights the need to strengthen the districts. The NPA represents children's policy in Botswana. It identifies the strategies which will be undertaken to address children's needs, problems, and social hardships. It also contains programmes to be developed and implemented for children of all social strata, including those in remote areas. The NPA highlights the national environmental policy framework, and environmental and child survival issues. This programme of action outlines the strategic areas of responsibility and goals set for each sector in order to address environmental issues as they affect children and the population at large. In particular, where environmental management is concerned, the NPA outlines strategies to address water resources management and sanitation, and environmental pollution. These environmental concerns are significant as far as child survival is concerned. Programmes and Projects: The government of Botswana has taken steps to develop measures to improve the welfare of its children. Status: Traditionally, children's rights have not featured very prominently within the family, the government or civil society at large. This is gradually changing, with the realization that children have a role to play in their families, their schools and their communities. It is now recognized that young people, so acutely affected by HIV/AIDS, unemployment and environmental degradation, must be involved in finding solutions to these problems, which threaten their very future. Cooperation: The Government of Botswana, with the financial assistance of the United Nations Development Programme (UNDP), has designed a National Environmental Education Strategy as the basis for the Environmental Education Action Plan. The Strategy acknowledges that young people represent an important target group and should be regarded as a distinct and influential force in promoting environmental awareness.

Indigenous People: No information available.

Non-governmental Organizations: Decision-Making: Civil society in Botswana has historically been weak, perhaps because of the predominant role played by government in most aspects of public welfare provision. However, in recent years – particularly with the advent of HIV/AIDS – civil society organizations have been growing in numbers and in strength. Government, in turn, is recognizing the important role that non-governmental organizations and community groups can play in filling gaps in raising public awareness, service delivery and other areas. A policy is currently being developed to facilitate a clear working relationship between government and civil society organizations. In 1995, NGOs in Botswana set up the Botswana Council of Non Governmental Organizations (BOCONGO). The purpose of BOCONGO is to help create an enabling environment for the NGO sector to become a recognized partner of government in the development process. BOCONGO provides a focus for networking, advocacy, capacity building and collective mobilization of resources to strengthen the civil society sector in Botswana. Botswana has only one human rights organization, Ditshwanelo – the Botswana Centre for Human Rights - which was set up in 1993 by a group of concerned voluntary agencies and academics to promote a human rights culture in the country. Ditshwanelo carries out para-legal work with marginalized groups, human rights education, and advocacy to uphold existing human rights, while also trying to reform discriminatory law. The Botswana Council of Non Governmental Organizations (BOCONGO) has a position paper on poverty and poverty alleviation, which focuses on the advocacy and implementation role of its members. These agencies are well placed to target, the poor while also providing an important mechanism for communities to voice their concerns. It is a common complaint that poor people are marginalized from decision-making processes and do not have a say in matters affecting them at community level. While NGOs can only partly solve this problem, they do have an important role to play. Programmes and Projects: NGOs have an important role to play in programmes such as home-based care, small, medium and micro enterprises, and community development schemes. Voluntary agencies including NGOs and Community Based Organizations (CBOs) are now developing a relationship with government and looking for other sources of funding. All parties are currently finalizing an NGO/CBO policy setting out ways of working together. Income generation is a key focus for many voluntary agencies working in the field of poverty reduction. Groups such as Botswana Against Poverty and the Botswana Christian Council are involved in basket making and weaving cooperatives. The agency Cooperation for Research, Development and Education is

supporting various credit and finance schemes and the National Youth Centre is supporting a scheme for fruit juice production and sale by young people. On a broader level Emang Basadi campaigns for greater equality for women and the removal of all cultural and legal barriers that hinder the advancement of women in Botswana. Other women's NGOs focus on important social welfare issues. Status: The voluntary sector in Botswana has historically been weak and for some years dependent largely on foreign donor organizations. Many of these have left Botswana because of its middle income status. There are now an increasing number of effective local NGOs, and churches also play a significant role in social welfare support for vulnerable groups, particularly in urban areas. There are now many societies, community groups and other non-governmental organizations representing a wide range of interests and concerns, including disability; women, gender and development; small, medium and micro enterprises; environment and agriculture; health and HIV/AIDS; human rights; youth and culture; and the development arm of the churches. These agencies have a comparative advantage in targeting vulnerable groups such as women and youth, the disabled, the terminally ill and orphans. Civil society organizations, however, have become the victims of Botswana's recent economic success. With the withdrawal of many foreign donors from Botswana due to its status as a middle-income country, local NGOs and CBOs are increasingly turning to government in search of financial support.

