



Policy makes Practice: Open Science and Public Funding for the Public Good

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Director-Library & Information Services, Botswana Open University and Botswana Library Consortium Chairperson at the virtual panel organized as a side event to the High-Level Political Forum 2023 and hosted by the United Nations Dag Hammarskjöld Library and UNESCO.

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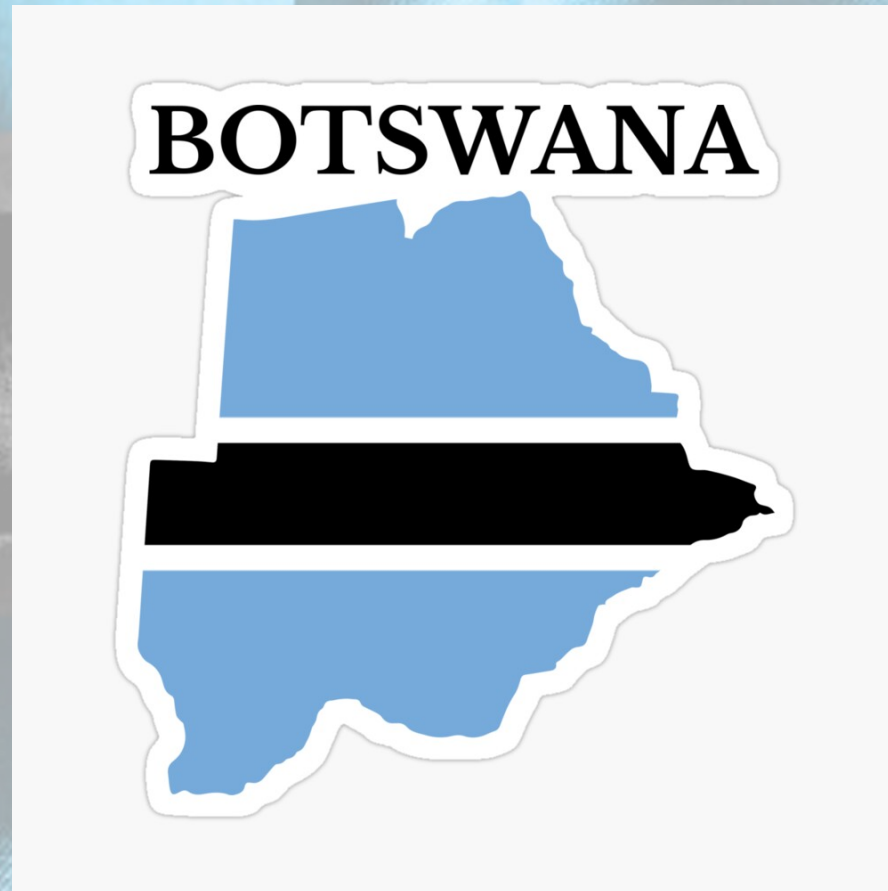
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Introduction

The purpose of this presentation is to :

- ▶ Share the journey (past and present)in which Botswana is going through in preparation to adopt and implement open science practices. In sharing we will look at the initial trials and initiatives that were/are and also appreciate the key players who relentlessly pursuit the journey.
- ▶ The presentation will put a microscope on the draft Open Science Policy key parts and conclude in showing where the footsteps are leading to in the journey.

Botswana



Botswana, officially the Republic of Botswana, is a landlocked country in Southern Africa. Botswana is topographically flat, with approximately 70 percent of its territory being the Kalahari Desert. ([Wikipedia](#) licensed [CC-BY-SA](#).)

At its independence in 1966 the country was one of the poorest and least-developed states in the world.

However, the country's rapid economic growth in the mid 2000s saw Botswana become an upper middle income economy state with GDP US \$60 to US \$4000 per capita per year (International Monetary Fund, 2016; World Bank, 2016)

Botswana



The estimated population of Botswana from the 2022 Population and Housing Census is **2,346,179** as compared to 2,024,904 enumerated in the 2011 ...

Botswana has one of the most iconic natural areas in the World, The Okavango Delta listed on 21st June 2014 as the 1000th World Heritage site, is a vast inland river delta in northern Botswana. It's known for its sprawling grassy plains, which flood seasonally, becoming a lush animal habitat. The Moremi Game Reserve occupies the east and central areas of the region. Here, dugout canoes are used to navigate past hippos, elephants and crocodiles

Botswana -Journey to Open Science Practices

- ▶ Following its independence in 1966 Botswana's miracle economic growth was based on its rich reserves of diamonds.
- ▶ Over time, the Government talked about diversifying and liberalizing its economy from its dependency on the mineral resources. One of the many ways it has come up with is putting more emphasis on research and knowledge management for national development.
- ▶ From early 2018 the Botswana Government set to build a knowledge workforce and relevance towards a Knowledge-based Economy through the Presidents' Reset Agenda. This will enable Botswana to compete effectively on a global platform, with efficient knowledge value additions in place.
- ▶ At international level Botswana is also obliged to meet the UNESCO Recommendations on Open Science as well as others like
- ▶ The Millennium Development Goals (MDG) etc.

