Opportunities and Policy Actions to Maximise the Demographic Dividend in Botswana

Demographic Dividend Study Report

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OPPORTUNITIES AND POLICY ACTIONS TO MAXIMISE THE DEMOGRAPHIC DIVIDEND IN BOTSWANA

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Acronyms

ACSD	Accelerated Child Survival and Development
AFIDEP	African Institute for Development Policy
AIDS	Acquired Immune Deficiency Syndrome
BCWIS	Botswana Core Welfare Indicator Survey
BAIS	Botswana AIDS Impact Survey
BIDPA	Botswana Institute for Development Policy Analysis
BOTA	Botswana Training Authority
CTT	Core Technical Team
DD	Demographic Dividend
DPRU	Development Policy Research Unit
DTEVET	Department of Technical and Vocational Education and Training
ETSSP	Education and Training Sector Strategic Plan
ESARO	East and Southern Africa Regional Office
FDI	Foreign Direct Investment
FP	Family Planning
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GER	Gross Enrolment Rate
GGI	Gender Gap Index
GNI	Gross National Income
HAART	Highly Active Antiretroviral Therapy
HDI	Human Development Index
HIC	High-income Country
HIV	Human Immunodeficiency Virus
HRDC	Human Resource Development Council
ICPD	International Conference on Population and Development
ICT	Information and Communications Technology

ILO	International Labour Organisation
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
ISPAAD	Integrated Support Programme for Arable Agriculture Development
LEB	Life Expectancy at Birth
LIC	Low-Income Country
LMIC	Lower-middle-income Country
MCH	Maternal and Child Health
MoESD	Ministry of Education and Skills Development
MoHW	Ministry of Health and Wellness
MMR	Maternal Mortality Ratio
NACA	National AIDS Coordinating Agency
NCD	Non-communicable Disease
NCQF	National Credit Qualifications Framework
NDP	National Development Plan
NER	Net Enrolment Rate
NHRDS	National Human Resource Development Strategy
NTA	National Transfer Accounts
NTS	National Transformation Strategy
PMTCT	Prevention of Mother to Child Transmission
RNPE	Revised National Policy on Education
SACU	Southern Africa Customs Union
SADC	Southern Africa Development Community
SDG	Sustainable Development Goals
SGDI	SADC Gender and Development Index
SSA	Sub-Saharan Africa
TEP	Tertiary Education Policy
TVET	Technical and Vocational Education and Training
TFR	Total Fertility Rate
U-5MR	Under-5 Mortality Rate

UMIC   Upper-middle-income Country

UNDP   United Nations Development Programme

UNFPA United Nations Population Fund

WGI   Worldwide Governance Indicators

WHO   World Health Organisation

Acknowledgements

Executive Summary

Botswana's socio-economic development aspirations as spelt out in its current long-term development strategy, Vision 2036, is to graduate from being an upper-middle-income country (UMIC) to a high-income country (HIC) with prosperity for all. Demographic change has implications for the realisation of these ambitions. This study set out to analyse the population dynamics and age-structure changes in Botswana in the medium to long-term and the implications these will have on the ability of the country to maximise its Demographic Dividend (DD). The Demographic Dividend refers to the temporary economic benefit that can arise from a significant increase in the ratio of working-age adults relative to young dependents that results from fertility decline - if this change is accompanied by sustained investments in education and skills development, health, job creation and good governance. The DD paradigm offers a framework that is congruent with the needs of Botswana's long-term development aspirations as well as the Sustainable Development Goals (SDG) agenda.

Botswana's population of just over 2 million people at the last national census in 2011 is projected to rise to 3.4 million by 2050. Relative to most countries in Sub-Saharan Africa, it is at an advanced stage of the demographic transition. Its current estimated total fertility[1] is 2.9 children. This is substantially lower than in the 1960s when Batswana women were having an average of at least six children, and much lower than the current sub-Saharan Africa average of 5. The annual rate of fertility decline in recent years has slowed to 0.6% compared to 3.2% per annum in the 1990s, which might be a signal that the decline in fertility may stall at a much higher rate than the replacement fertility of 2.1. The declines in fertility and mortality in Botswana have resulted in its age-structure shifting from one with more child dependents to one with significantly more people in the economically productive ages. About two-thirds of the population today is between the ages of 15-64 years, often referred to as the working-age population. This puts Botswana within the temporary window period in which to harness the first DD over the next few decades before the age structure further shifts and becomes dominated by old-age dependency.

