

4. BOTSWANA



4.1 Background

4.1.1 General

Area (in thousands) :	582 km ²	Population (in thousands) :	1,622
		Urban :	815
		Rural :	807
Main language :	English	Growth Rate:	1.9%/yr

4.1.2 Water Resources

Rainfall :	450 mm	Total water use:	
Renewable water resources :	18 km ³ /yr	Domestic :	5%
Total water withdrawals :	0.09 km ³ /yr	Industrial :	10%
=	98 m ³ /cap/yr	Agricultural :	85%

4.1.3 Health and Hygiene Education

Life expectancy :	47.4 yrs	Infant Mort Rate :	58 infant deaths/1000 live births
School health/hygiene education policy :	Yes	Child Mort. Rate :	107 child deaths/1000 live births
School curricula with health education :	100%		

4.2 Coverage

4.2.1 Current Coverage (in thousands)^a

Water Supply	Population	Pop. With House Connection	Pop. With Public Waterpoint	Population Served	Population Unserved	% Pop. Served
Urban water	815	494	111	815	0	100
Rural water	807	61	551	-	-	-
Total water	1,622	555	662	-	-	-

Sanitation	Population	Pop. With Public Sewer	Pop. With Other System	Population Served	Population Unserved	% Pop. Served
Urban sanitation	815	206	321	-	-	-
Rural sanitation	807	36	201	-	-	-
Total sanitation	1,622	242	522	-	-	-

4.2.2 Operational Aspects

Operations	% of total
Water systems providing intermittent supply	0
Water systems using disinfection	100
Rural water systems functioning	100
Treatment of wastewater from public sewers	95

Average availability of water in urban areas: 24 hrs/day



4.2.3 Water Quality

National drinking water quality standards exist and are the same as the WHO Guidelines. In general, drinking water quality is effective in urban systems and not effective in rural systems.

4.2.4 Population Projections (in thousands)

Population	1980	1990	2000	2010	2020	2030
Urban	-	530	815	-	-	-
Rural	-	746	807	-	-	-
Total	906	1,276	1,622	1,832	2,111	2,361

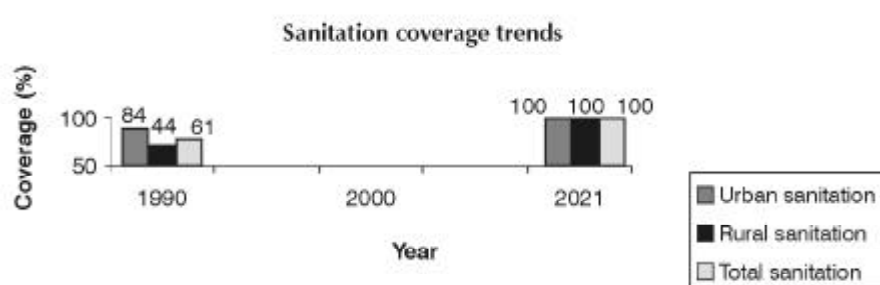
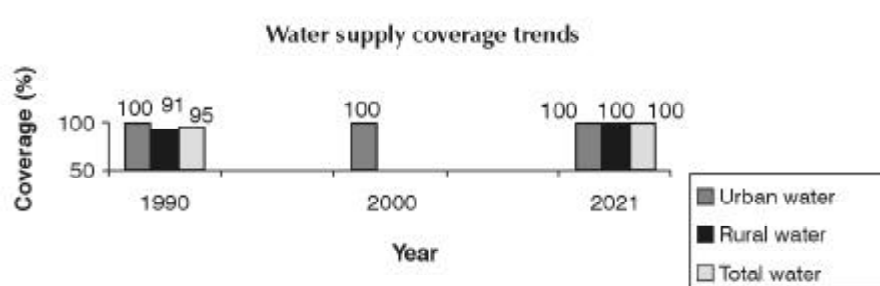
4.2.5 Coverage Trends (in thousands)

Year	Total Population	Population Served	Population Unserved	% Served
Urban water				
1980	-	-	-	-
1990	530	530	0	100
2000	815	815	0	100
Rural water				
1980	-	-	-	-
1990	746	679	67	91
2000	807	-	-	-
Total water				
1980	906	-	-	-
1990	1,276	1,209	67	95
2000	1,622	-	-	-
Urban sanitation				
1980	-	-	-	-
1990	530	445	85	84
2000	815	-	-	-
Rural sanitation				
1980	-	-	-	-
1990	746	328	418	44
2000	807	-	-	-
Total sanitation				
1980	906	-	-	-
1990	1,276	773	503	61
2000	1,622	-	-	-

4.2.6 Coverage Targets (in thousands)

Target Area	Target Pop. (Yr 2010)	% Served	Target Pop (Yr 2020)	% Served
Urban water	1,183	100	1,556	100
Rural water	967	100	1,092	100
Urban sanitation (sewerage)	1,183	100	1,556	100
Urban sanitation (other)	-	-	-	-
Rural sanitation	967	100	1,092	100





Coverage Trends

4.3 Largest City: Gaborone

Population (in thousands) :	133	Urban :	133 (100%)
		Informal settlements :	0 (0%)
Growth Rate			8%
Water Production			286 l/cap/day
Metering of connections			100%
Unaccounted for Water			20%
Water Disinfection			100%
Unacceptable Water Quality Tests			5%
Treatment of Wastewater from Public Sewers			100%

