Botswana

State of Land Information in Botswana

An Open Data Assessment

land portal

About the State of Land Information (SOLI) reports

The **State of Land Information** (**SOLI**) research and reports seek to provide an overview of available government data and information on key land issues. The aim of the research is to uncover the many different sources of land data and information at the country-level and help to identify data and information gaps. The research also provides a technical assessment against open data criteria derived from international standards. The reports establish a baseline for targeted interventions to improve the information ecosystem. The Land Portal has published SOLI reports for Zambia, South Africa, Uganda, South Sudan, Tanzania, Kenya, Senegal, Namibia and Malawi. We aim to develop SOLI reports for a dozen countries in Africa by 2024.

Though SOLI reports are independent research products, they may also serve as the first step in the implementation of the Open Up Guide for Land Governance. The Open Up Guide for Land Governance is a tool for national and local government agencies with a mandate for or an interest in making their land governance data open and available for others to re-use. The Open Up Guide is the result of a collaboration between the Land Portal Foundation and Open Data Charter.

About the Land Portal

The **Land Portal Foundation** was established to create, curate and disseminate land governance information by fostering an inclusive, open, and accessible data ecosystem. Over the last decade, the Land Portal has evolved from a simple information gateway to become a knowledge broker, a resource base, a vibrant online community of users and a trusted voice within global land governance.

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Introduction

Why Open Data

Good land governance is critical, if equitable economic growth, sustainable development, and food security are to be achieved globally. Land information is a powerful enabler for achieving a vision of a land governance system that benefits those with insecure land rights and the greatest vulnerability to landlessness. However, information sources on land data remain highly fragmented, unstructured and do not present the full range of perspectives needed for decision making. Land governance, being the laws, processes, and institutions that regulate how decisions concerning land access and usage are made, how those decisions are implemented and enforced, and how conflicting land interests are managed, requires the best possible land data and information. Until policy makers, intermediaries, and grassroots groups have access to the data and information they need for improved land governance, any initiatives (programs, policies, campaigns) will fail to achieve maximum impact.

The pervasive nature of data in society requires that access to data should adhere to the **FAIR**[1] principles to power development, service delivery and innovation while holding governments accountable (European Commission, Directorate-General for Research and Innovation, 2018), (Reinsel et al., 2018), (Government of the United Kingdom, 2021). Data adhering to the FAIR principles requires the opening up of government data for improved transparency (Dinah et al., 2019). Opening up data in the context of changing social, economic, and environmental conditions in Botswana includes the realization that land management in national development is inextricably linked to the governance of land data. The modern land management paradigm sees land and data governance as important not only for the democratic process (Borras & Franco, 2010) as a whole, but also as the "*cornerstone for creating economic development, social coherence and environmental sustainability*" (Enemark, 2004). Botswana is part of the global effort to improve open access to information as promoted by the Sustainable Development Goals (UNESCO, 2019).

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1   **https://www.go-fair.org/fair-principles/**

Botswana has included data for planning and decision making as a strategic priority area in its development framework (**The Government of Botswana and United Nations Sustainable Development Framework 2017 – 2021, 2017**). With the goal of becoming a more developed country, Botswana must rely on land as an empowering instrument for its people, economy, and future as a fixed and appreciating production input and a way of establishing communities with diverse objectives.

Global Indices

Botswana has recognized that access to data and information is crucial for planning and decision making, but **this has not yet been fully translated into practice**[2]. Botswana scored a 1 (out of 100) for the openness of its land data and ranks 84th out of 110 countries in the **2022 Global Data Barometer**[3] (GDB) survey. This survey assesses the openness of three categories of land data and information namely: **land tenure**, **land use** and **uses of data for policy making**. The **2020-2021 Open Data Inventory (ODIN)**,[4] measures how complete a county's statistical data is and whether it meets international standards of openness, and Botswana scored 47 (out of 100). In the most recent (2016/2017) **Global Open Data Index**,[5] Botswana scored 30% for the openness of its National Statistics and 0% for land ownership data while the same survey scored land ownership data at 0%. A more detailed review of the GDB survey revealed that Botswana scores significantly higher in other open data categories such as "*digital skills (45),*" "*use of digital tools (33)*" and "*use of standards in statistics (40).*"

Objectives of the Report

The aim of this report is to serve as a diagnostic for the land information ecosystem in Botswana and enable targeted interventions for improved information management. The first section describes Botswana's legal framework for data governance and examines its international and national commitments to access to information, as well as the instruments for data and information governance.

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2   **https://www.statsbots.org.bw/sites/default/files/publications/Botswana%20Data%20Quality%20Assessment%20Framework%20Users%20Manual.pdf**
3   **https://globaldatabarometer.org/results/**
4   **https://odin.opendatawatch.com/**
5   **https://index.okfn.org/**

This section provides a summary of Botswana's legal framework for opening up information. Good data governance ensures transparency about the purpose for which information is collected, stored and disseminated.

The second section, "*Availability of Land Data and Information*" examines the available land data and information in Botswana provided by the government organizations responsible for land administration. This overview is organized according to six key land data categories **(Table 1)**. The third section evaluates the "*openness*" of this information, by assessing it against 10 criteria for open data, as used by international best practice **(Table 2)**.

Table 1: Land Data Categories

CATEGORY 1: **LEGAL AND POLICY DATA AND INFORMATION**	The availability of data and information on laws, policies, rules, regulations, processes and procedures regarding land and data governance across all data categories.
CATEGORY 2: **LAND TENURE DATA AND INFORMATION**	Data and information on the relationships that individuals and groups have with respect to land and related resources and their allocation; cadastral information (formal, informal, customary/indigenous) including the legal survey records to determine parcel boundaries; the creation of new properties or alteration of existing properties; and transfer of properties though sale, lease or mortgaging.
CATEGORY 3: **LAND USE DATA AND INFORMATION**	The available data and information related to control of land use; including zoning, enforcement of land uses, public land use at the national, regional, and local level that is available in the country.
CATEGORY 4: **LAND DEVELOPMENT DATA AND INFORMATION**	An overview of the available land data and information relating to the building of new physical infrastructure and utilities; the implementation of construction planning; public acquisition of land; expropriation; change of land use through granting of planning permissions, and building and land-use permits; and the distribution of development costs.
CATEGORY 5: **LAND VALUE DATA AND INFORMATION**	Available land data and information on the assessment of the value of land and properties; the calculation and gathering of revenues through taxation; and the management and adjudication of land valuation and taxation disputes and land markets.
CATEGORY 6: **OTHER LAND DATA AND INFORMATION**	This category may vary according to country specific context, but may include data and information relating to mineral resources, infrastructure, agricultural census data, socio economic census and survey data, public asset data, public procurement data, beneficial ownership data and other key data sets for resilience and climate change.

It is important to note that this research does not attempt to quantify or assess the quality of the data, or make a determination of what constitutes the "*best*" data, beyond it being open. Data users are best placed to determine what they are looking for in the data, what they wish to use the data for, and make their own determination as to how appropriate the data is for their needs.

Table 2: Open Data Assessment Criteria

	ONLINE		STANDARDS
	ACCESSIBLE		DOWNLOADABLE
	FREE		OPEN LICENCE
	TIMELY		MACHINE READABLE
	METADATA		UNIFORM RESOURCE IDENTIFIERS

Methodology

This SOLI report refers to the Modern Land Administration Theory as a conceptual framework. The theory (Williamson et al., 2010) states that land administration agencies should support sustainable development by contributing to a more integrated information system across government sectors. It prioritizes an information environment that supports managing land and associated resources to respond to national and global imperatives such as poverty reduction, sustainable agriculture, sustainable settlements, economic development and conflict management. Therefore, the information needed for governance of land must include data on the core land administration functions: land tenure, land use, land value, and land development. Legal and policy information on land governance as well as other relevant land data and information are also considered. For each of the six categories, this report identifies key information sources and assesses whether the land-related data and information were readily available, timely, standardized, and openly licensed. Inputs on this categorization and methodology are welcomed to continuously improve the process.

The report prioritizes government data and the public sector as the primary producers of land data, while recognising that many other actors may play a role in the production of data. It has become clear that, in terms of land governance, the government is the primary custodian of land data. This assessment is based on the typical land administration functions of a well-operating system, and presupposes that government departments are able to function as an integrated whole for the purposes of planning and sustainable development.

The SOLI research team comprised local and international researchers. Additional stakeholder interviews were conducted to complement and validate the desktop research. However, the data landscape is not static and is constantly in flux. This document must be understood as providing a unique temporal baseline.