This study reviewed Botswana's demographic and economic opportunities and challenges; modelled the DD using the National Transfer Accounts (NTA) methodology; and identified key policy options to optimise the chances of earning a maximum DD to accelerate the achievement of Botswana's long-term development aspirations outlined in Vision 2036. The NTA framework was used to demonstrate the timing of the demographic

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[1]The average number of children a woman would expect to have during her reproductive life, given the current age-specific fertility rates.

window of opportunity to harness the DD, to estimate components of the lifecycle deficit (labour income and consumption), and to estimate the first DD. Chapter 7 of this report describes the NTA and its application for the purposes of this study.

The analyses in this study demonstrates Botswana's window of opportunity for harnessing the first demographic dividend opened before 1990, while the magnitude of the first demographic dividend peaked in 2008 and it is now in the diminishing returns phase until around 2050 when the window of opportunity will close. This study shows that the cumulative boost in living standards emanating from the first demographic dividend between 1990 and 2060 will be 36%. Of this, 24% has already been accumulated between 1990 and 2015 while the remaining boost of 12% will accrue between 2015 and 2060, assuming the country follows the Medium fertility variant of the UN population projections.

Two other critical features of Botswana's NTA profile is that young people remain dependent till age 32 when they start producing more than they consume and that the country has a uniquely high level of consumption that has produced a huge lifecycle deficit (between consumption and labour income). The deficit is financed by the government from the proceeds of the country's finite mineral resources. In short, Botswana is not living within its means, which is not sustainable in the long-term.

Moving forward, the big question is what can Botswana do to position itself to maximise what is left of its first demographic dividend and use this opportunity to hasten the achievement of the Vision 2036 development aspirations? There are primarily four policy areas where the country can intervene to maximise the demographic dividend:

1. **Prioritise economic reforms and investments to urgently accelerate creation of jobs and other well-paying livelihoods for the country's youth, who continue to be dependent up to age 32.** The first component of this priority entails focusing on diversifying the economy to expand sectors with high job multiplier effects, reforming the agricultural sector to be more attractive to youth, providing incentives to companies that consciously create livelihood opportunities for youth, and empowering youth with resources and technical capacities to start and grow businesses. The second component, which is more immediate, entails enhancing the quality of and rebranding TVET as an attractive route for re-skilling the thousands of out-of-school youth who did not make it to tertiary colleges. This will enhance the employability of youth and their prospects to engage in well-paying and sustainable livelihoods, including owning businesses. This study shows that boosting Botswana's job creation capacity for young people to follow the global median profile for other countries with NTA data would boost living standards of the population by about 20.5% between 2015 and 2035.

2. **Optimising value for money to create a globally competitive skilled workforce:** Botswana is already spending considerable resources on education; however, it is not getting value for money for its investment. This anomaly is illustrated by under-performance of Botswana students on the quality of learning measures against global benchmarks and when compared with fellow middle-income countries as well as persisting skills mismatch between the needs of the labour market and the skills that the education system produces. To address this, the country should immediately form a high-level commission on addressing the declining education quality to lead the country's determination to examine and decisively address what is ailing its relatively well-funded education sector. The reform agenda should include revamping the whole education pipeline (including early childhood education, primary school, secondary school, and tertiary colleges) to address all inequities in access and quality bottlenecks, and facilitate the strategic shift from the current knowledge-based to the competency-based curriculum that is focused on developing practical technical and soft skills that are critical for success in the globally competitive labour market. At the centre of these reforms is ensuring that all teachers are well motivated and trained in learner-centred pedagogies, and that the learning environment has the required learning materials to facilitate skills development.

3. **Reinforcing investments in health and family planning to prevent unplanned pregnancies and ensure a healthy labour force:** Botswana should reinforce investment in public health to consolidate progress it has made in improving child and maternal health outcomes and in improving the health and overall well-being of its workforce through various interventions, including the successful HIV and AIDS treatment programme. The country should reinforce health promotion to prevent lifestyles that predispose workers to non-communicable diseases and enhance the capacity of the health system to manage these and other emerging health challenges. The family planning programme should also be reinforced to prevent unplanned pregnancies, particularly among adolescent girls and youth. The evidence from this study shows what if Botswana's birth rate remains at the current level of 3 births until 2060 the cumulative boost in living standards emanating from the demographic dividend will be 9%. However, if the country sustains or reinforces its family planning programme to prevent unplanned pregnancies, the total fertility rate will most probably decline to about 2.0 births per woman by 2050, and the demographic dividend will provide a cumulative boost to living standards by 19%.