Local Authorities: No information available.

Workers and Trade Unions: No information available.

Business and Industry: No information available.

Scientific and Technological Community: No information available.

Farmers: Programmes and Projects: To strengthen the role of farming communities, the government has established programmes which range from: rural development; agricultural initiatives; training, research and other socioeconomic schemes. Farmers are encouraged to form committees and other village based organizations, such as cooperative societies, drift fencing groups, and syndicates in order to delegate power to producers on matters relating to natural resources management, credit facilities, and management of their production systems. In addition, farmers are supported through an extensive extension system which is provided by the Agricultural Extension Service in the major agricultural regions. Status: 80% of Botswana's population lives in rural areas where its main subsistence and sustenance is based on agricultural production and land-based resource use. The major farming activities involve cattle farming under communal grazing and arable farming practiced on less than five percent of the land surface area. Targeted subsidies and incentives are provided to farmers for different production systems. The government reviewed the agricultural performance in 1989, and has outlined the constraints affecting farmer production and they include: farm-prices; technology transfers; trade; land tenure; the role of women in agriculture; and resource limitations. Agricultural development policies and other programmes on forestry, land use planning and rural development are addressing these constraints. Capacity-Building, Education, Training and Awareness-Raising: The role of farmers is supported through consultations, constant visits, and out-reach programmes such as farmers' field days and other initiatives. Information: The information given to farmers covers sound farming practices and technologies on crop and animal husbandry, maintenance of land quality, natural resources conservation measures, efficient use of chemicals for pest management, and use of low-input equipment and energy. During the implementation of National Development Plan 8 (NDP 8), the Agriculture ministry aims to incorporate into its extension network related projects, programmes, and the findings of major studies which have been undertaken. These studies include The Development of the Extension Message, Relationships with the Department of Research, and the proceedings of the First National Conference on Agricultural Extension. These documents outline the procedures and programmes which are needed for the effective and efficient running of the extension service.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Cooperation: No information available.

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: The Government has established the Botswana Technology Centre as a centre for the advancement of science and technology. This Centre is mandated to serve as a focal point for the development and dissemination of science and technology. Its objectives are to identify, assess, adapt, evaluate, and monitor technology in support of national development, and to assist in the solution of technological problems. In spite of this effort, science and technology activities in Botswana remain fragmented and scattered over several sectors and, as such, they need coordination, streamlining and proper targeting.

The Botswana Government decided to formulate a comprehensive Science and Technology Policy for Botswana with policy elements and strategies for basic and applied science to overcome the major challenges. The Policy includes consideration of knowledge dissemination and application in the community. The Policy will be brought for consideration and adoption by Parliament in July 1997. The core objectives of the Policy are: to develop, improve and raise national productive capacity and competitiveness; to promote and develop traditional, new and innovative technologies; and to improve and develop scientific and technological awareness, knowledge, and culture in Botswana.

To realize these core objectives, the Policy includes a set of strategies to help build science and technology capacities in the economic and service sectors with an emphasis on rural areas. In the process, the Policy outlines a set of objectives and strategies to stimulate, organize, and use scientific and technological potential to achieve national economic, social, and cultural development goals.

Programmes and Projects: No information available.

Status: The science and technology strategies need to be converted into projects and programmes in order to effect implementation through legislative and executive powers in order to overcome the existing impediments to science and technology development in Botswana. The constraints relate in particular to: the lack of skilled and experienced human resources; poor scientific infrastructure; uncoordinated research; and the lack of science and technology environment that is conducive to technology transfer. Maximum training of local professionals is important to ensure the transfer of technologies that are conducive to local conditions.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The need to develop science and technology was recognized during the past National Development Plans 6 and 7, despite the impressive economic and social achievements realized in the country over the period. These developments, coupled with a growing population which is increasingly becoming urbanized, modernized, and better educated, have resulted in changes in the demand for goods and services. The demand for industrial products and modern goods and services is expected to accelerate in the coming years. Moreover, the demand for skilled human resources, particularly professionals in the areas of science, medicine, and engineering is expected to rise significantly. The ability for Botswana to compete in the provision of high quality products and services depends heavily on investment in science and technology, including research.