Journey of Open Science Practices in Botswana

- ▶ In the past several initiatives driven by the civil society, public institutions, research communities have taken place to ignite the adoption of Open Science.
- ▶ Botswana Library Consortium (BLC) from Open Access(2010) to Open Science
- ▶ The Open Data Open Science (ODOS) established in 2017 by different stakeholders being academics, public bodies, business communities, information professionals and research communities to develop an open data open science policy that would enable data sharing and openness in science.
- ▶ Local Universities ;University of Botswana, Botswana International University of Science and Technology, Botswana Open University have been in the forefront of these initiatives.
- ▶ Research Institutions and individual researchers
- ▶ International and Continental Bodies :Electronic Information for Libraries, World Bank, WACREN- LIBSESNSE proving expertise and funding.

LIBSENSE - Library Support for Embedded NREN Services and E-infrastructure

WACREN – West African Central Research Education Networks

Botswana Open Science Symposium

- ▶ Held as off-site event of the UBUNTU.NET 2022 Conference on the 23rd November 2022 Gaborone Botswana (Botswana Innovation Hub).
- ▶ As the 4th iteration of the LIBSENSE National **Open Science** Roadmaps, LIBSENSE jointly with the Botswana Library Consortium(BLC),Ministry of Communications, Knowledge and Technology(MCKT), Botswana Research and Education Network (BotsREN),Ministry of Education(MOED) and Ministry of State President (MOSP) hosted a Botswana Open Science Symposium that led to the journey to develop Open Science and Open Data Policies in Botswana.
- ▶ We are greatly indebted to LIBSENSE for the support.

LIBSENSE - Library Support for Embedded NREN Services and E-infrastructure

Botswana Open Science & Open Data Policy

- ▶ Government's drive towards the development of Botswana Open Science and Open data Policies is at advanced stage.

Led by very critical organs of the Government ;the Ministry of Communications, Knowledge and Technology, Ministry of State President & Ministry of Education in collaboration with key stakeholders two working groups were formed to work towards development (December 2022).

- i. BOTSWANA OPEN SCIENCE POLICY &
- ii. BOTSWAN OPEN DATA POLICY

- ▶ Currently the policies are at different developmental stages and going through the necessary national policy development process.

Open Science Policy Framework

Vision

- ▶ Botswana will be a knowledge-based economy driven by Open Science by 2036.