4. **Strengthening enabling factors for optimising the demographic dividend:** In order to lay the foundation for Botswana to be successful in the reforms noted above, the country needs to have strong public institutions that will enforce the rule of law and systems that will ensure accountability in service delivery and use of public resources. In line with Vision 2036 priorities, the country should reinforce its performance management system to entrench a culture of performance-based work in both the public and private sectors. This discipline will also ensure efficient and effective delivery of public services, help bridge the policy to action gaps, and make the country attractive for investors. Ensuring gender equity and empowerment of women to enable them fully participate in the labour market will greatly boost the country's chances of maximising its

first demographic dividend but even more critically its second demographic dividend. In order to monitor its progress and ensure accountability in its demographic dividend journey, Botswana needs to reinforce its investments in data and evidence generation and use systems and capacities to ensure well-informed decision-making and planning. Prioritising environmental preservation is also a central development priority and in line with the SDG agenda for the country.

This study shows that Botswana does not have the luxury of long-term planning to maximise the first demographic dividend. Therefore, the government and all development actors should act with urgency and implement game-changer interventions that will enable the country to take full advantage of the demographic dividend to achieve its long-term development aspirations (articulated in Vision 2036) to become a fully modernised high-income country.

1 **Introduction**

Botswana is one of the few Sub-Saharan Africa (SSA) countries that have achieved sustained economic growth since its independence in 1966. From a low-income country (LIC) with per capita gross domestic product (GDP)[2] of USD 84 in 1966, the country has graduated to the rank of upper-middle-income countries (UMIC) with per capita GDP estimated at USD 7,153 in 2014 (World Bank, 2017). Botswana's ambitious socio-economic transformation aspirations are well articulated in Vision 2036, which seeks to graduate the country to the next level of socio-economic development radar and become a High-income country (HIC) (Government of Botswana, 2016).

Botswana's population has grown more than fourfold from about 523,000 in 1960 to 2 million in 2011 (Statistics Botswana, 2014). However, relative to its geographic size, Botswana is sparsely populated. The country has experienced a notable demographic transition from high birth and death rates to relatively low birth and deaths rates over the past 55 years or so. Its average birth rate declined from 6.6 children per woman in 1960 to 2.9[3] children in 2015. Botswana's current birth rate is relatively low compared to most countries in SSA where the average total fertility rate (TFR) is 5 children per woman. Under-five mortality rates have declined from 182 to 28 deaths per 1,000 births over the same period.

Population change has important implications for socio-economic development and planning. Big populations that are well educated and with strong purchasing power can provide valuable markets and propel socio-economic transformation and wealth creation. However, countries with high birth rates are characterised by rapidly growing and youthful populations with high child dependency ratios, which can be serious bottlenecks to socio-economic development. The transition from high to low levels of fertility and mortality can present countries, irrespective of size of the population, with a temporary window of opportunity for accelerated economic growth and socio-economic transformation if appropriate youth-focused investments are made. The Demographic Dividend (DD) refers to the temporary economic benefit that can arise from a significant increase in the ratio of working-age adults relative to young dependents that results from fertility decline (Bloom et al. 2014). The DD can last between 20-50 years, and its magnitude is dependent on the level of investments in human capital to increase productivity, creation of jobs, and an environment that encourages investments and savings (Lee et al. 2003). The logic is that as fertility declines then in theory, households and nations have more resources per child to invest in education and child health, thus enhancing the overall human capital (Canning et al. 2015).

The economic benefit that arises directly from the initial increase in the proportion of working-age population relative to dependent children is called the First Demographic Dividend while the long-term economic benefits that result from the enhanced quality of human capital due to increased investments per child, increased savings and investments of the working-age population, and improved well-being and life expectancy (which enables people to work longer before retiring) is the Second Demographic Dividend (Bloom and Graham, 2003; Bloom and Canning, 2001; Bloom and Williamson, 1998). Essentially the second DD evolves as the first dividend is waning,

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[2] Per capita GDP in Current US dollars

[3] A further analysis of the 2011 Botswana Population and Housing Census suggests that it is likely that the reported fertility rate was biased downwards and estimate the TFR in 2011 at 3.2. Similar re-analysis of the 2001 census analysis on fertility also suggested a re-adjustment of the TFR from the reported 3.27 to 4.1. See Statistics Botswana. (2015). Population Projections for Botswana, 2011-2026.

when there is a reduction in the working-age cohort due to population ageing (Mason and Lee 2007). A country must have in place the right policies and a well-developed financial sector to incentivise savings and investments if it is to reap the second DD (Canning et al. 2015). Unlike the first DD, the second dividend is not transitory, in that a permanent increase in capital and per-capita income could accrue as the initial youth bulge goes through the working-ages and later transitions into the older ages (ageing) (Lee et al. 2003).