Financing: In terms of funding, more resources will be required to finance expected activities in areas of research institutions and research in general. This is in addition to existing allocations to sectors implementing science and technology programmes. Such funding will include contributions from the private sector, the government, NGOs, and the donor community.

Cooperation: No information available.

CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: Education is a high priority for the Government of Botswana. The government's commitment to education is linked to supplying the economy with an educated and skilled workforce. In 1994 government adopted a Revised National Policy on Education (RNPE) which places particular emphasis on universal access to basic education, vocational education and training, preparation and orientation to the world of work, especially in the areas of science and technology. The education curricula are being reviewed to this end, and government is expanding vocational training in close collaboration with the private sector.

With 90 % of children completing primary school and 70 % continuing to secondary school, Botswana is well on the way to achieving the Vision 2016 goal of an educated, informed nation, where there is "equality of educational opportunity, and where no citizens are restricted to the circumstances of their birth."

The Ministry of Education completed a commission to review the whole education system in 1993. In addition, the Department of Curriculum has reviewed the Primary School Curriculum to be gender sensitive.

The curriculum at both primary and secondary level is currently being revised, with the aim of linking it better to the world of work and increasing its practical orientation through the introduction of subjects such as business studies, design and technology and home economics. The new curriculum is already up and running in Community Junior Secondary Schools and will soon be introduced into primary schools.

Programmes and Projects: The National Conservation Strategy Agency has initiated an activity as part of the World Environment Day, during which there are celebrations for children at all educational levels to participate in essay competitions about the environment. This is to educate and encourage them to participate in environmental conservation activities. This project is completed in cooperation with other relevant institutions, government and non-governmental organizations.

Botswana has a literacy programme which has been successful. Most of the recipients have been female.

See also under the heading **Capacity-Building, Education, Training and Awareness-Raising** in the various chapters of this Profile, especially Chapter 3.

Status: A key aspect of vocational training will be life skills and outcomes-based learning, rather than learning by rote. Skills development is particularly important for poor people because they often do not complete their education and do not have the practical skills required to get employment or to succeed in self-employment. Subsidized full and part time courses will be available to school leavers and employees, including stand-alone life-skills courses.

The recommendations of the RNPE are being phased in over a 25 year period and significant progress has been made in some areas. Botswana has made enormous progress in expanding access to education. Primary school enrolments rose by 87 % between 1979 and 1994 and by 1997 had reached 97 %. Primary and secondary education is provided free in government schools, although parents have to cover some supplementary charges, such as the cost of uniform and transport.

However, despite all these achievements, the pace of educational change has lagged behind national development. There are much still remains to be done. A well educated, highly skilled workforce is essential to achieve the government's aim of sustainable economic diversification, and a modern education system is the key to delivering this workforce. Botswana's education system, however, has fallen behind the pace of national development and has not kept up with the needs of the country and the job market.

Due to shortages of trained staff, however, the Ministry of Education faces considerable difficulties in filling teaching posts, especially in secondary schools. This problem is exacerbated by the impact of HIV/AIDS on teachers and educational staff generally.

Despite the high unemployment rate, Botswana has a skills shortage and this situation is predicted to get worse as the HIV/AIDS epidemic takes its toll on the existing workforce. The education system has not been able to adequately equip school leavers with the diverse and high level of skills required by the job market as a whole. A recent conference on Citizen Economic Empowerment concluded that lack of business management and technical skills is the most important constraint on citizen empowerment.

The education sector in general faces considerable difficulties due to shortages of trained staff. There is currently a shortage of teachers in these institutions (a 24 % vacancy rate), partly because there are not enough teachers, but

also because many people need retraining to take on a different approach to learning. This is a wider problem running through the education system as a whole.