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Dataset as the Unit of Analysis

The "*dataset*" is the primary unit of analysis. It is a structured collection of information, including statistical data, bibliographic data, spatial data and multimedia contents.
For example, a dataset can list property ownership and boundaries details, or contain statistical information about the number of women land owners. It can also be a bibliographic database of publications on a certain topic of land governance. The focus is on government datasets produced as part of ongoing functions, not project data, which entities (donor, private, NGO) might create using data about a specific issue for single use, but which might not be supported on an ongoing basis. As not all information about the information landscape is measurable in numbers or captured in a dataset, other types of data are included, such as individual publications, websites, or a specific law or legislation (or even certain aspects within those documents).

Usefulness of the Report

This SOLI Report is intended as a tool for any party that is interested in land data governance work that requires access to data and information. Researchers may use this report to identify gaps in information and identify research priorities accordingly. A land practitioner working at the global level may use the information sources as a basis to monitor land governance performance against international indicators.

Data Governance in Botswana

This report defines land data governance as the legal, policy and management principles that inform the equitable and ethical collection, use and dissemination of data. This section focuses primarily on the collection, use and dissemination of land data and information at the national level.

Access to government data and information by the public is not easy (Balule & Dambe, 2018). The government has made an effort to stimulate discussion and develop an **open data programme for Botswana**.[6] However commendable these initiatives are, they fall short of a comprehensive national strategy to develop structured open data for Botswana. Botswana is closing the digital divide with internet penetration at 61% and increasing at 8% per year while mobile connectivity is at 137% of the population (Kemp, 2022).

Legal Framework on Access to Information

Botswana's Constitution[7] guarantees freedom of expression, freedom of the press and privacy in the home, but efforts to constitutionally protect citizens' rights to privacy in communication (such as mobile phones) and access to information held by state authorities have made little progress. Parliament approved the **Data Protection Act on August 3, 2018**[8] and it is currently on notice, pending commencement. There is no access to information law in Botswana. With considerable support from civil society, a **private member's bill for information freedom**[9] was launched in 2010 to secure the public and media's right to access information stored by public bodies at all levels. However, the bill was withdrawn on the grounds that the administration was developing a similar law, and neither version has since been debated in Parliament (MISA, 2022).

The Constitution provides for the right to receive information (Section 12{1}), but it has been argued that this provision ensures only a passive right (rights that regulate the actions of others) to information (Balule & Dambe, 2018).

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6   See the e-Government and the Botswana Innovation Hub (BIH) (cf. August 2013 Botswana Innovation Hub day seminar on Open Data), as well as the subsequent World Bank consultation (Open Data Assessment for Botswana, 2014) at **https://www.worldbank.org/content/dam/Worldbank/Brief/TAI/ODRAPreparationBrief.pdf**

7   **https://www.parliament.gov.bw/images/constitution.pdf**

8   **https://www.bocra.org.bw/sites/default/files/documents/DataProtectionAct.pdf**

9   **https://www.humanrightsinitiative.org/programs/ACT/Botswana/BotswanaFOIBillPvtmmbr-prelimcritique-Mar11-Delhi-VenkatN.pdf**

In Botswana there has been a lobby for a stand-alone freedom of information law, based on the claim that the constitutional guarantee is insufficient (Ndlovu, 2012). Additionally, the **African Media Barometer (2009)**[10] notes that while the right to information is protected by the Constitution, the Botswana Constitution does not guarantee citizens the right to request information from the government. While constitutional protections on access to information are explicit in endowing the public with the right to access government-held information, others are implicit, implying access to information for the sake of idea formulation and self-expression (Balule & Dambe, 2018), (Mazebe & Sebina, 2006). However citizens are not guaranteed access to information or transparency about governmental activities of the government.

The **Data Protection Act of Botswana**[11] was enacted in 2018 to protect the privacy of individuals and their personal data. The Act provides for the protection of personal data, including the right to access, rectify, and delete personal data. It also sets out the conditions under which personal data may be collected, used, and disclosed. The Act requires organizations to take appropriate measures to protect personal data from unauthorized access, use, or disclosure. Additionally, the Act requires organizations to provide individuals with information about how their personal data is being used and to obtain their consent before collecting, using, or disclosing their personal data. The **Statistics Act 2009**[12] stipulates that data producers shall, in accordance with rules made in Section 26 (5)(b), process, disseminate and make accessible to public users data collected or compiled using public funds. According to the Statistics Act 2009 (Section 45), Statistics Botswana is mandated to collect, analyze, publish, disseminate and archive statistical data. According to the **Public Service Act, 2008**[13] public officials are prohibited from disclosing any information that comes to their knowledge or the type or substance of any document sent to them in the course of their duties or employment (Section 34{C}) without permission from the permanent secretary.

Legal Framework on Access to Land Data

When implementing and adopting land management laws, policies and regulations, the availability of information regarding property ownership, value, and use is critical. Very little of Botswana's legal framework related to land administration makes provision for access to information, and in many cases, includes clauses specifying restrictions on sharing information instead.

Botswana's Land Policy[14] **(updated in 2019)**[15] states as one of the objectives the establishment of an up-to-date, efficient, and accessible Land Information Centre. The aim is to develop an integrated land information system, interconnected with other systems, to ease access and service delivery to customers, stakeholders, supervisors, and administrators. This is to be accompanied by land allocation processes and procedures will be computerized, simplified, and standardized.

10   Africa Media Barometer , Botswana 2009 **https://library.fes.de/pdf-files/bueros/africa-media/07370.pdf**
11   **https://www.bocra.org.bw/sites/default/files/documents/DataProtectionAct.pdf**
12   **https://www.statsbots.org.bw/sites/default/files/documents/Statistics%20Act%202009.pdf**
13   **http://ilo.org/dyn/natlex/docs/ELECTRONIC/80401/116881/F296599292/BWA80401.pdf**
14   **https://faolex.fao.org/docs/pdf/bot196817.pdf**
15   **https://faolex.fao.org/docs/pdf/BOT196818.pdf**

The **Deeds Registries Act**[16] establishes a deeds registry and provides rules for the registration of deeds, land and the rights in immovable properties. It does require the registrar to supply information and allow the inspection of records but only upon payment of a fee (Section 9). No reference is made as to how the data may be accessed or supplied. The documents deposited at the Deeds Registry must be easily accessible and archived in a way that ensures their preservation which may imply digitization, while retrieval necessitates some level of index automation. Botswana's government, as part of its effort to build e-government services in various government sectors, has begun computerizing land records at the Deeds Registry. Neither the **Land Survey Act**[17] nor the **Immovable Property Act**[18] make any provision for access to or the publication of land information.

The **Tribal Land Act of 2018**[19] contains no clauses or provision regarding access to information, but instead has a whole section devoted to the confidentiality of data and information. The act regulates the functions of the land boards who have the responsibility for granting, canceling, changing, transferring and imposing restrictions on use rights to any land (Section 5). **The State Land Act**[20] gives the president the absolute power to dispose of state land with no provision for public consultation and no provision is made for public information on this process.

The **Town and Country Planning Act 2013**[21] governs urban development, settlement planning and land use management in Botswana. The act requires information on development orders to be published in the government gazette as well as in at least three local newspapers (Section 5{3}) within 10 days. It also requires that such a notice must specify where the detailed plans can be inspected and that this must be free of charge (Section 5{3[c]}).

The **Local Government (Rating) Act of 2012**[22] is the act that establishes the ratability of all land and developments within a council area in Botswana. It provides for the procedure for the levying and collection of rates, and the manner in which such rates shall be determined. It doesn't make any provision for how valuation information may be shared or otherwise made available.

Despite little reference in the legal framework to publishing land data in Botswana, there have been efforts to make data publicly available. Data and research on public governance, including budgeting, public expenditure, public-private partnerships (PPPs), public sector innovation, procurement strategies, municipal budget documents, and service delivery plans, are frequently displayed at **open-to-the-public council sessions**[23]. Members of the public have access to some governance and operations documents. Information such as procurement plans, local budget documents and service delivery plans are often debated in full council meetings which are open to the public and are **available for examination**[24].