Analyses of the phenomenal socio-economic development that the East Asian countries such as South Korea, Singapore, Taiwan and Malaysia experienced between 1970 and 2000 indicate that between a quarter and a third of the economic growth that these countries experienced can be attributed to the DD (Bloom and Williamson, 1998; Bloom, D.E., Canning, D., and Malaney, P., 2000). It should be noted that both the first and second DDs are not automatic or guaranteed. In order to earn or maximise the level of the first and second DD, countries should make deliberate strategic investments to ensure that the workforce is well educated, skilled, healthy, and that there are adequate quality jobs for them. There are five areas where investments are needed to maximise the chances of reaping a DD (Figure 1.1). Like interlocking gears, these areas or pillars are interrelated and each is integral to the success of the rest.

Figure 1.1: Five policy wheels for creating and maximising the Demographic Dividend
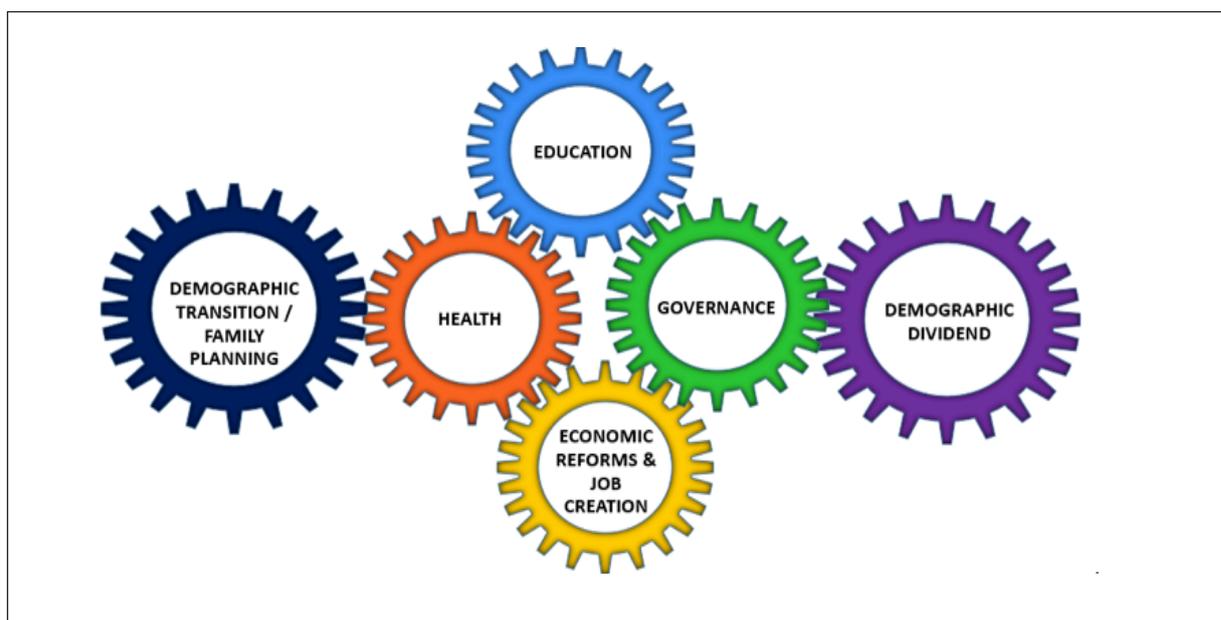
Source: Adapted from African Union Commission and ECA (2013)

Five policy pillars for harnessing the Demographic Dividend:

1. Accelerating demographic transition through investments that facilitate rapid fertility decline, including the provision of family planning services and effective contraceptive methods, improved child survival, and education and empowerment of women;

2. Investing in transformational education to develop a well-educated, skilled and innovative labour force;

3. Providing high-quality health services to nurture a healthy and productive labour force;

4. Enabling economic reforms to accelerate economic growth, increase productivity, incentivise household savings, and job creation for the rapidly expanding labour force; and

5. Ensuring good governance and accountability to ensure the rule of law, efficiency in delivery of services, and accountability in the use of public resources.

The World Economic Forum has summarised these critical investment pillars for harnessing the DD into the 3E policy framework - Empower, Educate, and Employ (World Economic Forum, 2015). Empowerment underscores the need to ensure that all people have the rights and freedom to define their lives, when and how many children to have, pursue an education, join the productive workforce, and accrue wealth. These rights include ensuring that there is universal access to voluntary family planning to ensure that every pregnancy is planned and couples freely choose when they want to have children and the number of children to have. Furthermore, all young people, especially girls, need to be free from coercive and often premature marriage and childbearing, which undermines their health and potential to receive the education they need to contribute to development as economic actors and entrepreneurs.

