GLOBAL GEOSPATIAL MANAGEMENT INFORMATION

SEOUL, KOREA

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COUNTRY REPORT - REPUBLIC OF BOTSWANA

1. **INTRODUCTION**

1.1.**SOCIAL, ECONOMIC AND POLITICAL BACKGROUND**

Botswana attained independence in 1966 after being a British Protectorate. Botswana was at the time one of the poorest and least developed countries in the world. The majority of her population was heavily dependent on land as a source of livelihood - agriculture, mainly arable and pastoral farming. The government depended on foreign aid for its development projects and providing the desperately needed social services such as water, health, education, and other support services.

The agriculture sector, especially the cattle industry, was at independence the major contributor to the Gross Domestic Product. The dominance of agriculture in the economy diminished as other sectors such as mining emerged. Following the discovery of diamonds since the early 1970s, Botswana's economy was transformed.

The population is estimated to have grown to about 2.0 million in 2011.

1.0 LAND TENURE

Botswana has a total land area of 582 000 km^2. This land is divided into three categories viz; Tribal Land (72%), State Land (23%) and Freehold Land (5%). These categories were inherited from the British rule except that they were then called Native Land, Crown Land and Freehold Land respectively. Most of the people were and still are residents on Tribal Land. Tribal land was administered by the Chiefs of the respective areas.

1.1 TRIBAL LAND

Botswana government saw the need to give urgent attention to the land Administration and management of customary land. Tribal land was the main source of livelihood for the majority of the population and it was imperative that the administration of this land be well guided to secure and sustain these livelihoods. The government decided to put in place structures, in the form of laws, institutions and policies that would improve the management of customary land.

LEGAL REFORMS

The government enacted the Tribal Land Act in 1968. This law established new institutions for administering Tribal Land. The act provided for the establishment of the Land Boards; gave the land Board its corporate personality and power to do anything necessary to discharge its functions;

vested all the rights and title to land in each tribal area in the Land Board; transferred to the Land Board all the powers that were vested in the Chief under customary law in relation to land; and defined its powers and duties. The Land Boards took over the administration of land from the Chiefs.

INSTITUTIONAL REFORMS

The establishment of the Land Boards was intended to:
- improve customary land administration;
- ensure that emerging economic opportunities are adequately catered for in the Botswana's land management system;
- create capacity for handling the demanding and complex land use issues emanating from the new economic opportunities and
- democratize tribal land administration.

At present, there are twelve main and forty subordinate Land Boards. The area of jurisdiction for each land board follows the boundaries of the Tribal Territories. The duties and responsibilities of these institutions, as outlined in the Act include:
- land allocation;
- imposing restrictions on the use of land;
- cancellation of land rights;
- authorization of land use and transfer of land rights and
- Consideration of land disputes and appeals.

The Land Boards started functioning in 1970 and they allocate land for a wider range of land uses than the chiefs did. They allocate land for residential; industrial; commercial; civic and community; arable fields; commercial livestock and game ranches; commercial arable farms; tourist camps and lodges, etc. they grant right under both customary and common law.

1.2. STATE LAND

State Land is administered under State Land Act (1966) which empowers the President of Botswana to make and execute grants of any state land or of any interest therein. The President has however delegated these powers to the minister responsible for land matters. In urban areas, land rights are granted under ninety nine years Fixed Period State (FPSG) for residential, and fifty years for commercial and industrial purposes.

In rural areas State Land is zoned into game Reserves; National Parks; Wildlife Management Areas (WMAs) and commercial ranches for livestock and game farming. The WMAs have been subdivided into Concession Areas that are leased out to tourist related commercial activities. State Land is administered by the Department of Lands.

1.3. <u>FREEHOLD LAND</u>

Freehold Land, which is mainly farms, is administered under the Land Control Act which was enacted in 1975. This Act provides for the control of transactions in agricultural land.

These farms are found in blocks, viz: Gantsi, Molopo, Tuli Block, South East and North East. Freehold has been reduced as it has been bought to extend state land and smaller districts.

The latest trend is that freehold farms near urban areas are being gradually converted to urban land use such as residential, commercial, industrial, etc. these conversions are controlled by Town and Country Planning Act (1977). This Act is also used to control the development of Land in urban areas and settlements declared planning areas.

2.0 <u>REGISTRATION AND TRANSFER OF LAND RIGHTS</u>

Registration of rights in state land, as well as common law leases in Tribal Land, is done by the Deeds Registry. Problems identified are that: records are not computerized and retrieving information is difficult; registration process is perceived by the public to be time consuming and expensive.

Registration of customary land rights are done by the Land Boards. Records of allocations are not kept in a properly organized manner and are mostly manual paper records. This has led, in some instances, to multiple allocations (overlapping rights) that cost the Land Boards a lot of money and time to resolve. This has also been found to have contributed to a slow land delivery process and long transaction in cases when land rights are transferred.

There is also poor monitoring of development covenants for both state and tribal land.

3.0 <u>LAND ADMINISTRATION DEVELOPMENTS</u>

A number of attempts had been made to introduce electronic systems for the management of land information in Botswana. Some of these systems are;

LYNSYS
The Land Inventory for Tribal land Boards of Botswana (LYNSIS) was one of the earliest systems. However, this inventorying system was never fully utilized due to lack of capacity to use the system.

BLIS
In the mid 1990s, the Botswana Land Integrated System (BLIS) was developed and introduced to help the department of Lands to improve land allocation management,

including waiting list information for state land plot allocation. BLIS did not allow for the input of spatial data, and it was difficult to link plots already allocated to their owners. After finding that it was not meeting its intended business objective it was decided that it needed to be replaced.