16   **https://faolex.fao.org/docs/pdf/bot91391.pdf**
17   **https://faolex.fao.org/docs/pdf/bot65999.pdf**
18   **https://faolex.fao.org/docs/pdf/bot91352.pdf**
19   **https://faolex.fao.org/docs/pdf/bot204211.pdf**
20   **https://faolex.fao.org/docs/pdf/bot39081.pdf**
21   **https://faolex.fao.org/docs/pdf/jam71240.pdf**
22   **https://www.iec.gov.bw/images/documents/Local_Government_Act.pdf**
23   **https://www.botswanalaws.com/StatutesActpdf/2013Actpdf/TOWN%20AND%20COUNTRY%20PLANNING%20ACT,%204%20OF%202013.pdf**
24   See Local Government (District Councils) Act. **https://www.eisa.org/pdf/bot1965locgov.pdf**

Availability of Land Data and Information

Category 1: Legal, Institutional and Policy Data

The Botswana Constitution is available online and all laws are available but not currently accessible on the **Botswana e-Laws website**.[25] Government ministries mandated with land governance also make their sector specific legislation available on their websites as well as documents related to services that they provide. Their mostly bibliographic data ranges from proprietary formats (MS Word or Adobe Acrobat PDF) to some non-proprietary formats such as hypertext markup language (html) on the official **Government of Botswana**[26] website. The legal and policy resources on this website are incomplete and not up to date as no publications have been listed for several years, including for the Ministry of Land Management, Water and Sanitation Services. The **Botswana 1 Gov e Service Portal**[27] requires a registration with a national identification number before any information can be accessed.

The **Botswana Institute of Development and Policy Analysis (BIDPA)**[28] aim's to promote policy analysis through research, capacity building, assisting organizations or individuals where appropriate. It promotes policy research results that are made available on its website of development research outputs in working papers and policy briefs. Bibliographic data is available from academic institutions, including the University of Botswana and the **Botswana Institute of Development and Botswana National Archives and Records Services (BANARAS)**.[29]

The **Botswana Legal Information Institute**[30] (BotswanaLII) does not appear to have any affiliation with the government or the African Legal Information Institute which partners with a number of African countries to make legal and policy data openly available. The BotswanaLII currently provides access to court decisions only, but not to any legislation and or policies (but it has links to other databases). The decisions are freely available for download in both PDF and RTF (a cross platform non-proprietary format) formats. The website only has court cases up to 2015, and for cases after 2015 to 2018 users are redirected to a **South African legal database (SAFLII)**.[31] The links to access the privacy and copyright information are inactive.

25   Website was unresponsive during the research. **http://www.elaws.gov.bw**
26   **https://www.gov.bw**
27   **https://1gov.gov.bw/#/landing-view**
28   **https://bidpa.bw/**
29   **https://www.gov.bw/culture/national-archives-research-enquiry**
30   **http://www.botswanalii.org**
31   **http://www.saflii.org/bw/cases/BWLT/2018/13.html**

Category 2: Land Tenure Data

The government departments under the Ministry of Land Management and Water Sanitation (MLWS) are the major custodians for land tenure data. Other land tenure custodians include the Ministry of Infrastructure and Housing Development. The respective government departments collect fundamental data for services they are expected to deliver. MLWS has data repositories on land tenure, land use, land registry and cadastral data within the departments responsible for each aspect. There is no online website to the ministry and the official government website provides only a telephone number under the contact details.

The **State Land Integrated Management System**[32] (SLIMS) is built for the management of state land, administered by the Department of Lands. National parks, game reserves, and all urban areas are classified as state land. The system's functionality is geared toward state land administration. The SLIMS application supports the land administration and management operations at the Department of Lands (DoL), the Self Help Housing Agency (SHAA), and the Deeds Registry. SLIMS is not publicly available and is for internal use by officials to manage data related to land tenure, use, development and value. The Tribal Land Integrated Management System (TLIMS) is a web-based, multi-user, GIS-based land management system for use by land boards. This means that a land board and its subordinate offices will constitute a resource site that will communicate with the central land data repository. Additionally, TLIMS enables data sharing between land boards, sub land boards, and other government departments. TLIMS is not online for public use and information from the TLIMS is not available.

The GIS data comes from the **Department of Surveys and Mapping (DSM)**,[33] which maintains it in both paper and digital formats. The DSM digital data exists in a variety of formats, but digital data is only made available in the proprietary ESRI shape file format upon request by the public. The data generated includes general plans, survey diagrams, base maps highlighting rivers, highways, and other significant features, layout maps, and orthophoto maps. Cadastral data is updated weekly, but is not available online and the DSM does not have a website although it does have a **Facebook**[34] page. The Ministry of Lands Management, Water and Sanitation Services has an in-house department on Land Administration Procedures, Capacity and Systems (LAPCAS) (Malatsi & Finström, 2013). The goals of the LAPCAS project were the computerisation of the deeds register and the improvement of the information system. To access information from LAPCAS It is necessary to make a request to the Department of Lands to gain access to the most recent information.

The Botswana National Spatial Data Infrastructure (BNSDI) was launched in 2003 (Tembo et al., 2001) with the primary objective to provide a central location inside the government for the coordination of all GIS data and information. However, the BNSDI has not developed and the initial website designated as the website/geoportal for SDI output for Botswana is not operational. The Regional Centre for Mapping of Resources and Development (RCMRD) created a **geoportal**[35] that includes geospatial data on Botswana. RCRMD's work concentrated on land cover, boundary determination, settlements, important roadways,

32 **https://www.gov.bw/land-management/allocation-state-land**
33 **https://www.gov.bw/land-management/maps-and-geospatial-data**
34 **https://www.facebook.com/people/Department-of-Surveys-and-Mapping/100077514014522/**
35 **http://geoportal.rcmrd.org/**

Despite the progress made there are still significant *gaps in the availability of data and information* on land in Botswana. Almost all existing digital land tenure data is still not made available online. Records for tribal land are not comprehensive and the information that does exist is not available online. There are also inadequate rules and policies in place to regulate the sharing of data between government agencies.

The *types of data or information that is made available online is mostly bibliographical* in nature. This includes documents on land tenure and a variety of legal tenure information sources (laws, policies and regulations) which specify gender and indigenous land rights, communal and freehold, and several research articles examining the efficiency and problems of the land tenure system in Botswana. None of the primary data on which these study papers were based has been discovered, and Statistics Botswana does not provide data on land ownership. Statistical information on the proportion of land in different tenure systems is published by independent researchers but cannot be verified from the MLWS. Data received from LAPCAS is incomplete and survey data is not systematically updated from the land boards to Dept of Surveys & Mapping (World Bank Group, 2022).

It should be noted that the MLWS stated that they are in the process of digitisation of land governance data which will be made accessible online to government departments and will have paid up access by the public.

Category 3: Land Use Data

Responsibility for land use management lies with the MLWS. Most of the ministry's responsibilities are performed through departments such as the Department of Town and Regional Planning, Department of Surveys and Mapping, Department of Lands and the deeds registry. Most land use data is collected digitally from submissions made by town planning consultants hired by local governments with little formal direction on how data is shared between private and public entities. Other land use planning responsibilities have been delegated to decentralized central government agencies such as the district administration headed by the district commissioner, designed to assist local authorities with technical planning expertise. The day-to-day management of the developing environment is the responsibility of local authorities while the Department of Town and Regional Planning is accountable for physical planning. The Town and Country Planning Act, 2013 is the primary Act governing urban planning. There are three distinct forms of physical plans: regional master plans, district settlement strategic plans, and district integrated land use plans. These are generated for a variety of purposes, and the format, content, and mapping scales used vary appropriately.

A variety of land use plans are made available by the Department of Town and Regional Planning, but only as printed paper plans. These include the National Settlement Policy, Regional Master Plans, District Settlement Strategies, Village/Town/City Development Plans and detailed layout plans. District Administrations, under the Ministry of Local Government, make District Land Use Plans. The data and information types typically include PDFs for land use zoning and maps and schemes.

This information is usually available in hard copy at the offices of the local authority and the consulting town planner. Other departments also make sector plans, such as Wildlife Management Area plans. Several ministries (e.g. The Ministry of Agriculture, and the Ministry of Energy and Water Affairs) have national sector master plans such as the National Water Master Plan and Arable Agriculture and Dairy Development Plan which are offline and can be made available as pdf reports.

The gaps are significant as almost none of the land use data is available online. While the timeliness of the data cannot be ascertained, land use plans are said to be updated annually.

Category 4: Land Development Data

Local plans for land development are not always updated, and there is little information online about infrastructure for land use, including public land. Spatial data is not often used to track land development, especially at the local level. The National Spatial Plan (NSP) advocates for strengthening the country's spatial governance institutions and processes in order to ensure that spatial planning becomes an integral part of National Development Planning. The government manages land development through six year **National Development Plans (NDPs)**.[36] The government highlighted the completion of a land information system in the NDP 11 (2017–2023) and established a Land Information Centre to improve land management and sector policy. The NDP 11 (pg. 141) outlines the land information management initiative, which will use a comprehensive land resource database and digitize all land records, including those submitted to land boards and the Department of Lands Deeds Registry, and will establish a Physical Planning Portal by 2023. The other endeavor is a spatial information management system that will generate maps of the entire country and streamline plot surveys. The Botswana government is aiming to achieve sustainable development through modern technology, such as e-Government, to provide unfettered access to, and ease the flow of information and services.