The Education component calls on countries to deliver transformative education and learning that will transform Africa's youthful population into a driving force for socio-economic transformation. The aim is to equip scholars with the critical skills and the expertise they need to propel and take advantage of new industries and innovations required to accelerate economic growth, job creation, wealth creation, and to excel in the competitive global economy.

The Employment component calls for economic reforms to create mass quality jobs for the youthful working-age population. The East Asian countries popularly known as the Tigers, such as South Korea and Singapore, relied on employment opportunities from export-led industries in the manufacturing and service sectors. African countries need to explore economic reforms that take advantage of the increasing global and regional economic integration and emerging opportunities in information and communications technology (ICT) and expansive extractive industries to accelerate their economic growth and job creation agenda.

One notable area where the 3E policy framework is not explicit is on governance and accountability in use of public resources and in service delivery. The framework partially addresses this shortfall by adding three other Es to ensure that the investments, policies and programmes are Effective, Efficient and Equitable [3E][2].

1.1   Study objectives

As Botswana explores policies and programmes to enable the country graduate to a high-income country status, a big question relates to whether the country can take advantage of the DD paradigm, as was the case with the emerging economies of East Asia like South Korea and Singapore. The primary objective of this study is to assess Botswana's prospects for harnessing the DD and to identify priority options for maximising the dividend. The specific objectives of the study are:

I.   To review demographic and economic opportunities and challenges and assess their implications for attainment of the country's development aspirations.

II.   Use the National Transfer Accounts (NTA) methodology to

   a.   Determine the timing of the window of opportunity for harnessing the DD in Botswana,

   b.   Estimate the components of the lifecycle deficit (labour income and consumption), and their sub-components; and

   c.   Conduct simulations of the first Demographic Dividend based on the NTA estimates and population projections.

III.   Identify key policy options for optimising chances of earning a maximum DD in Botswana in the light of its long-term development aspirations.

1.2   Methodology

The study employed a combination of methodologies including data compilation and review of literature, secondary analysis of data, scenario building, modelling, and identification of policies for optimising the country's chances of harnessing the DD.

Data compilation and desk review

The study used national data sets and international data from the UN family, World Bank and the International Labour Organisation (ILO). For example, data from the national population and housing censuses, national accounts and population projections from Statistics Botswana, the Botswana Core Welfare Indicators Survey (BCWIS) 2009/10 and administrative data from various government agencies, were used. Where data were not available from national sources, we used data from key UN and World Bank databases. Comparative data from the same international databases on economic indicators such as GDP, urbanisation, health, and education were compiled to compare Botswana with other countries in Africa and other regions.

The study also involved a review of literature on the DD in general and of Botswana's various development policies to understand the country's long-term and short-term development aspirations. The review helped identify key development challenges, explore potential solutions, and assess how the DD framework aligns with the attainment of the country's development aspirations.

Modelling the Demographic Dividend

The National Transfer Accounts (NTA) framework was used to demonstrate the timing of the demographic window of opportunity to harness the DD and to estimate components of the lifecycle deficit (labour income and consumption), and their sub-components. Additionally, the framework was employed to conduct simulations of the first DD. The NTA framework was developed to analyse what is referred to as the `generational economy', which can be described as "the social institutions and economic mechanisms used by each generation or age group to produce, consume, share, and save resources" Mason and Lee (2011, page 7). Chapter 7 of this report gives a more detailed description of the NTA and its application for the purposes of this study. The manual describing the full process of the NTA methodology can also be accessed at http://ntaccounts.org/web/nta/show/Methodology.

Consultative workshops and roles of various institutions

The Ministry of Finance and Economic Development in collaboration with UNFPA Botswana Country Office, convened the DD Core Technical Team (CTT) comprising over 20 government officials, academics and stakeholders from various sectors. The African Institute for Development Policy (AFIDEP) supported by the Development Policy Research Unit (DPRU) of the University of Cape Town and national consultants from the University of Botswana provided the technical leadership in conducting the study. DPRU provided technical expertise on the NTA methodology. The Ministry of Finance and Economic Development and the University of Botswana co-chaired the CTT, which was responsible for the analysis and report writing. The Ministry of Finance and Economic Development chaired the National Steering Committee for the study. The Committee comprised representatives from government, parastatals, private sector and the University of Botswana. The steering committee provided technical oversight of the project and validated and approved the inception report and the final technical report.