In consonance with the objectives of science and technology, the objectives of education and awareness raising, as well as capacity-building are to: develop, improve and raise national awareness, productive capacity and competitiveness; promote and develop traditional, new and innovative technologies; and improve and develop scientific and technological awareness, knowledge and culture in Botswana.

The educational review process took note of the environmental problems defined in the National Policy on Natural Resources Conservation and Development. This review process, among other things, is meant to enhance the environmental component of the school syllabi. In particular, the content should reflect the environmental issues that are of interest to Botswana. It is recognized that for children to appreciate the national and international efforts towards environmental management they ought to be educated on these subjects, made to participate in environmental activities, and be molded into the future befitting custodians of natural resources.

Information: No information available.

Research and Technologies: No information available.

Financing: In the government's budget for the 2000/2001 fiscal year, education was the largest single sector, with 25 % of total allocated expenditure.

Government spending on education has increased steadily and as a share of GDP Botswana ranks among the highest in the world. At the start of the 1990s Botswana allocated 7 % of GDP to education and by 2000 this had risen to 9 %, well above other countries in the region. This spending is aimed at guaranteeing nine years of basic education to all children and increasing the proportion of students who move on to senior secondary school. There is also expansion in the area of vocational training.

See also under **Cooperation**.

Cooperation: Botswana, with the financial cooperation of the United Nations Development Programme (UNDP), has designed a National Environmental Education Strategy which will form the basis for the Environmental Education Action Plan. The Environmental Education Strategy acknowledges that young people represent an important target group and should be regarded as a distinct and influential force in promoting environmental awareness.

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**CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR
CAPACITY-BUILDING IN DEVELOPING COUNTRIES.**

This issue has been covered either under Chapter 2 or under the heading **Cooperation** in the various chapters of this Profile.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the UN System.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

This issue has been covered under the heading **Cooperation** in the various chapters of this Profile. However, you will find information on the status of ratification and implementation international agreements that the Botswana's government has signed.

The Botswana Government signed the Framework Convention on Climate Change during the UNCED World Summit, and has subsequently ratified the following international agreements: Convention to Combat Desertification; Convention on Biological Diversity; Ramsar Convention on Wetlands of International Importance Especially as Wildlife Habitat; Convention on International Trade in Endangered Species; and the agreement concerning the Southern African Centre for Ivory Marketing (SACCIM).

The implementation of the provisions of these conventions is underway, despite limiting resources. Effective implementation requires substantial flows of new and additional financial resources in order to cover the incremental costs for the actions Botswana has to take to correct such environmental problems and to accelerate sustainable development.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: Botswana has a National Agenda 21 Coordinating Committee which has coordinated the compilation of a country profile.

Botswana has its own Directorate on Corruption and Economic Crime, established in 1996. A recent review of policies, laws and institutional capacity to combat corruption in Botswana concluded that the legal and institutional frameworks for combating corruption are generally adequate.

Programmes and Projects: No information available.

Status: Botswana has an enviable reputation for good governance and is regarded as the least corrupt nation on the African continent. Of the 90 countries listed in Transparency International's *Corruption Perception Index 2000*, Botswana was ranked 25th in the world, significantly higher (i.e. less corrupt) than any other African country. Botswana also compares well with developing countries in other parts of the world. The *Country Risk Report* for 2000 published by the Economist Intelligence Unit rated Botswana as the seventh least risky country out of 93 "emerging market economies" surveyed.

But the review also notes that acts of fraud and losses of public funds and property have increased significantly over the last two decades, and that there is room for improvement in the administration of justice relating to cases of corruption. Carried out in conjunction with the newly formed Botswana Chapter of Transparency International, the review highlights the need for more openness about government programmes and activities, particularly with regard to implementation of plans and policies. It also calls on politicians to enunciate clear-cut policies related to corruption.

Capacity-Building, Education, Training and Awareness-Raising: The Government-controlled mass media have dominated Botswana since independence, but there is also an active private press, and recent liberalization of radio broadcasting regulations has allowed for the introduction of two new stations in Gaborone. The government-owned *Daily News* was started in 1964 as a two-page internal government newsletter, and has developed into the country's only daily newspaper, distributed free of charge countrywide. There are seven privately-owned national papers and four regional papers that come out weekly. Financial constraints have prohibited more frequent publication.