In Botswana, a wide range of land development data and information is available from both government and private sources. The Ministry of Infrastructure and Housing Development and Ministry of Land Management, Water and Sanitation Services are the main government sources. The data includes information about zoning in a specific area, the size and shape of parcels of land, the topography of the land, the soil type, vegetation, infrastructure, and any other pertinent land information. It can also include information about the current and proposed uses of the land. The data includes information about permits and approvals granted for development. Private sector sources such as consultants, developers, investors and other stakeholders in the land development sector also provide data and information on land development in Botswana. The Gaborone City Council and City of Francistown Council consistently provide updates on developments taking place in the city through their social media platforms. However none of this information is available online.

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36   https://botswana.un.org/sites/default/files/2020-10/NDP%2011%20full%202017.pdf

The Revised Town and Country Planning Act (2013) makes provision for the orderly and progressive development of land in both urban and rural areas and for preservation and improvement of their amenities. The development plans include such maps and such descriptive matter as may be necessary to illustrate the aforementioned proposals with such degree of particularity as may be appropriate to different parts of the planning area; and a development plan may in particular:

- define the sites of proposed roads, public and other buildings and works, airfields, parks, pleasure grounds, nature reserves and other open spaces; and
- allocate areas of land for use for agricultural, forestry, mining, water resource, industrial, residential, or other purposes of any class specified in the plan.

The Development Plans are available in hard copy and PDF format for purchase at the Department of Town and Country Planning. Data on approved and completed projects is not available to the public.

The Ministry of Land Management, Water and Sanitation Services provides information on land expropriation, number of expropriations, the reasons for expropriation, and the compensation paid to affected landowners on an annual basis in its annual report only. The Botswana Land Board provides a quarterly report on land expropriation. Data and Information on land conflicts is not openly available. Data on conflicts could not be obtained, and it is not known whether the data is made available or with whom the data is shared; nor if the data is accessible to the public. Individual records on conflicts that have been registered with the Land Tribunal or in the court system are available on the **Botswana e-Laws website**.[37]

A computerized system for project monitoring has been built and is available for internal use by government officials only. The Government Project Monitoring System (GPMS) produces quantitative data such as project timelines, budget information, and performance metrics. It also produces qualitative data such as project reports, feedback from stakeholders, and project risk assessments. The system is capable of producing quarterly and annual project monitoring reports, as well as any other information that may be requested on a project. District planning officers around the district use this system. Before a hard copy is made, information is transferred (by disc) and assembled electronically in the Ministry of Local Government (which is responsible for all Local Authority Councils). This system allows for the management of project information, the generation of quarterly monitoring reports, and the production of any number of other ad hoc information requests or reports.

Land development data and information is incomplete and is exacerbated by insufficient provisions for stakeholder participation in the development process. Data is not available in readily re-usable formats and lacks metadata. There is inadequate data on land expropriation compensation, conflicts, court cases and appeals as they move through the legal system.

37 **http://www.elaws.gov.bw**

Category 5: Land Value Data

The study assessed the availability of land valuation information and land transaction data and information, such as market transaction data (disaggregated by sale and lease), and market transaction data of indigenous land. It also considered information regarding tribal lands and land investments (where possible, disaggregated by public/private investments, disaggregated by scale of land areas, disaggregated by indigenous and non-indigenous lands, or foreign and domestic investments).

No land valuation data was available and published online as open data in any form. The data on land markets concerning freehold land may be derived from the Deeds Registry office in Gaborone for the Southern property market and in Francistown for the Northern property market. While private valuers collect this data in the cities of Gaborone and Francistown where the housing market is active and there is comparable sales data, this information is not available online. In other areas, the sales evidence consists of a sparse amount of reliable data (Mengwe, 2010). It is possible to compile statistics and information on land values in Botswana by consulting the Deeds Registry, as well as the websites of financial institutions, real estate agencies, and websites that specialize in the sale of property. The information on land valuation that can be obtained from the Deeds Registry needs to be combined with the deed of sale records, which are open to the public but are not published online. Data on freely transferable state land transactions is available at the Deeds Registry as individual transactions only. While tribal land may be leased by the holder of the customary grant, it cannot however be freely sold in the market. Data on transactions on tribal land for which the customary grant has been converted into a common law lease can be individually accessed from the land boards. Data on price trends, valuations systems and trends and on benchmarking criteria for water and electricity is published by research institutions.

Sources of data and information in Botswana include local authorities that are empowered through the Townships Act (CAP 40:02) to raise revenue through property taxes. The Botswana government website[38] provides details on the different types of taxes, such as property rates, as well as on how to pay them and the deadlines for payment. It also provides contact details for local authorities and tax offices. The valuation rolls are documents that contain information about the value of properties and are used by local authorities to calculate property taxes. The information contained in the rolls is considered confidential and not available to the public. However, some local authorities may make the rolls available for inspection at their offices. In some cases, the rolls may also be published in print or online, but this is not common practice in Botswana.

No valuation data is generally made available from government sources. Valuation rolls should be updated every five years and a supplementary valuation should be conducted every year, but this is rarely done. Data on rates and taxes collected is not available to the public and where valuation rolls are updated, data is only available upon request at the respective local authority.

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38   https://www.gov.bw/ministries/ministry-local-government-and-rural-development

● ● ●

Category 6: **Other Land Data**

Administrative and political boundaries maps are available to the public from different service providers such as **Department of Surveys and Mapping**[39] in hard copy and digital formats at a price. This data provides a visualization and analysis tool for Botswana's geographic division. Regions can be political/administrative, postcode-based, or the smaller geographic areas that are frequently associated with the census. The **Centre for Humanitarian Data**[40] provides spatial data in proprietary vector formats (.shp and .gdb). Administrative and Political Boundaries maps for Botswana can also be complemented with socio-demographic, purchasing power, and consumer profile data, available for purchase at **East View Geospatial**[41] and offered in a variety of popular geographic information system (GIS) data formats such as Shapefile, GeoJSON, GeoTIFF, ESRI File Geodatabase, MapInfo File, GeoPackage and Web Map Service.

The custodian of national statistics in **Botswana is Statistics Botswana (SB)**[42] which is a parastatal agency responsible for collecting and disseminating all official statistics in Botswana. Key economic data published by SB include national accounts, employment, prices, trade and agricultural production. National surveys are regularly undertaken, including the Population and Housing Census, the Household Income and Expenditure Survey and the Labor Force Survey. SB also monitors progress towards meeting the objective of Vision 2036 and the United Nations Sustainable Development Goals. SB makes its data available through its website which provides access to a range of statistical publications, databases, and other resources. The website also provides access to the Botswana Statistical Yearbook (in PDF format) which contains detailed information on the country's population, economy, and other topics. Additionally, SB makes its data available through its Data Portal which provides access to a range of datasets and interactive visualizations. **Agricultural statistics**[43] are produced from annual agricultural surveys and decennial censuses in order to establish time series data on agricultural production patterns. SB makes agricultural census data available as PDF reports. **Public declaration of assets**[44] is an important step in promoting transparency and accountability in the public sector. It requires all public officials to declare their assets and liabilities (including land holdings), and provides a mechanism for monitoring and enforcing compliance. The Act prescribes that the Ethics and Integrity Directorate establish and maintain a register of declarations of interests, income, assets and liabilities, but currently these registers are not available in the public domain as required by the Act.

▬▬▬

39   **https://www.gov.bw/land-management/maps-and-geospatial-data**
40   Centre for Humanitarian Data **https://data.humdata.org/dataset/cod-ab-bwa**
41   **https://geospatial.com/resources/country-data/botswana/**
42   **https://www.statsbots.org.bw**
43   **https://www.statsbots.org.bw/agriculture**
44   **https://botswanalaws.com/Botswana2019Pdf/12of2019.pdf**

Businesses are required to provide beneficial ownership information to the Companies and Intellectual Property Authority (CIPA) in accordance with Sections 21 and 345 of the Companies (Amendment) Act 2018 and the Financial Intelligence Agency (FIA) Act. CIPA is obliged to establish and maintain a register of beneficial ownership for businesses. All companies are required by law to provide this information to CIPA when registering or re-registering, and failure to do so is an offense which may attract a fine or jail term. CIPA keeps an online searchable **beneficial registry**[45] containing information about the business and its shareholders. Botswana's public procurement is centralized and the Public Procurement and Asset Disposal Board (PPADB) awards government tenders. On its **website**[46] and in the Government Gazette, the PPADB announces, in html format, decisions about awarded tenders, prequalification lists, and newly registered contractors.