Water	Population Served (thousands)	Sanitation	Population Served (thousands)
House connections	57	Public sewers	43
Yard taps	2	Septic tanks	1
Public standpipes	74	Wet latrines	4
Boreholes with handpumps	-	VIP latrines	79
Other	-	Simple pit latrines	1
Total served	133	Others	3
Total unserved	0	Total served	132
		Total unserved	1



4.4 Costs and Investments

4.4.1 Costs and Tariffs (US\$/m3)

Average water production cost	NMF
Average water tariff	NMF
Average sewage tariff	-

4.4.2 User Charges (US\$/month)

Water Supply	Average Charge	Sanitation	Average Charge
House connections	NMF	Sewerage	-
Other public systems	-	On-site disposal	-

4.4.3 Construction Costs (US\$/capita)

Water Supply	Cost	Sanitation	Cost
Piped systems with houseconnections	36	Sewerage with house connections	409
Public standposts	33	Small bore sewers	-
Boreholes with handpumps	NMF	Septic tank	-
Protected dug wells	200	Wet latrines	-
Rainwater collection	100	VIP latrines	NMF
		Simple pit latrines	-

4.4.4 Sources of Investment (1000 US\$)

Service Area	National Funds	External Funds	Total
Urban water	162	-	162
Rural water	45	-	45
Urban sanitation	56	-	56
Rural sanitation	16	15	31
Total	279	15	294

Government allocation to sector over 1990-1999: 7% of national development expenditure

4.5 Policy, Planning and Institutions

4.5.1 Water Supply and Sanitation Policy

The national water master plan is a single major policy tool of the 1990s. The major objectives of the plan are concerned with:

- The estimation of the water demands for all sectors of the community throughout the country over a period of 30 years (1990-2021).
- The determination of the availability and development potential of the water resources that are available within the country to meet these demands.
- The determination of the optimum water resources development programs and policies and the identification of their associated financial resources requirements, institutional manpower, legal requirements and the environmental and social impacts.

With regard to sanitation, the government of Botswana provides sanitation services with the aim of improving the general public health conditions of Botswana. Unlike the water sector development, there is currently no sanitation master plan. However this is being rigorously addressed during the national development plan 8. A major step in this line has been the development of a Waste Management Bill of 1998 through which a sanitation and waste management department will be established.

4.5.2 National Water Supply and Sanitation Plan: Yes (Year 1999)



4.5.3 Key Sector Institutions:

Urban Water

Water Utilities Corporation

Rural Water

Department of Water Affairs

Urban Sanitation

Ministry of Local Government, Lands and Housing

Rural Sanitation

Local Authorities

4.5.4 External Support Organizations

WHO, UNICEF, UNDP and SIDA

4.6 Collaboration and Coordination

At local level, a new department responsible for water and wastewater has been established. At the central level, the Ministry of Local Government Lands and Housing is involved in developing the Waste Management Act, the Waste Management Strategy and resource conservation programs with assistance from the German Agency for technical cooperation. These developments have been undertaken as a clear recognition of the ever increasing demands of the sanitation sector. The latest and most significant government directed development is the establishment of a sanitation and waste management department within the Ministry of Local Government, Lands and Housing and to revive the inter-ministerial water and sanitation committee. A consultation forum for external support agencies is retained as a solution to improve coordination of resources as well as discuss country needs for services in the sector.

4.7 New Approaches

Pollution studies have been carried out to protect water resources and guidelines have been put into place. Environmental impact assessment for development projects is carried out to implement projects which are environmentally friendly.

Box 1

Action on the AFRICA 2000 Initiative

AFRICA 2000 was launched in Botswana on 1996 by the Ministry of Health. The National Focal Point designated is the Head of the Environmental Health Unit. WHO provided a facilitator for the launching of the AFRICA 2000 Initiative and assisted with the organisation of the follow-up activities by supplying resource material and manuals for training officers on Participatory Hygiene and Sanitation Transformation (PHAST).

Box 2

Achievements on the PHAST Initiative

A pilot project was conducted in Dikayeba village which resulted in community, NGO, external support agency commitments and formation of internal network (collaborative team), action plan, advocacy workshops, plans for Monitoring and Evaluation and additional training on PHAST.

4.8 Major Constraints to Sector Development

- Funding limitations
- Inadequate water resources
- Inadequate cost-recovery framework
- Insufficiency of trained personnel
- Logistics
- Rapid demand increase



4.9 Contact Person/Agency for Further Information

4.9.1 Country-Level WHO Contacts

1. Agency : WHO Botswana
Person : G.L. Mosweunyane
Address : P.O. Box 1355 Gaborone Botswana
Telephone No : 267 581853
Fax No : 267 359483
E-mail : Moswe@mega.bw

4.9.2 Government, Multilateral or Bilateral Agency Contacts

1. Agency : Ministry of Health
Person : Mrs. T. Ramokate
Address : P/Bag 00268 Gaborone Botswana
Telephone No : 267 581850
Fax No : 267 581849
E-mail : C/O Moswe@mega.bw
2. Agency : Department of Water Affairs
Person : Mrs. B. Mathangwane
Address : P/Bag 0029 Gaborone Botswana
Telephone No : 267 3607424
Fax No : 267 301981
E-mail : C/O bmathangwane@gov.bw
3. UNICEF
Person : P.N. Matome
Address : P. O. Box 20678 Gaborone Botswana
Telephone No : 267 351909
Fax No : 267 351 233
E-mail : PMatome@UNICEF.Org

Note: (-) = No data provided; NMF = No Meaningful Figure

^aSource: All data except population with house connection, public water point, public sewers & other system = 1999 WHO Headquarter; Pop with house connection, public water point, public sewers & other system = Questionnaire JMP (1999).

