KEY HIGHLIGHTS

Botswana Country Study June 2017

1. About Botswana

Botswana is a landlocked country covering 581,730 km^2. Botswana borders South Africa, Namibia, Zimbabwe and very marginally Zambia. Formerly a British protectorate known as Bechuanaland, Botswana gained independence in 1966. Since attaining democratic governance and a multiparty constitution, it has had significant capital investment and has a stable economy.

Botswana has maintained one of the world's highest economic growth rates since independence in 1966, mainly due to the mining of diamonds. The revenue earned from diamonds drives Botswana's economy and currently accounts for one quarter of GDP, approximately 85% of export earnings, and about one-third of the government's revenues.

In 2015, Botswana ranked 2 out of 54 African countries on the Mo Ibrahim Index which offers a comprehensive assessment of governance that informs and empowers citizens, civil society, parliaments and governments as a tool of measuring progress in governance.

22° 00' S and 24° 00' E

2.15million

$35.9B (PPP)

How is Botswana doing in terms of Information, Communication Technology, Education, Science Technology and Innovation which are the pillars of the African Leadership in ICT and Knowledge Society Development (ALICT) course?

2. Information Communication Technology

The telecommunications sector in Botswana has undergone various reforms since 1998 and the introduction of competition. Three public telecommunication operators provide local, international, national and mobile services.

Botswana has created a converged communications regulatory environment by establishing the Communications Regulatory Authority Act of 2012 to replace the previous separate regulation of telecommunications and broadcasting (Telecommunications Act and the Broadcasting Act). The Botswana Telecommunications Authority (BTA) was established as an independent regulatory body to create a communications regulatory environment in Botswana.

The Communications Regulatory Authority Act (2012) merged BTA and National Broadcasting Board (NBB) into the Botswana Communications Regulatory Authority (BOCRA), launched in 2013. BOCRA has the authority to regulate and supervise all aspects of telecommunication common carriers and service providers, and sets industry standards, setting tariff principles and appropriate guidelines.

ICT Policy Frameworks

Botswana has developed plans, policies and strategies to harness the power of ICT to drive the socio-economic development of the country. One of them is Maitlamo. This is the National Policy for ICT Development, approved in 2007, built on government initiatives and aimed to assist in achieving Vision 2016 by serving as a catalyst in achieving social, economic, political and cultural transformation within the country.

The vision of the policy states, “Botswana will be a globally competitive, knowledge and information society where lasting improvement in social, economic and cultural development is achieved through effective use of ICT.”

The other policy is the Universal Access and Services policy has been under development for some time. BOCRA published a draft Universal Access and Service Fund Manual in April 2014. The vision of the Universal Access and Services Policy is that all Botswana will have affordable voice communications and access to Internet and ICT services

ICT Infrastructure

Botswana has two diversified fibre links to South Africa, and radio links to Namibia, Zimbabwe and Zambia. There are also direct satellite links to UK, US, Canada as well as direct connectivity to London through SAT3 undersea cable.

The country has also invested in fibre-optic networks locally and internationally to ensure effective communication infrastructure. These include NEPAD-Led Undersea Cable, East African Submarine System (EASSy), West African Festoon System and West Africa Coast Cable System (WACS).

Mobile Penetration: Botswana has had growth of mobile subscriptions of more than 100% since 2009. Mobile subscriptions increased from 3,095,894 in March 2013 to 3,204,869 in March 2014.

The price of mobile internet has significantly decreased for both pre-paid and post-paid mobile services. The use of smartphones has led to increased number of people with access to the internet especially among the youth.

According to the BOCRA 2015 Annual Report, tele-density of mobile telephony was 168% in March 2015 and mobile internet penetration had increased from 49% in March 2014 to 59% in March 2015.

According to Botswana Communications Regulatory Authority, in 2015 there were 168,433 fixed phone lines subscriptions, 3.406 million mobile phone subscriptions and 34,435 broadband subscriptions. The fixed-line subscriptions increased from 162,718 in March 2013 to 174,992 in March 2014, a growth rate of approximately 8%. Over a ten-year period, fixed line subscriptions grew by 28%. Uptake of ADSL remains low due to low uptake of fixed telephone lines.