Botswana is considered **vulnerable to climate change**.[47] The **SASSCAL Data and Information Portal**[48] provides access to data and information resources relating to climate, environment, and socio-economic issues in the Southern African region.. This includes spatial data such as satellite imagery, topographic maps, and geographic information system (GIS) data. The **Climate Knowledge Portal (CKP)**[49] makes climate change data publicly available in a variety of open formats, including CSV, JSON, XML, and GeoJSON. The CKP also provides access to tools and resources for analyzing and visualizing climate data. Botswana Geoscience Institute publishes data related to geophysical and geological services on its **Botswana Geoportal (BGI)**.[50] Datasets from government information sources require a login or other form of identity from the user before the data may be accessed. As there is no dedicated portal for land administration information, existing online datasets provide only a portion of the core land information. Data portals are not updated on a regular basis, information is not up to data, and some website links are no longer active or are broken. The majority of data resources identified were bibliographic in nature with only some statistical data resources and minimal geospatial data.

45 **https://www.cipa.co.bw/ng-cipa-master**
46 **http://www.ppadb.co.bw/Pages/BoardDecisions.aspx**
47 **https://reliefweb.int/sites/reliefweb.int/files/resources/Botswana%20-%20Climate%20risk%20country%20 profile.pdf**
48 **http://data.sasscal.org/sasscal/metadata//view.php?view=c_person_org&id=1278**
49 **https://climateknowledgeportal.worldbank.org/country/botswana**
50 **https://www.bgi.org.bw**

How Open is Land Data and Information in Botswana?

Category 1: Legal and Policy Data

Parytially open

Category 2: Land Tenure Data

Not open

Category 3: Land Use Data

Slightly open

Category 4: Land Development Data

Not open

Category 5: Land Value Data

Not open

Category 6: Other Land Data

Parytially open

● Not open   ● Slightly open   ● Partially open   ● Fully open

Open Data Compliance Assessment in Botswana

This chapter assesses the legal policy framework, land tenure, land use, land development, land value and other land data types described in the previous chapter against ten open data criteria drawn from the methodologies used by the **Open Data Index**[51] and the **Open Data Barometer**.[52] This has enabled more detailed results than in the **2022 Open Data Barometer**[53] and the **2016/2017 Global Open Data Index**[54] which only considered land ownership data.

In line with the 2019 State of Open Data report, this assessment focuses primarily but not exclusively on digital government data which is open (Davies & Chattapadhya, 2019). This covers land governance data traditionally created or used during the business of governing; created or published at the request of governments; or collected by international organizations, civil society organizations, private enterprises, and individuals. Digital data held in offline information systems is also acknowledged.

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51   2016/2017 Global Open Data Index methodology.
      https://index.okfn.org/methodology/
52   Open Data Barometer.methodology. 4th ed. 2016.
      https://opendatabarometer.org/4thedition/methodology/
53   **https://globaldatabarometer.org/module/land/**
54   **https://index.okfn.org/place.html**

Table 3: Ten Open Data Criteria and Descriptions

CRITERIA	DESCRIPTION
Online	Availability of key land resources and whether or not the data is available online or offline
Accessible	Describe how accessible the data is to users. Consider whether you are required to register, log in or request access in order to be able to access the resource.
Free	There is no charge for the data.
Timely	Data is updated according to an acceptable time frame.
Metadata	Information that explains the origin of the dataset and how it is maintained. It could be information about the structure of the data, the type of data, the quality of the data or the conditions determining the inclusion/exclusion of data.
Standards	Information that describes whether the data conforms to a particular standard if appropriate. Consider whether the data is only available in proprietary formats, or whether open formats are used. It also may includes evidence of standards for a particular type of content domain such as land administration data (Land Administration Domain Model (LADM)-ISO 19152:2012)
Downloadable	The data can be downloaded in bulk in open formats.
Open licence	The data is licensed for legal reuse by anyone, using, for example, a Creative Commons Attribution by 4.0 International licence.
Machine-readable	Presented in open formats which can be read electronically without human intervention, for example, APIs (application programming interfaces.)
Uniform Resource Identifiers	A URI may be thought of as a permanent name given to an online information resource so that it can always be identified by search queries.

Table 4: Open Data Compliance Scoring Categories

SCORE	DESCRIPTION
Fully/Very Open	The digital data meets all or most of the open data criteria.
Partially Open	The digital data meets more than half of the open data criteria.
Slightly Open	The digital data meets few of the open data criteria or there is digital land governance data but it is not yet online.
Not Open	There is no evidence of digital or open data.

While this assessment scores Botswana's current open data status, it is important to know that this report's focus is on the process of opening up land data, rather than on data scores. Any assessment of openness should be seen as a continuum. While the formal features of an open data assessment are important, its main purpose is to provide a baseline for understanding the current state of data and to support usability of open data for Botswana's data-dependent services and public interest.

Table 5: Overall Results of the Open Data Assessment for Botswana's Land Data
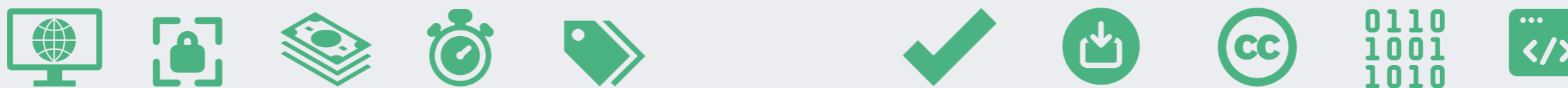
	Online	Accessible	Free	Timely	Metadata	Standards	Downloadable	Open licence	Machine readable	Linked Data (URIs)	TOTAL
Legal	Partially Online	Partially Accessible	Partially Free	Fully Timely	Full Use of Metadata	Full Use of Standards	Fully Downloadable	Partial Use of Open Licenses	Partially Machine-readable	No Linked Data	Partially Open
Land Tenure	Not Online	Not Accessible	Not Free	Not Timely	No Use of Metadata	No Use of Standards	Not Downloadable	No Use of Open Licenses	Not Machine-readable	No Linked Data	Not Open
Land Use	Slightly Online	Slightly Accessible	Slightly Free	Slightly Timely	Slight Use of Metadata	Slight Use of Standards	Slightly Downloadable	Slight Use of Open License	Slightly Machine-readable	No Linked Data	Slightly Open
Land Devpt	Not Online	Not Accessible	Not Free	Not Timely	No Use of Metadata	No Use of Standards	Not Downloadable	No Use of Open Licenses	Not Machine-readable	No Linked Data	Not Open
Land Value	Not Online	Not Accessible	Not Free	Not Timely	No Use of Metadata	No Use of Standards	Not Downloadable	No Use of Open Licenses	Not Machine-readable	No Linked Data	Not Open
Other Land Data	Partially Online	Partially Accessible	Partially Free	Partially Timely	Partial Use of Metadata	Partial Use of Standards	Partially Downloadable	Partial Use of Open Licenses	Partially Machine-readable	No Linked Data	Partially Open
OVERALL	Partially Online	Partially Accessible	Slightly Free	Slightly Timely	Slight Use of Metadata	Slight Use of Standards	Slightly Downloadable	Partial Use of Open Licenses	Partially Machine-readable	No Linked Data	**Slightly Open**

Criteria 1: Online

Online open data is "*digital data that is made available with the technical and legal characteristics necessary for it to be freely used, re-used, and redistributed by anyone, anytime, anywhere*".[55] Online open data on the Internet offers equal access for everyone who has Internet access and it encourages transparent, accountable, efficient, responsive, and effective governments and civil society and private sector organizations.

For this criterion, the primary focus is on land governance datasets that are available online, including via tools for mobile and offline use. It also notes datasets that are digital and used online within government and other organizations, but which are not yet publicly available online. A next step for a government could be to make internal digital datasets publicly available on the Internet.

How much of Botswana's land related data is online?

Partially Online

| ● Not Free | ● Slightly Free | ● Partially Free | ● Fully Free |

Table 6: How much of Botswana's land data and information is online?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Partially Online*	Botswana has five digital legal databases: Botswana e-Laws, Blackhall's Laws of Botswana, laws.gov.bw, FAOLex and Ecolex. FAOlex, EColex and Blackhalls's Laws of Botswana are currently online. Blackhalls makes publicly available all the statutory laws (Principal and Subsidiary Legislation) of Botswana in force, in pdf and text formats. In addition it offers a subscription for Clean Acts and Regulations and amended annotated Acts and their Regulations. FAOlex and EColex offer subject specific legislation. The government's Botswana e-laws, laws.gov.bw and Parliament's Bills website could not be reached online. The 2015 and 2019 National Land Policy documents are online, but not the 2020 update.
Land Tenure Data	*Not Online*	Botswana's digital Cadastral Information System (CIS), Tribal Land Information Management System (TLIMS), Land Administration Processes, Capacity and Systems (LAPCAS) Project, Computer Based Deeds Registry System and the digital Botswana National Spatial Data Infrastructure (SDI), led by the Department of Surveys and Mapping, are all offline.