Radio Botswana, also owned by the government, has a wide audience and has been the main source of information to the population since 1966. It was recently restructured, breaking itself up into a public channel (RB1) and a semi-commercial channel (RB2). In May 1999, after 33 years of state monopoly, the government decided to liberalize radio broadcasting, and set up two new stations to broadcast within a 50 km radius of the capital, Gaborone. The country's first national TV station, Botswana TV (BTV), opened in July 2000. BTV is wholly owned by the government and is still finding its feet. Gaborone residents can also receive television broadcasts from Gaborone Broadcasting Company (GBC). Nationally, people can pay to receive digital satellite television, offering 23 TV channels worldwide.

Given the ruling party's overwhelming majority in parliament and the relative weakness of civil society organizations, the independent mass media in Botswana have a very important role to play as a public watchdog. While government is generally tolerant of the private media, there are areas where investigation is discouraged and this gives rise to the practice of self censorship. The constraints facing the private media, however, are probably just as much financial as they are political. As a key source of advertising revenue, government ministries and parastatals are strategically placed to influence privately owned news media.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

CHAPTER: INDUSTRY

Decision-Making: The Government is committed to implementing a range of policies aimed at economic diversification. The new Industrial Development Policy is a comprehensive agenda for promoting growth in competitive manufacturing and service industries. Parliament has recently approved the Privatization Policy for Botswana, which aims to improve efficiency in the delivery of services, to encourage direct foreign investment and to boost the citizen business sector.

The Government has also just reviewed its public procurement system, which will promote growth in the private sector by encouraging fair competition. In addition, a whole range of policies related to ownership, regulation and control of business are being reviewed to make them investor-friendly.

The government is currently considering proposals for increased private sector participation in air transport operations, which is expected to benefit other sectors of the economy, especially tourism, trade, commerce and investment.

The long-running Financial Assistance Policy (FAP) has recently been reviewed and restructured to run under a new agency, the Citizen Entrepreneurial Development Agency (CEDA). FAP will now run as a subsidized loan scheme instead of on the basis of grants. CEDA will be responsible for setting up a new venture capital fund and for administering the SMME scheme including a recapitalized micro credit component. CEDA has been earmarked considerable funds to enhance capacity for administering the various schemes effectively.

Programmes and Projects: See under **Status**.

Status: Over time, the government has set up a variety of schemes to support small, medium and micro enterprises (SMMEs) aimed at local entrepreneurs, in the hope that they will generate employment and income for others. In 1999 a policy framework for SMMEs was published and P150 million was made available for the micro-credit component of the scheme. Demand for the funds was overwhelming but the scheme had to be closed down as borrowers did not repay.

Capacity-Building, Education, Training and Awareness-Raising:

Information: No information available.

Research and Technologies: The use of environmentally sound technologies in production is essential for the protection of the environment. It is becoming clear that technologies that lead to less pollution save energy, use renewable resources, and recycle waste. While there is no apparent legislation to force manufacturing companies to use environmentally sound technologies, it is noteworthy that some companies, such as the can recycling plant, do protect the environment by recycling their waste products. The Ministry of Commerce and Industry encourages such efforts.

Financing: See under **Programmes and Projects**.

Cooperation: No information available.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: The Tourism Policy represents a recent example of Botswana's overall policy development to promote integrated land use planning and natural resources management.

Programmes and Projects: No information available.

Status: The Government recognizes tourism as the next potential engine of economic growth for the country. Currently tourism is almost entirely based on wildlife and the wilderness resource, and can occur in Wildlife Management Areas (WMA) and game ranches. Twelve of fourteen WMAs designated for commercial use are operational.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: Mapping and inventory of forested areas and their ecosystem's characteristics will be initiated. Information from this exercise will be used to determine the potential for the supply of timber products and other non-consumptive uses such as eco-tourism.

Research and Technologies: See under **Information**.

Financing: No information available.

Cooperation: No information available.

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