

Geography

Botswana

The main physical characteristics of Botswana are that it is a large, landlocked, flat, arid, and sparsely (1.7 million) and unevenly populated country, occupying just over 585 370 km² (Plate 1). The Tropic of Capricorn passes through Botswana and the northern part lies within the tropics. It shares borders with South Africa, Zimbabwe, Namibia, and Zambia, although its border with the latter is a matter of dispute involving the location of a point in the Zambezi River. With the arguable exception of the latter this means that since independence in 1966 Botswana has been landlocked. In the north, the Okavango Delta (Figure 2) represents a significant natural feature in Botswana.

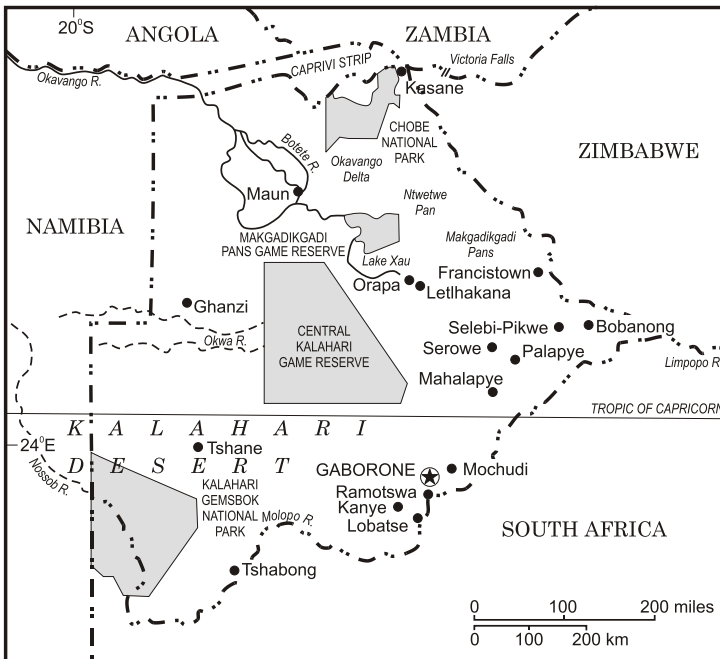


Figure 2: Generalised map of Botswana, showing the location of the major conservation areas.

The delta, a RAMSAR convention wetland, receives water in the dry season, when the wet season rains from southern Angola finally reach Botswana. This enables the delta and its surrounding rangelands to support large herds of indigenous herbivores. Wild herbivores currently occupy the delta at a density of approximately 10100 kg/km², with elephant and impala contributing more than 60% of total biomass. In the south west, the large, arid Kalahari sandy desert dominates the landscape. Some 17% of the total surface area of Botswana is conserved in National Parks, with a further 10% managed as Wildlife Management Areas, making Botswana one of the best conserved countries in the world. With an estimated elephant population of 90000, it is anticipated that serious environmental damage will occur in the next decade if no significant effort is made to reduce elephant numbers. Botswana is primarily a beef producer, having achieved significant benefit from the terms of the Lome Convention of 1977, which provided Botswana with beef quotas to the United Kingdom. Although these quotas have never been fully used, Botswana Meat Company continues to export approximately 200000 beef carcasses per annum. Botswana experiences periodic droughts, as well as sand storms from the seasonal August winds which blow from the west. The most crucial environmental issues in Botswana are rangeland degradation from overgrazing and desertification. Botswana is a signatory on the UN Conventions on Biodiversity, Climate Change, Desertification and RAMSAR. With the exception of the Delta, there are serious limitations to fresh water resources. This has resulted in pressure to drain the Delta, and to use deep boring technology to harvest groundwater. Both these approaches have serious environmental impacts.

Namibia (Sweet and Burke, 1999)

The country occupies 824290 km² (Figure 3) and comprises three main physiographic regions (Plate 1). The first is the western coastal plain of the Namib desert, occupying 12% of the total area, the second is the central plateau stretching from the southern to the northern border and covering more than half the country, and the third is the semi-arid Kalahari zone lying along most of the eastern portion of the country (Isaacson, 1995).

The western coastal plains are largely composed of mobile dunes and gravel and sandy plains. The central plateau comprises mountains, highland areas and the Great Western Escarpment. The Kalahari zone is covered by sand of varying depths.



Figure 3: Generalised map of Namibia, showing the location of the major towns and cities.