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55   International Open Data Principles. **https://opendatacharter.net/principles/**

CATEGORY	SCORE	NOTES
Land Use Data	*Slightly Online*	» The Tribal Land Integrated Management System, used by Land Boards, and the State Land Integrated Management System are both offline. Statistics Botswana's Data Portal offers online aggregated land-use and water resources, water uses, and agricultural water management statistics from the FAO (published 2017 and 2018) and African Development Bank Group (published 2016). » Land use data, released by non-government institutions, is found at: Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) Data and Information Portal: online map of land use units that share geographical overlapping with the Okavango Basin. » Regional Centre for Mapping of Resources for Development (RCMRC) Geoportal: online public domain (open licence) geospatial land cover and land-use data and maps, including settlements, boundaries, land cover, rivers and roads. » African Development Bank's Botswana Statistical Data Portal: 2018 land cover and use data. » Botswana Geoscience Institute's BoreHive portal: online visualizations of government and private boreholes. » African Development Bank's Data Portal: land use visualizations but users must register to access the data. » ISRIC Datahub: online soil data that can be downloaded. » Botswana data produced as part of the World Bank's Satellite Monitoring Service of Urbanization in Africa project, in partnership with the German Aerospace Center (DLR), is available online.
Land Development Data	*Not Online*	The National Development Plan 2017-2023 is available in pdf format. There is no online land development data.
Land Value Data	*Not Online*	The Deeds Registry, which lists Property Transactions and Values is offline. E-Valuation rolls can be inspected at the office of the local Town Clerk or Council Secretary for inspection by any rate payer or his or her duly authorized representative.
Other Land Data	*Partially Online*	The Africa Geoportal displays data for viewing only. Humanitarian Data Exchange has online Botswana Subnational Administrative Boundaries for 2021, and the Africa Portal and the Regional Centre for Mapping of Resources for Development (Kenya) Geoportal all offer some general online digital datasets or documents which are related to Botswana's land governance. Beneficial Ownership details can be viewed in the online Companies and Intellectual Authority database. Public Procurement and Asset Disposal Board tender data requires registration. The Climate Change Knowledge Portal provides online historical and projected climate data.

Overall Score: Partially Online

Criteria 2: Accessibility

This criterion assesses whether the land data is easily discoverable and accessible, and made available without bureaucratic or administrative barriers which can deter people from accessing it. This includes seeing whether users must identify themselves through registration, log in, or a request for access. It is normal for users who wish to bulk download data or use an API to supply an email address in order to receive updates of the data. This criterion also assesses whether access is easy for people with disabilities.

In the future, initiatives could be introduced to raise awareness of open data, promote data literacy, build capacity for effective use of open data, and ensure citizen, community, and civil society and private sector representatives have the tools and resources they need to effectively understand how public resources are used.[56]

Is Botswana's land data and information is accessible?

	Partially Accessible

● Not Accessible	● Slightly Accessible	● Partially Accessible	● Fully Accessible
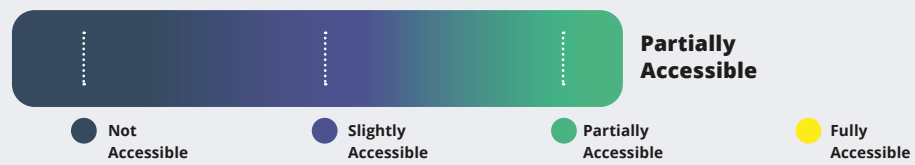
Table 7: How much of Botswana's land data and information is accessible?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Partially Accessible*	FAOlex, Ecolex and Blackhalls's Laws of Botswana were accessible. Blackwells also offers a subscription for Clean Acts and Regulations and amended annotated Acts and their Regulations. The government's Botswana e-laws, laws.gov.bw and Parliament's Bills website could not be tested online.
Land Tenure Data	*Not Accessible*	There is no online government data.
Land Use Data	*Slightly Accessible*	Government land use information is offline. The international sources are mostly accessible.
Land Development Data	*Not Accessible*	There is no online development data.
Land Value Data	*Not Accessible*	There is no online land value data.
Other Land Data	*Partially Accessible*	There are accessible international online digital datasets or documents related to land governance. Public Procurement and Asset Disposal Board tender data requires registration
Overall Score: Partially Accessible		

56   https://opendatacharter.net/principles/

Criteria 3: Free

This criterion assesses whether the online land data is released **free of charge**.[57] It excludes bibliographic data such as online articles.

Is Botswana's land data and information free of charge?

Slightly Free

● Not Free   ● Slightly Free   ● Partially Free   ● Fully Free

Table 8: How much of Botswana's land data and information is free of charge?

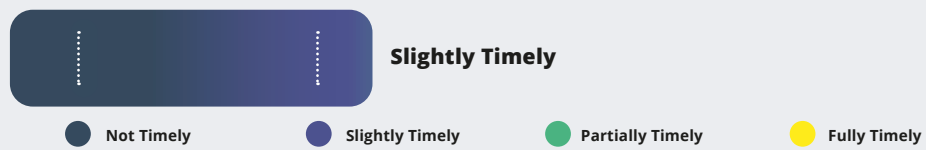| CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework	*Partially Free*	FAOLex and Ecolex and e, Blackhalls's Laws of Botswana are free. Blackhalls also offers a subscription for Clean Acts and Regulations and amended annotated Acts and their Regulations. The government's Botswana e-laws, laws.gov.bw and Parliament's Bills website could not be tested online.
Land Tenure Data	*Not Free*	There is no online government data.
Land Use Data and Information	*Slightly Free*	Government land use information is offline. The international sources are free.
Land Development Data and Information	*Not Free*	There is no online development data.
Land Value Data	*Not Free*	There is no online land value data.
Other Land Data	*Partially Free*	The international online digital datasets or documents related to land governance are free. An exception is the Africa Geoportal online map showing average household size which requires the purchase of an ESRI license to use the data.
	Overall Score: Slightly Free	

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57   **https://opendatacharter.net/principles/**

Criteria 4: Timeliness

This criterion assesses whether open data is released in a timely manner, without undue delay, whether it is comprehensive, accurate, and released in accordance with prioritization informed by consultations with open data users, including citizens, other governments, and civil society and private sector organizations. Timely data is released in its original, unmodified form, and linked to any relevant guidance, documentation, visualizations or analyses. To the extent possible, released data is disaggregated to the lowest levels of administration, including disaggregation by gender, age, income, and other categories.[58]

How timely is Botswana's land related data updated?

Slightly Timely

● Not Timely   ● Slightly Timely   ● Partially Timely   ● Fully Timely

Table 9: How much of Botswana's land data and information is released and updated timely?

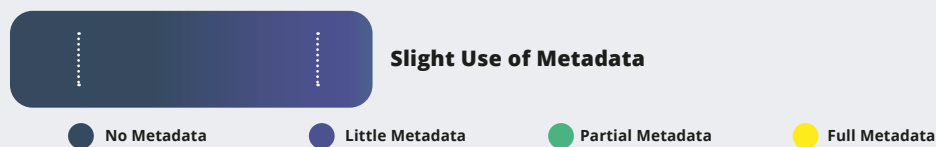| CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Fully Timely*	The legal databases are updated regularly.
Land Tenure Data	*Not Timely*	There is no online government data.
Land Use Data	*Slightly Timely*	Government land use information is offline. Few of the international sources are current.
Land Development Data	*Not Timely*	There is no online development data.
Land Value Data	*Not Timely*	There is no online land value data.
Other Land Data	*Partially Timely*	Few of the international sources are current.
Overall Score: Slightly Timely		

58   **https://opendatacharter.net/principles/**

Criteria 5: Metadata

This criterion assesses whether the land governance data includes consistent core metadata, that the data is fully described, all documentation accompanying the data is written in clear, plain language, and data users have sufficient information to understand the source, strengths, weaknesses, and analytical limitations of the data.[59]

Metadata is the data providing information about one or more aspects of data within a dataset. It is used to summarize basic information about data, which can make it easier to track and work with specific data. Core metadata is a limited set of metadata which provides important, fundamental information about data, and should be defined by a consistent vocabulary across all datasets. Core metadata elements may include the dataset title, source, publication date, and format, as well as other relevant information that describes the dataset and supports discoverability (that is, makes it easier for users to search for and find the dataset).[60]

Is Botswana's land related data accompanied by metadata?