SLIMS

The State Land Information Management System (SLIMS) was developed in 2002. Information from BLIS was transferred to SLIMS and the missing data was collected and uploaded into the system. SLIMS was expected to help in the allocation of plots and to assist in the management of state land. It aimed to interface with the systems in the Deeds registry, the Department of Surveys and Mapping, Botswana Housing Corporation and the Department of Town and Regional planning.

TLIMS

The Tribal Land Information Management System (TLIMS) was also developed in 2002. The aim of the system was to enable the Land Boards to process applications and be able to manage tribal land electronically. Functionalities included land use planning; processing plot divisions; sub leasing/sub letting; control and compliance monitoring; acquisition and compensation; and adjudication. It was also intended to facilitate data sharing between various Land Boards and Sub Land Boards as well as other Government departments. It was hoped that it would have links to revenue applications and GIS applications. TLIMS was also expected to interface with paper records, including the location of applications, certificates and correspondences. Only about 10% of all the records of land parcels that had been allocated were reconciled.

Botswana National Spatial Data Infrastructure (SDI)

The aim of the project was to ensure geographic information users are provided with quality information through the distribution of different data through the metadata and also to put emphasis on data sharing. This could only be possible if data producers work according to agreed standards.

Of utmost importance for the NSDI initiative was the Master Plan, this was to be used as a reference document and action plan for the implementation of NSDI. Although the Master Plan was never implemented, the NSDI is being implemented as a component under LAPCAS project, which is described below.

INTEGRATED GIS (IGIS)

The aim of the project was to integrate the three databases, being; Topographic, Geodetic and Cadastral databases as outlined below:

> **Topographic Database -** Topographic Data Model and Topographic Workflows have been developed. These have improved the production of medium and large-scale mapping. Over 700 digital maps at scale 1:50,000 covering eastern and western part of Botswana and large scale (1:5000) mapping of over 80 villages has been captured and uploaded in the geodatabase. Also available in the digital form are the following;

- 1:80,000 scale Aerial Photography covering the entire country 2001/2.
- Digital Orthophotomaps 1:10,000 – 1:100,000 covering the entire country – based on 2001/2002 Aerial Photography.
- Digital skeletal line mapping designed for 1:50,000 scales covering the entire country.
- Over 700 medium scale and 80 digital large scale line mapping
- 1:1 million digital map of Botswana.
- 2006/7 Digital Colour Aerial Photography for 100 settlements
- Digital orthophotomaps for 100 settlements
- Land cover Mapping dataset for Chobe and Ngamiland districts
- Election Mapping. (57 Constituencies and 400 wards)

Print on Demand

A Print on demand system is now in place for customers wishing to place orders on areas of their choice including a dissemination system ((www.dsmportal.gov.bw) that has been developed mainly to disseminate DSM digital products through a web enabled Geographic Information system based upon ESRI software. In addition an Orthomanager system was developed, to make it possible to order, monitor and disseminate digital aerial photographs. The system also stores the black and white one meter resolution Orthophotos for the entire country including the digital elevation models. Orthophotos are selected and delivered to the customer in either Tiff or ECW format.

Geodetic Database – The Geodetic Information System was developed by having all control points used for mapping and property surveys stored in a digital format that is readily available to both internal and external (Private Surveyors) customers. This has increased and greatly improved service delivery. All new topographic maps are now based on the Botswana National Geodetic Reference Framework 2002 (BNGRS02) based on WGS 84.

Currently a project on the establishment of Continuous Operating Reference Stations (CORS) is being undertaken.

Cadastral Information System (CIS)

The digital Cadastral Information System was developed, entailing all surveyed properties/plots for freehold, state and tribal land and stored on the database for fast retrieval. Its aim was to handle the integrated cadastral information and be accessible by users outside DSM through a dissemination system. To date over 100,000 lots in the capital City of Botswana, Gaborone and some settlements have been captured on the system. Currently the CIS system is not functional efforts are underway to review the CIS system.

LAPCAS

The Land Administration, Procedures and Capacity Building (LAPCAS) is a ministerial project which is a joint venture between Botswana Government represented by Ministry of Lands and Housing and Swedish International Development Agency (Sida). The purpose of the project is to improve on land administration especially Tribal Land and to build capacity in the management of this scarce resource. It intends to: resolve current land problems, record all rights in maps, make unclaimed land available and develop relevant capacity. During its implementation, the project will where feasible have links to already existing land administration systems.

There are seven components within LAPCAS;
i) National reference Systems for Land Parcels and addresses.
ii) Improved land Administration process.
iii) Deeds register computerization.
iv) Systematic adjudication on tribal land.
v) IT operations and maintenance organization.
vi) Information exchange and dissemination.
vii) Training and study trips.

These components are being piloted in different areas and will be rolled out to the rest of the country.

e-GOVERNMENT PROGRAMME.

The Government of Botswana has embarked upon an e-Government strategy which aims at transforming Botswana by reviewing and redesigning the governance required to effectively provide access and delivery of government information and services using modern day information technology. 14 Cluster has been established and Ministry of Lands and Housing was assigned to coordinate the GIS Cluster which aims at promoting the information exchange amongst stakeholders, minimize duplication of effort within government and provide guidance in the planning and management of information. Currently the awareness campaigns on the e-Government strategy is ongoing.

4.0 <u>CONCLUSION</u>

Because of the pivotal role land plays in human activities, there will always be challenges. If the capacity of organizations dealing with land management including mapping agencies can be improved, Botswana would be in a better position to handle land administration challenges.