South Africa

The total land area is 1 223 201 km², excluding Lesotho and Swaziland. The Great Escarpment and the Drakensberg mountains provide the physical barriers which largely determine the climate and vegetation of much of the livestock growing regions of South Africa

(Plate 1). The combination of moderate to high rainfall and high elevation associated with these features means that the largest area of native grasslands occur here. In geological time, several phases of uplifting, erosion and deposition have created complex landforms determined by the underlying geology. The country comprises five main physiographic regions. The first is the south western fold mountains, which influence the climate and vegetation patterns of the southern Cape. The second is the coastal plain, which extends from the Namibian border, all along the coast to southern Mozambique. This narrow plain between the ocean and the Great Escarpment is the region with the most fertile soils, moderate to high rainfall and where most intensive livestock production occurs. The Great Escarpment, which forms the major barrier to moisture reaching the interior, together with the central highveld, contains most of the high elevation grasslands. The major urban, mining and agricultural activities take place in the central highveld, which is situated at 1600-1700m. The great Karoo basin occurs from 1400 -1600m and contains the steppe-type vegetation associated with fertile aridosols of the semi-arid region. The Kalahari region, bordering on Namibia and Botswana, also represents a very important extensive livestock producing area. The region is the southern part of the continental scale basin which is covered by sands of varying depth (sometimes >200m). Deep boring technology has enabled commercial graziers to become permanently established in the region, and to optimise livestock production off arid grasslands. The vegetation is an arid savanna, with a carrying capacity of 30-40 ha per LSU. South Africa, like much of Africa, is characterized by a high interior plateau surrounded on three sides by the Great Escarpment and the Drakensberg mountains, which provide the physical barriers which largely determine the climate and vegetation. The plateau is intruded by several mountain massifs, with the highlands of Lesotho exceeding 3000m in places. The northern and western sections of the plateau contain two large basins, namely the Kalahari and Transvaal Bushveld. (Partridge 1997). Between the Great Escarpment and the ocean lies a coastal plinth which varies in width from 50-200km. This plinth is incised by deep riverine gorges.

Lesotho

Completely surrounded by South Africa, Lesotho is a small, mountainous kingdom made up of the Drakensberg and Maloti ranges. Lesotho is home to the Basotho people, and its capital city (and only major centre) is Maseru. Lesotho covers an area of 30,355 km² (Figure 4).

The borders of the country with South Africa are mostly natural. The north-western border is the Mokhare (Caledon) River, and the eastern border is defined by the rugged escarpment of the Drakensberg. Much of the southern border is formed by high country. Lesotho has the highest lowest point of any country, with all points in the country being higher than 1000 m above sea level. Peaks in the central ranges and on the escarpment reach over 3000 metres, with the highest peak being Thabana-Ntlenyana (3482 m) near the Sani Pass.

The Lesotho Highlands Water Project is an important project, with the immense Katse Dam as the major appeal. Lesotho's only national park, the Sehlabathebe National Park gives a fantastic sense of

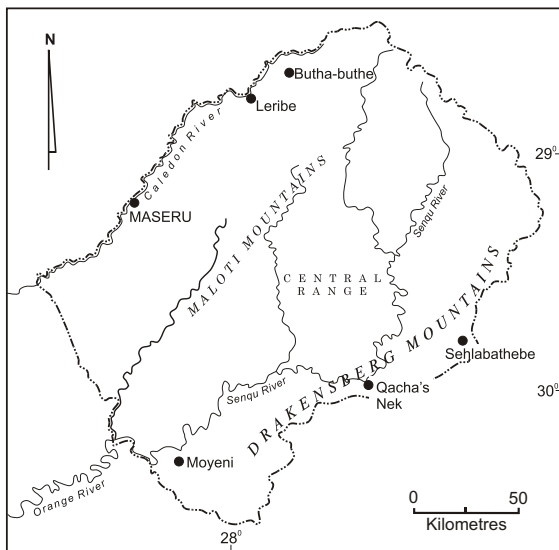


Figure 4 : Lesotho : towns and major physical features.

separation from the rest of the world, and the opportunity to see the endangered Bearded and Cape vultures.

Swaziland

Swaziland is one of the few remaining African monarchies, and is the smallest country in the southern hemisphere. It shares its borders with South Africa and Mozambique. Swaziland covers an area of 17,363 km² (Figure 5).