During the course of the study, the CTT took part in several participatory workshops. The first was geared towards the elucidation of the concept of the DD and a status review of Botswana's population dynamics and linkages to its social and economic dependence. A webinar on the NTA methodology with the technical leads in the study was conducted in August 2016. This was followed up by a workshop between November 21st and 25th 2016 to validate the analysis and findings of the study. Several meetings were subsequently held at various points to contribute to the writing and validation of the study report and representatives from key government ministries and agencies as well as other stakeholder provided feedback incorporated in the final report. A full listing of the members of the CTT is contained in Appendix II.

2 | Botswana's Demographic Profile

Botswana is a sparsely populated country with its population of just over 2 million people at the last national census in 2011 translating to a population density of 3.5 people per square kilometre (Statistics Botswana, 2014). The population is projected to rise to 3.4 million and 3.6 million in 2050 and 2070 respectively (see Table 2.1). The country is among a few in SSA that are at an advanced stage of demographic transition. Its total fertility rate is one of the lowest in the region and was estimated at 2.9 per woman in 2011. This represents a significant decline from the more than six children women had on average at independence in 1966. UN Projections show that fertility is expected to continue declining and will have dropped below the replacement level of 2.1 by 2050 (United Nations, 2015).

Table 2.1: Botswana - demographic estimates and projections

Population characteristics	1960*	2011†	2015‡	2050*	2070*
Total Fertility Rate (TFR) - Number of children per woman	6.6	2.9	2.9	2.0	1.82
Population growth rate	2.2	2.3	2.0	0.7	0.2
Population by broad age groups (in thousands)					
Age 0-14	239	660	724	743	680
Age 15-34	166	789	872	1,029	989
Age 35-64	98	475	585	1,265	1,430
Age 65+	20	101	80	355	575
Total population (in thousands)	**523**	**2,025**	**2,261**	**3,392**	**3,674**
Proportion of children and young people in the population (%)					
Children, 0-14 years	45.7	32.6	32.0	21.9	18.5
Adolescents and youth, 10-24 years	29.6	34.6	29.3	22.1	19.6
Dependency					
Dependency ratio (number of dependents 0-14 years and 65+ years relative to the numbers of people in the working-ages 15-64 years)	0.981	0.602	0.552	0.479	0.519
Child Mortality					
Infant Mortality Rate (IMR)	124	17	17	15	11
Under-5 Mortality Rate (U-5MR)	182	28	28	18	13
Urbanisation					
Percentage of total population residing in urban areas	3.1	52.0	57.4	69.9	-

*Source: *UN World Population Prospects – the 2015 Revision; UN World Urbanisation Prospects: the 2014 Revision; †Botswana Population and Housing Census 2011 Analytical Report; ‡Botswana Population Projections 2011-2026*

The significant decline in fertility and mortality in Botswana in the last five decades has resulted in its age-structure shifting from one with more dependent children to one with significantly more people in the economically productive ages. The census in 2011 estimated that the country had a dependency ratio of 0.6, meaning that for every 100 people between the ages of 15-64 years, there were 60 people who were either child dependents (0-14 years) or old age dependents (65+ years). The actual proportion of children under age 15 declined from 45.7% in 1960 to 32% in

2015. This age structure shift provides the country with an opportunity to accelerate its socio-economic development agenda through the first DD over the next few decades before the age structure further shifts and becomes dominated by old-age dependency.

Figure 2.1 compares Botswana's demographic transition with those of a selection of other countries in Asia (Indonesia, Malaysia and South Korea) and Africa (South Africa and Tunisia). All six countries have undergone significant demographic transition between 1960 and 2015 when their total fertility rates declined from 6 or more children per woman to less than 3 children per woman, albeit at different rates. A case in point is the contrast between Botswana and South Korea, a country noted to have reaped a significant DD. In 1960, both countries had quite similar demographic profiles with total fertility rates estimated at 6.6 and 6.3 children per woman in Botswana and South Korea respectively. While South Korea's TFR had declined to about 1.3 by 2015, Botswana's decline has been much slower and fertility was estimated at 2.9 by 2015. As a result, the population pyramids for the two countries were markedly different by 2015 with South Korea having a much larger proportion of its population in the working-ages relative to dependents when compared to Botswana.