Mission

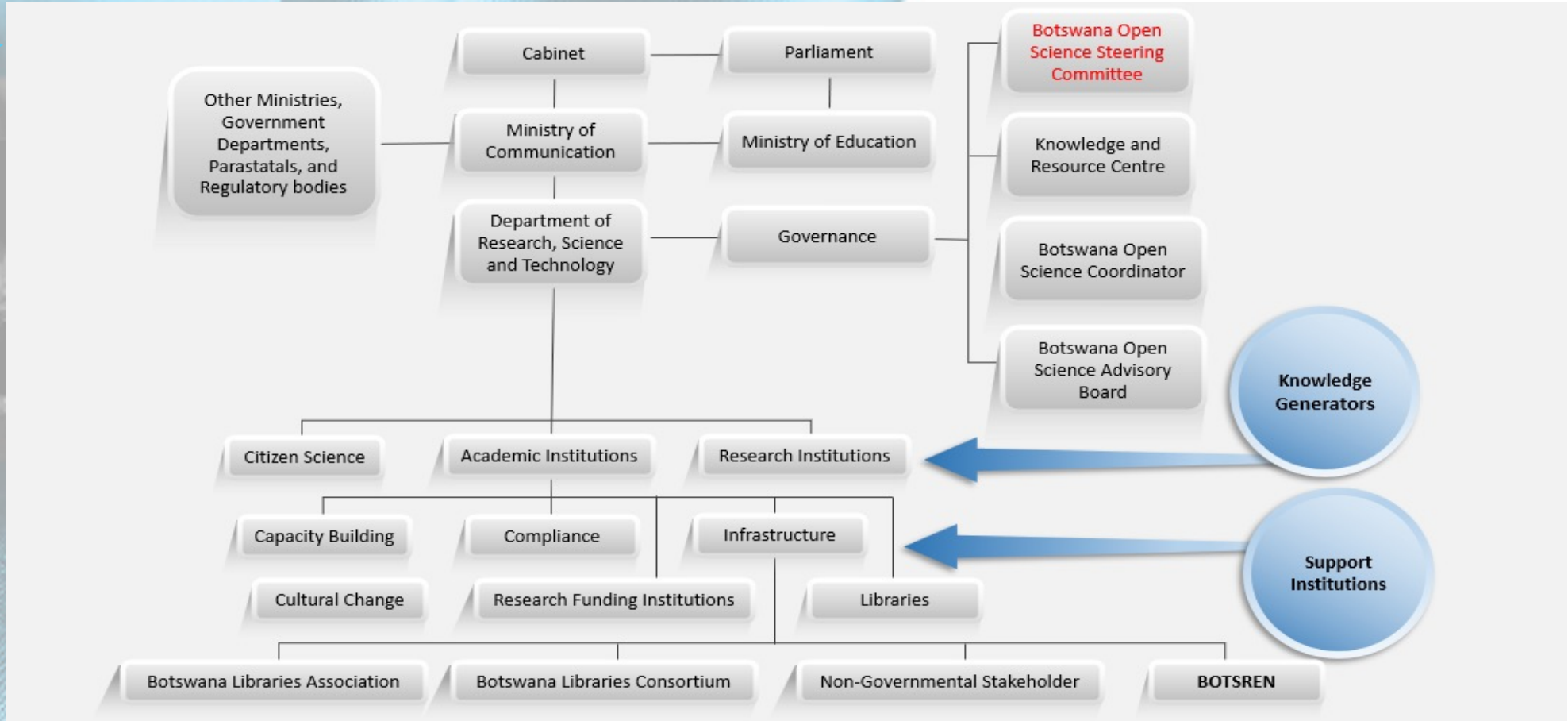
- ▶ To advance science and the wide dissemination of knowledge for the benefit of research and society by adopting practices on open, reproducible and responsible research.
- ▶ To provide a national framework for open science policy and practice that makes research more efficient, effective and relevant for society...and contributes to reducing the digital, technological and knowledge divides
- ▶ To advance the principles of social justice through promoting a culture of open sharing, mentorship and skills development. (SmartBotswana 2023)

Key Focus Areas of Open Science Policy

Some Key Focus Areas of the policy

- ▶ Promote a common understanding of open science, associated benefits and challenges, as well as diverse paths to open science;
- ▶ Put in place an enabling policy environment for open science, including legislative initiatives where appropriate;
- ▶ Invest in open science infrastructures and services;
- ▶ Invest in human resources and capacity building for open science;
- ▶ Promote innovative approaches for open science at different stages of the scientific process. (SmartBotswana 2023)

Proposed Draft Open Science Institutional Framework



Coordination and Collaborations

- ▶ Policy Implementation and coordination: led by Government through the relevant Ministries
- ▶ Digital Literacy Framework - Government of Botswana through SmartBotswana
(Modelled after the EU's DigiComp 2.0, the DCF is a reference framework for building the public sector and citizens' digital competencies with a clear scope of digital components and levels of proficiency that can be applied across different domains)
- ▶ Digital Literacy Implementation - Academics and Universities, Libraries, Colleges, Individual and Corporate Partners, UNICEF, NGOs, Community Leaders, EIFL, etc.
- ▶ Infrastructure: ICTS, REPOSITORIES, TELECOMMUNICATIONS, LIBRARIES, KNOWLEDGE CENTRES - Government, BOTSREN, BLC, National Libraries and other Libraries
- ▶ Research and Innovation Activities - Universities, Researchers, Civil Society, Corporate and business communities, Citizens, NGO Communities Etc

Challenges As We Journey

- ▶ Funding to support initiatives in regard to the implementation & adoption of Open Science
- ▶ Inadequate infrastructure and digital skills
- ▶ Resistance to change
- ▶ Government bureaucracy

Moving Forward With the Draft Policy

- ▶ Undertake a legislative review/alignment on the Open Science Policy - hosting Ministry & Legal Office/SmartBots
- ▶ Undertake stakeholder consultations and validation - a Retreat involving all key players on Open Science
- ▶ Prepare submission for Cabinet consideration and approval
- ▶ Prepare submission for Parliament consideration and approval - July 2023
Legislative sitting (SmartBotswana 2023)

Conclusion

The presentation has tried to:

- ▶ Walk the audience in Botswana's journey towards the development of Open Science and Open Data Policy
- ▶ The two policies are currently at different developmental stages with the Draft Open Science Policy ready to go through the validation process
- ▶ The Draft Open Data Policy is almost done and should be ready to undergo the necessary process.
- ▶ Government has developed a draft Digital Competency Framework with suggestions for critical stakeholders' participation.
- ▶ Looking at the above Botswana is at an advanced level in terms of Open Science Open Data Policies preparatory activities.



Thank you!!!

Any Questions?