ICT4D Initiatives

The following initiatives are in lace now:

- A government web portal with information and e-services was developed for customers, and making the organizational structure of government more transparent to citizens and businesses.
- There are Toll free numbers at call centres in some ministries for customers to submit and enquire about basic information and services.
- Construction of a blue print service-oriented enterprise architecture (SOEA) system aimed at modernising ICT in the public service.
- An e-Public Libraries project run by the government aimed at providing free internet access and free computer training in libraries and reading rooms throughout the country. Librarians receive computer and internet training so that they can assist users.

Challenges in ICT Development

- Lack of a synergized policy, legislative and regulatory regime that can encourage and facilitate a conducive and permitting environment for organizations and individuals to invest in and use ICT.
- Inadequate electricity supply in the rural areas also proves to be a hindrance towards internet usage coupled with high costs of computer hardware.
- Lack of ICT skills for the rural folk

3. Education

The Ministry of Education and Skills Development (MoESD) is responsible for basic education in Botswana, and has the mandate for curriculum development, recruitment of teachers and their administrative matters and provision of textbooks for the students and the teachers. The Ministry of Local Government holds the responsibility of providing school infrastructure and food services.

The Country runs a college based programme offering project roles, work placements and internships with industries. It prepares the youth for further education and employment.

In 2015, Botswana began to integrate ICT into teaching and learning. It has been working on capacitating staff members to create new, and adapt existing print-based programmes, courses for access using e-learning technologies.

Challenges facing the education sector

- Cultural and language barrier in the early stages of schooling. The education policies cater for two languages being English and Setswana however teaching in these languages at to entry level school-going children is a challenge for children who are only fluent in their mother-tongues.
- High costs of internet connectivity
- Lack of use of ICT to support the pedagogy and delivery of other non-ICT subjects.

4. Science, Technology, and Innovation (STI)

In Botswana, the Science Technology and Innovation (STI) portfolio falls under the Ministry of Infrastructure, Science and Technology (MIST). The core mission of this Ministry is to 'deliver quality building infrastructure, promote socio-economic oriented technological research, and the safe application of nuclear technology, in partnership with its stakeholders to enhance economic diversification and efficiency'

The government has reviewed the Science and Technology policy to align it with other major strategic frameworks, such as Botswana's Vision 2016, NDP 10 and the United Nations' Millennium Development Goals.

Further efforts in Technology and Innovation saw the establishment of the Botswana Institute of Technology Research and Innovation (BITRI) in 2012 to conduct needs-based research and development in focused areas.

Challenges facing the STI sector

1. Lack of ICT Skills
2. Inadequate funding for ICT related projects and initiatives
3. Lack of coordination between tertiary institutions and STI industry players to assess the market demands for skills and research
4. Low participation of women in science, technology, engineering and mathematics
5. Tertiary level research has almost exclusively been centered on the only two public universities (University of Botswana and Botswana International University of Science and Technology) with very little capacity or opportunity for research existing in the rest of the system.

5. In conclusion:

Policies, strategies, and plans are well aligned to KS development goals as articulated in Vision 2036.

Progress in implementation of policies and frameworks has been hindered by infrastructural issues, human capital deficits, and lack of adequate funding.

Economic success to date has not depended on technological advancement.

There are several contradictions in Botswana's development – for example, it ranks very highly in Africa with regard to its ICT platform, but has low penetration and internet usage. Investments in broadband infrastructure have not directly translated to cheaper internet access, and operators do not appear to have taken advantage of focusing on retail or the last mile.

Ministries responsible for ICT, Education, and STI lack cohesiveness and inter-linkages, and progress on their agendas are independent of one another. For example, the education sector appears prepared with regard to the training of teachers, introducing computers and internet connectivity across all the schools. However, its success is hampered by the lack of internet connectivity and electricity.

There is low participation of women in science, technology, engineering, and mathematics. Also, the over-reliance on the mineral resources has placed the STI pillar of the KS at a very low priority, although it is now being considered to diversify the country's economic portfolio.