Figure 2.1: Demographic transition: Age structures for Botswana and selected countries in Asia and Africa in 1960
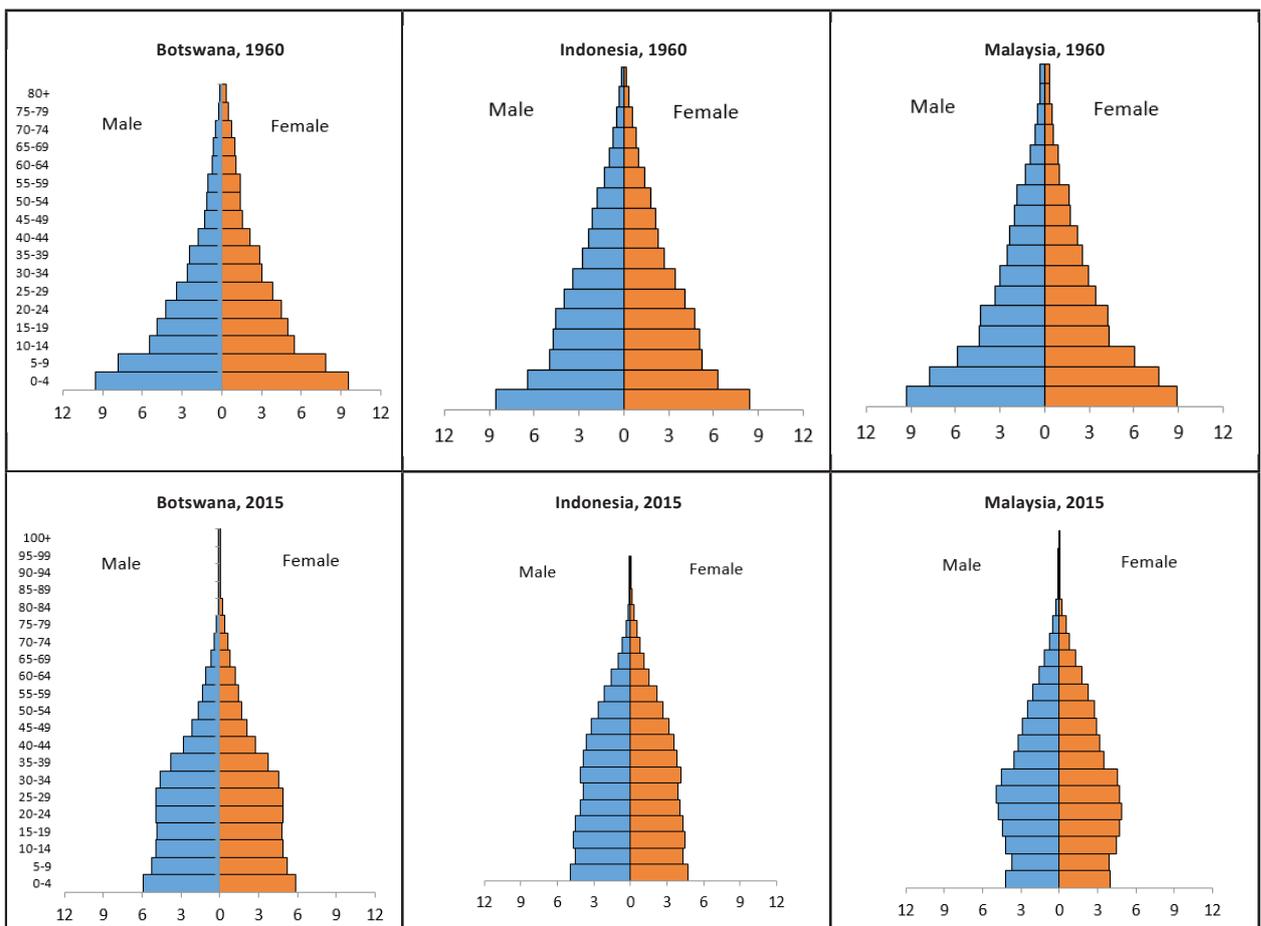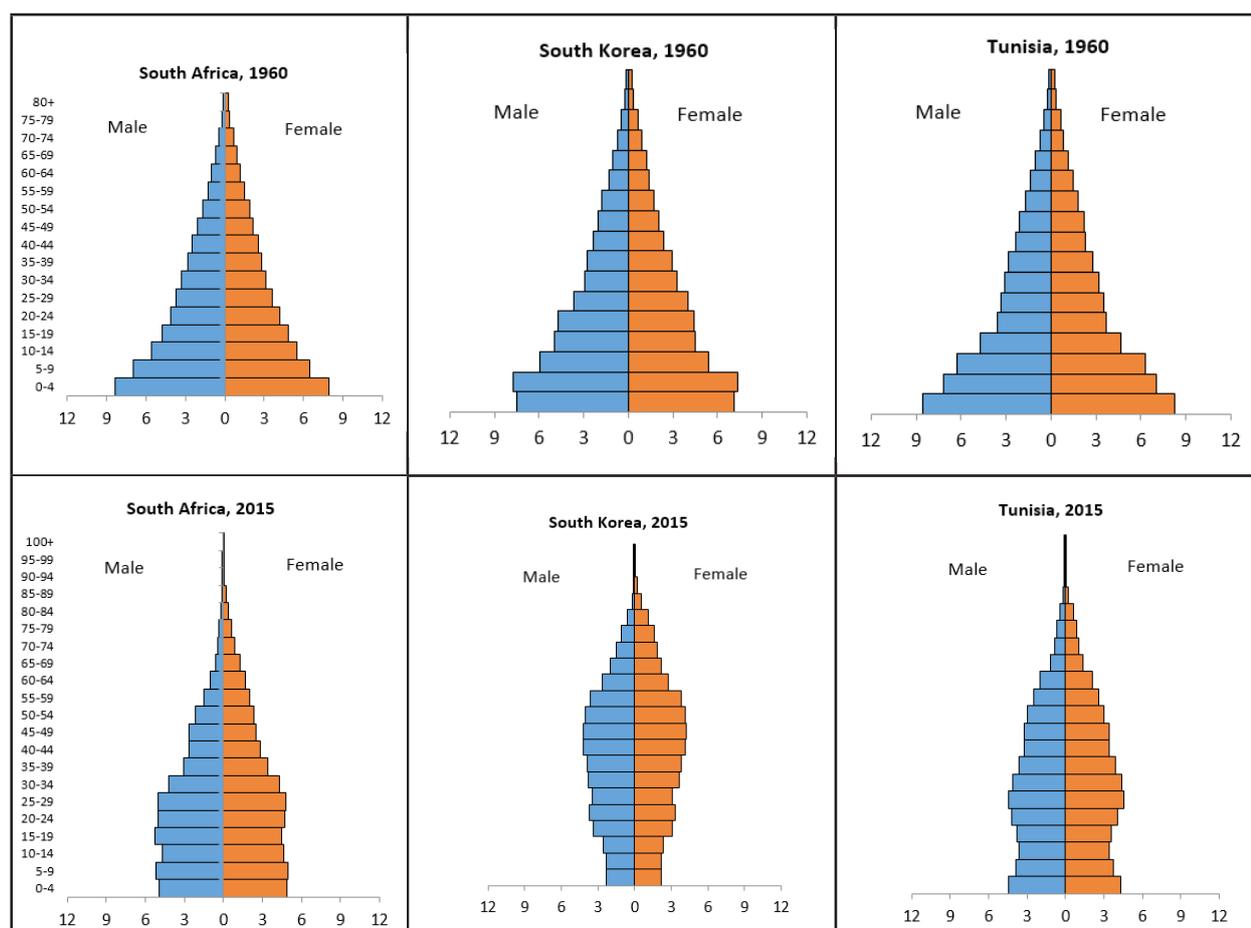
Source: Statistics Botswana & UN World Population Prospects, the 2015 Revision