Slight Use of Metadata

● No Metadata   ● Little Metadata   ● Partial Metadata   ● Full Metadata

Table 10: How much of Botswana's land data and information is accompanied by metadata?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Full Use of Metadata*	FAOLex and Ecolex and Blackhalls's Laws of Botswana have metadata.The online government data could not be assessed.
Land Tenure Data	*No Use of Metadata*	There is no online government data.
Land Use Data	*Slight Use of Metadata*	Government land use information is offline. The international sources have metadata.
Land Development Data	*No Use of Metadata*	There is no online development data.
Land Value Data	*No Use of Metadata*	There is no online land value data.
Other Land Data	*Partial Use of Metadata*	The Africa Geoportal and the international sources have metadata.
Overall Score: Slight Use of Metadata		

59   **https://opendatacharter.net/principles/**
60   **https://drive.google.com/file/d/1ruIYMNsHLAvfv9gOlmLDMhEWI_pM_dmL/view**

Criteria 6: Standards

This criterion assesses whether the organization releasing the land data implements consistent, open standards covering data formats, interoperability, structure, and common identifiers when collecting and publishing data. This also considers whether the organization supports increased interoperability between existing international standards, the creation of common, global data standards where they do not already exist, and whether it ensures that any new data standards created are, to the greatest extent possible, interoperable with existing standards.[61]

How much of Botswana's land related data uses standards?

Slight Use of Standards

● Does Not Use   ● Uses Slightly   ● Uses Partially   ● Fully Uses
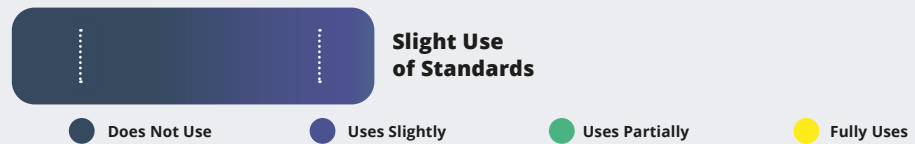
Table 11: To what extent are appropriate data standards applied to land data in Botswana?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Full Use of Standards*	FAOLex, Ecolex and Blackhalls's Laws of Botswana apply standards.
Land Tenure Data	*No Use of Standards*	There is no online government data.
Land Use Data	*Slight Use of Standards*	Government land use information is offline. The international sources apply standards.
Land Development Data	*No Use of Standards*	There is no online development data.
Land Value Data	*No Use of Standards*	There is no online land value data.
Other Land Data	*Partial Use of Standards*	The Africa Geoportal and the international sources apply standards.
Overall Score: Slight Use of Standards		

32

61   **https://opendatacharter.net/principles**

Criteria 7: Downloadable

This criterion assesses whether the land governance data is made available for users to download in human-and machine-readable formats, including via Application Programming Interfaces (APIs) (software intermediaries that allow two applications to talk to each other).
It does not assess bibliographic articles.

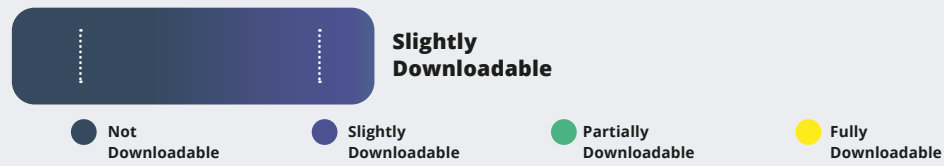## How much of Botswana's land data and information is downloadable?

Slightly Downloadable

● Not Downloadable   ● Slightly Downloadable   ● Partially Downloadable   ● Fully Downloadable

Table 12: How much of Botswana's land data and information is downloadable?

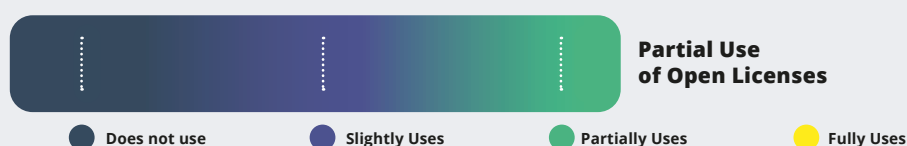| CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Fully Downloadable*	Html and PDF formats are downloadable for content.
Land Tenure Data	*Not Downloadable*	There is no online government data
Land Use Data	*Slightly Downloadable*	Government land use information is offline. The international sources are mostly downloadable.
Land Development Data	*Not Downloadable*	There is no online development data.
Land Value Data	*Not Downloadable*	There is no online land value data.
Other Land Data	*Partially Downloadable*	The Africa Geoportal requires an ESRI license; the international sources are mostly downloadable. Public Procurement and Asset Disposal Board tender data requires registration.
	Overall Score: Slightly Downloadable	

Criteria 8: Open License

This criterion assesses whether land governance data is released under an open and unrestricted license that ensures that data users can easily find and understand the conditions of their data access and re-use.[62] The most common open license government use is the Creative Commons Attribution CC-BY International 4.0 License which allows users to copy and redistribute the information provided they attribute the copyright owner.[63]

How much of Botswana's land related data makes use of open licenses?

| Does not use | Slightly Uses | Partially Uses | Fully Uses |

Partial Use of Open Licenses

Table 13: How much of Botswana's land related data makes use of open licences?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Partial Use of Open Licenses*	Government sells its laws. Blackhalls's Laws of Botswana is restricted. Ecolex grants users a license to use, download and print the materials contained in ECOLEX solely for non-commercial purposes. Copying, browsing, redistribution, publication, or commercial exploitation of any material contained on or otherwise made available on ECOLEX is strictly prohibited. Third party copyright material on FAOLEX requires rights and permissions to be obtained from the copyright holder(s) indicated.
Land Tenure Data	*No Use of Open Licenses*	There is no online government data
Land Use Data and Information	*Slight Use of Open Licenses*	Government land use information is offline. The international sources are mostly open.
Land Development Data and Information	*No Use of Open Licenses*	There is no online development data.
Land Value Data	*No Use of Open Licenses*	There is no online land value data.
Other Land Data	*Partial Use of Open Licenses*	The Africa Geoportal is not open; the Public Procurement and Asset Disposal Board tender data requires registration; international sources are mostly open
	Overall Score: Partial Use of Open Licenses	

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62   **https://opendatacharter.net/principles**
63   **https://creativecommons.org/licenses/by/4.0/**

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0110
1001
1010
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Criteria 9: **Machine Readability**

This criterion assesses whether the land governance data is made available in formats that ensure it can be read and manipulated by either machines or humans (machine-readable and human-readable). Machine-readable data is "*Data in a data format that can be automatically read and processed by a computer.*"**64** This is needed by analysts downloading data in bulk for example, for policy development, analysis or visualization.

How much of Botswana's land related data is machine readable?

Partially Machine Readable

Not Readable   Slightly Readable   Partially Readable   Fully Readable
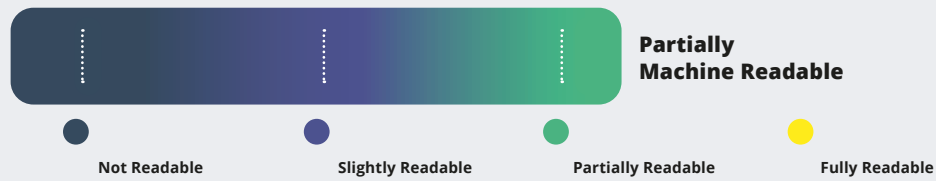
Table 14: How much of Botswana's land data and information is machine readable?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*Partially Machine-readable*	Blackhalls's Laws of Botswana's publicly available statutory laws (Principal and Subsidiary Legislation) of Botswana in force are in pdf and text formats. FAOLex and Ecolex link to PDF formats. The government's Botswana e-laws, laws.gov.bw and Parliament's Bills website could not be checked online.
Land Tenure Data	*Not Machine-readable*	There is no online government data.
Land Use Data	*Slightly Machine-readable*	Land use data is offline. The international sources are machine-readable.
Land Development Data	*Not Machine-readable*	There is no online development data.
Land Value Data	*Not Machine-readable*	There is no online land value data.
Other Land Data	*Not Machine-readable*	There are no local machine readable data sources other than the international sources that are machine-readable
Overall Score: Partially Machine Readable		

64   Open Data Handbook. **https://opendatahandbook.org/**

Criteria 10: Linked Data (Uniform Resource Identifiers - URI)

This criterion assesses whether land governance data is made available as Linked Data. Linked Data is "*structured data which is interlinked with other data so it becomes more useful through semantic queries. It builds upon standard Web technologies such as HTTP, RDF and URIs, but rather than using them to serve web pages only for human readers, it extends them to share information in a way that can be read automatically by computers. Part of the vision of linked data is for the Internet to become a global database.*"[65]

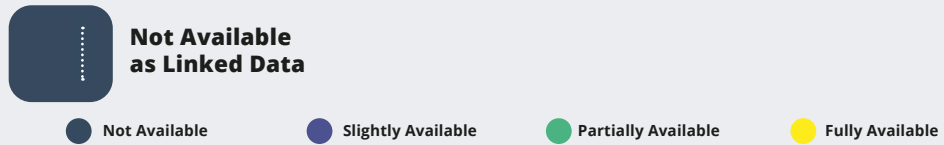**How much of Botswana's land related data is available as linked data?**

Not Available as Linked Data

● Not Available   ● Slightly Available   ● Partially Available   ● Fully Available

Table 15: How much of Botswana's land related data is available as linked data?