Key partners/players

- Ministry of Trade and Communication
- Botswana Telecommunications Authority (BTA)
- Botswana Communications Regulatory Authority (BOCRA)
- Botswana Telecommunications Corporation (BTC)
- Mascom
- Orange
- beMobile
- Botswana Fibre Networks (BoFiNet)
- Ministry of Education and Skills Development
- Ministry of Tertiary Education, Research, Science and Technology
- Ministry of Local Government and Rural Development holds
- Botswana Vaccine Institute (BVI)
- Botswana Institute for Development Policy Analysis (BIDPA)
- University of Botswana
- Botswana International University of Science and Technology (BIUST)
- Botswana College of Distance and Open Learning
- Botswana Qualifications Authority (BQA)
- Ministry of Infrastructure, Science and Technology (MIST)
- Department of Research Science and Technology (DRST)
- Department of Building and Engineering Services (DBES)
- Botswana Institute for Technology Research and Innovation (BITRI)
- Botswana Innovation Hub
- Centre for Applied Research

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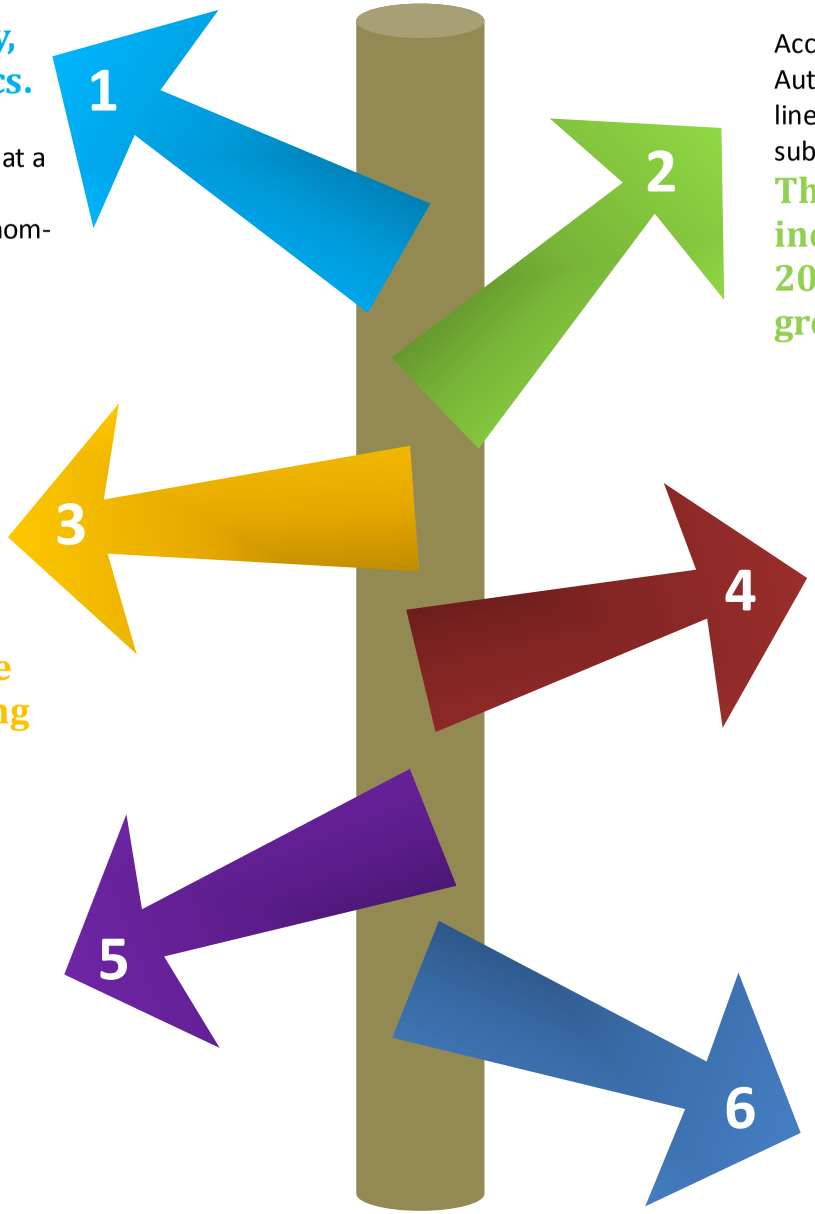

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INTERESTING FACTS ABOUT KS DEVELOPMENT IN BOTSWANA

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