It has a wide range of ecological zones, ranging from rainforest to savanna scrub. The western part of the country is highveld, consisting mainly of short, sharp mountains. The middleveld of the central country is where most of the population live. The eastern part of the country is lowveld, and due to the malaria risk is sparsely populated, however it is

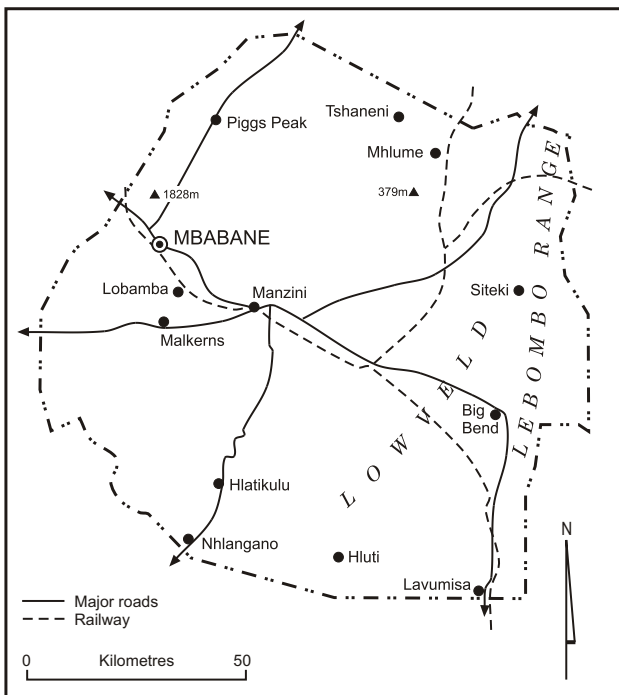


Figure 5 : Swaziland

the home to many sugar cane estates. The Lebombo mountains form the eastern border with Mozambique.

One of the largest conservation areas, the Mkhaya game reserve (which gets its name from the mkhaya tree or knobthorn (*Acacia nigrescens*) is a popular destination. Guided walks, game drives, horse-riding and white water rafting are all offered. The reserve started as a breeding programme for the indigenous Nguni cattle. Due to centuries of natural selection, these cattle are heat tolerant, disease immune, self-sufficient and tick resistant. They are highly prized by the Nguni tribes, and the running costs of Mkhaya are provided for by the sale of these cattle.

Throughout the country, both within game reserves and on state land, there are countless tracks, so exploration of the country on foot is a possibility. There are a number of other parks and reserves to visit, including Mlilwane Wildlife sanctuary and Hlane Royal National Park. With zebra, giraffe, and many antelope and bird species, as well as hippo and crocodile, these parks have a good range of wildlife.

Zimbabwe

Like Botswana, Zimbabwe is a landlocked country covering an area of 390 759 km². (Figure 6). Its neighbouring countries are South Africa, Namibia, Botswana, Zambia and Mozambique. The major landforms include the mountainous region of the Eastern Highlands and the Great Dyke, an area of upliftment which runs from the south-west to the north east across the central portion of the country. The northern areas are characterised by the Great Escarpment which descends to the Zambezi River valley.

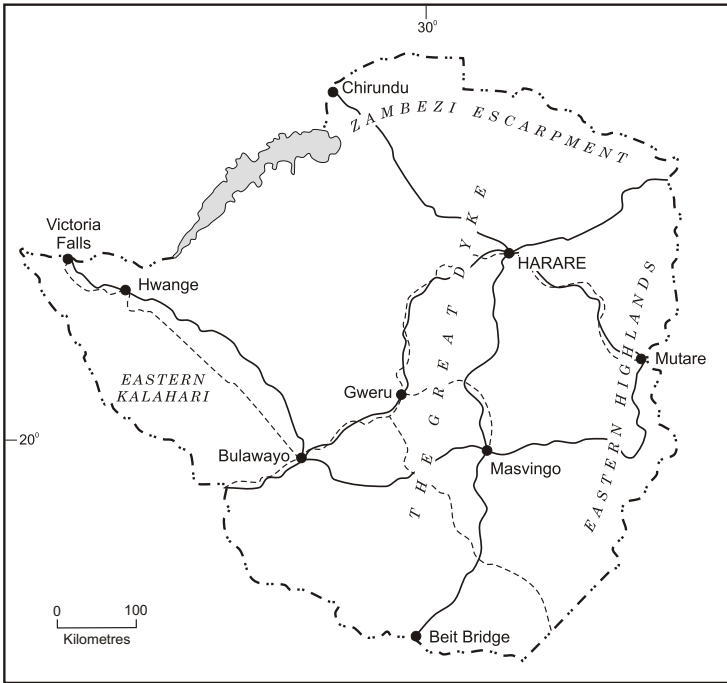


Figure 6 : Zimbabwe : some towns and major physical features.