CATEGORY	SCORE	NOTES
Legal, Policy and Institutional Framework Data	*No Linked Data*	There is no reference to Linked Data.
Land Tenure Data	*No Linked Data*	There is no online government data.
Land Use Data	*No Linked Data*	Government land use information is offline. The international sources do not reference Linked Data
Land Development Data	*No Linked Data*	There is no online development data.
Land Value Data	*No Linked Data*	There is no online land value data.
Other Land Data	*No Linked Data*	The Africa Geoportal and the international sources do not reference Linked Data.
Overall Score: No Linked Data		

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65   What is linked data? Accessed Feb 11, 2022. **https://jsld.org/**

Conclusions

Botswana does not yet have access to information legislation and the Constitution does not explicitly guarantee the right of the public to access non-personal information. The research for this review has revealed that much of Botswana's land related and general information legislation seeks to keep data and information confidential and out of the public domain. This emphasis on confidentiality is reflected in the low score for the openness of Botswana's government data and information.

Little Land Data and Information is Open in Botswana

Overall there is little open land data and information in Botswana. Legal and policy data and information is partially open, but, with the exception of Blackhalls's statutory laws (Principal and Subsidiary Legislation) of Botswana in force, FAOlex, and EColex, is not up to date and is only partially accessible. Land tenure data, land value data and land development data are not open at all. Land use data is a little open, with such data generally being available only as pdf maps or as analogue data at the physical locations of the relevant government agencies. Blackhall's Laws of Botswana is a private bibliographic database and require a subscription fee[66] to be paid for clean acts, regulations and amended annotated acts and their regulations. Other land data such as agricultural data and mining data are partially open and work is needed to make them fully open.

Weak Legal and Policy Framework for Open Data

Botswana has no enabling legal framework and environment for opening up land data and information. There is no access to information legislation; an attempt was made to submit a private members bill to parliament in support of access to information; and there is a Data Protection Act. The land sector legislation has no clauses or sections that refer to access to information but has clauses focussed on restricting access to information or protecting the confidentiality of personal information. On the positive side the Statistics Act provides for the dissemination of public information.

Little Public Benefit from new Digitisation and Land Information Systems

Efforts have been made to improve the quality and quantity of existing digital land data but this information has not been made available for re-use. Initiatives such as the Land Information System (LIS) project aim to digitize and centralize land-related information. The Botswana Land Information System (BLIS) and the Botswana Spatial Data Infrastructure (BSDI) are only accessible to authorized users, such as government agencies or registered surveyors. The public is not benefitting from current initiatives to digitize Botswana's land data.

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66   https://www.botswanalaws.com/subscribe-online

Recommendations

Opening up land data and information is critical for improving land governance in Botswana's increasingly online and digital society and economy. The African Union is a key driver of change in moving African countries into readiness for digital systems and helping unlock economic and social innovation. Building on Botswana's progress digitizing its land information, the following recommendations seek to open up this data for improved land governance and innovative and legal re-use.

Initiate Urgent Legal and Policy Reforms

Botswana urgently needs to strengthen its legal and policy framework to provide a more enabling environment for publishing land data and information and enabling re-use. While Botswana already has a data protection law, it urgently needs to develop a corresponding access to information law.

- **Adopt the Model Land on Access to Information in Africa[67]**
  Using the Model Law on Access to Information endorsed by the African Union (2018), Botswana can move rapidly towards developing an access to information law. This is a critical initiative that would highlight access to information and facilitate an important political discussion in Botswana society on the right and need to access information. This law would also provide the framework to operationalise processes and agreements to share and re-use information and establish the right to information as an important legal principle. While this is a longer term reform that requires engagement with civil society, it is a very important first step.

- **Review current land policies, laws and other legal instruments**
  It is possible immediately to review existing legislation and clauses that deal with the public right to participate and to be informed about processes and procedures relating to good land governance. A review of existing laws, regulations and policies could help to identify opportunities to improve access to information clauses and consider adding "*digital information*" to the public consultation processes. Much of the current legislation providing for public access to information considers only physical access or manual inspections of records.

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67 https://www.chr.up.ac.za/images/researchunits/dgdr/documents/resources/model_law_on_ati_in_africa/model_law_on_access_to_infomation_en.pdf

Improve the Openness of Land Data and Information

Using the results of this assessment (open data criteria) and applying the Open Data Charter principles[68] would significantly enhance and clarify land information openness and protections.

- **Improve Use of Open Licenses**

    Botswana makes only partial use of open licenses. Adopting or developing an open data license regulatory framework or guidelines would enable the legal use and re-use of land data and information. Discussions and initiatives could draw on the existing data sharing and release information on the government data platforms as well as consider the free open licenses such as the Creative Commons Suite of International Licenses[69] which have been recommended for government use by, for example, New Zealand[70] and Australia.[71] An alternative would be to develop Botswana's own Open Government Licence, but this approach has long-term update cost and resourcing implications.

- **Improve Use of Metadata**

    Develop and maintain metadata standards. Develop a standard for metadata that includes information such as the title, description, creator, date, and format of the data. This will make it easier for users to find, understand and re-use the data.

- **Ensure Timeliness of Data**

    Regularly update and maintain land governance data. The government should establish regular data updating and maintenance processes to ensure that data is up-to-date and accurate and that stakeholders can rely on continually updated data for decision-making and re-use purposes.

Improve the Publication and Re-use of Land Data

In order to take advantage of initiatives such as the increasing volume of digital data and systems in Botswana, it is imperative that these initiatives engage not only the public sector, but also the private sector and the general public. To achieve the maximum benefit from data initiatives in Botswana and to use data for planning and decision making, data should be findable, accessible, interoperable and reusable. It is recommended that the government increase the publication of data in a manner that facilitates re-use by the private sector to maximize the benefit and impact.

- **Encourage private sector involvement**

    The private sector can play a significant role in supporting data management and drive innovations in private and public sector service delivery. The government should encourage private sector involvement by creating incentives for private companies to participate in data collection, analysis and re-use.

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68 https://opendatacharter.net/principles/
69 https://creativecommons.org/about/cclicenses/
70 https://www.data.govt.nz/toolkit/policies/nzgoal/
71 https://humanrights.gov.au/our-work/commission-general/copyright

- **Data Re-use for Greater Impact**
  The diffusion of data into daily governance functions and services requires that FAIR data is needed to power development. Data is only the means to an end, and therefore it is critical that it is made available to be accessed and used with the greatest ease and fewest reasonable restrictions to achieve the greatest impact.

Improving the publication and re-use of data in Botswana is in line with its **development framework (2017 – 2021)** which has the "*use of data for planning and decision making*" as a strategic priority. A clear and comprehensive policy on open land data can guide the development and release of land data among stakeholders, including government agencies, private sector, civil society organizations and the public.

Open Land Data Capacity Development

Agencies and entities in Botswana are accumulating increasing amounts of data in the delivery of their core functions. It is increasingly important that the development of open data capacity (e-skills) is prioritized to manage and govern this important resource to enable its effective use.

- **Strengthen Social Capacity for Open Land Data Initiatives**
  To ensure that data is accessible to all stakeholders, the government should work on improving e-skills across society. It has been shown that capacity building initiatives should address broad social skills that enable people and society to work effectively with data.

- **Strengthen Technical Capacity for Open Land Data Initiatives**
  Build the technical capacity of data producers and users, particularly in the areas of data collection, management, analysis, and visualization. This could involve training programs, mentorship opportunities, and other capacity-building initiatives. It is important to consider continuous and ongoing initiatives for capacity building on data collection, standards, governance and use to improve access and interoperability.

In general it is recommended that the government looks at international best practices that further the ideals of making the land information ecosystem more open and accessible for all stakeholders. This would include aligning Botswana's laws and policies with best practices.

Finally, the government of Botswana can use the findings of this review and its ramifications to improve the quality and quantity of legal and policy, land tenure, land value, land use, and land development data. This will support evidence-based decision-making in the land sector, promote economic growth and development and help ensure that land-related policies and programs are effective and equitable across the country.

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Notes