2.1   Drivers of fertility in Botswana

The decline in fertility in Botswana is partly because of the progress brought about by the government's investments in various aspects of development over the past few decades. A case study by the World Bank (2010) outlined key factors that led to the decline in Botswana's total fertility rate as: (i) a strong and comprehensive family planning programme; (ii) improved child survival; (iii) increased age at first birth; (iv) increased female education attainment; and (v) increased women's participation in the labour force.

Contraceptive use and the provision of family planning (FP) services and commodities

A strong and comprehensive family planning programme in Botswana has played a key role in shaping the country's fertility decline. The Government of Botswana had committed to meeting family planning needs, integrated maternal and child health/family planning (MCH/FP) and sexually transmitted infection services in 1973 (World Bank, 2010). Hence, when women visited health facilities for services such as antenatal care, postnatal care, immunisation, and sexually transmitted infections, they were also offered family planning services. This commitment has endured and has been strengthened with the integration of MCH/FP and HIV and AIDS services following the rise of the HIV epidemic in the 1990s. As a result, contraception is widely available in Botswana with free MCH/FP services at health facilities[4], outreach services, mobile stops and

home visits for those who do not visit the facilities (World Bank, 2010). Botswana has one of the strongest family planning programmes in Sub-Saharan Africa and, as a result, has one of the lowest levels of unmet need for contraception[5] (Letamo & Navaneetham, 2015). However, the averages mask some socio-economic disparities; those without secondary education and living in the poorest households have relatively high levels of unmet need for family planning (Figure 2.2). Hence, efforts to increase contraceptive use should focus on these underserved populations, including unmarried teenagers.

Figure 2.2: Married women or in union (15-49 years) with unmet need for FP, Botswana (2007)
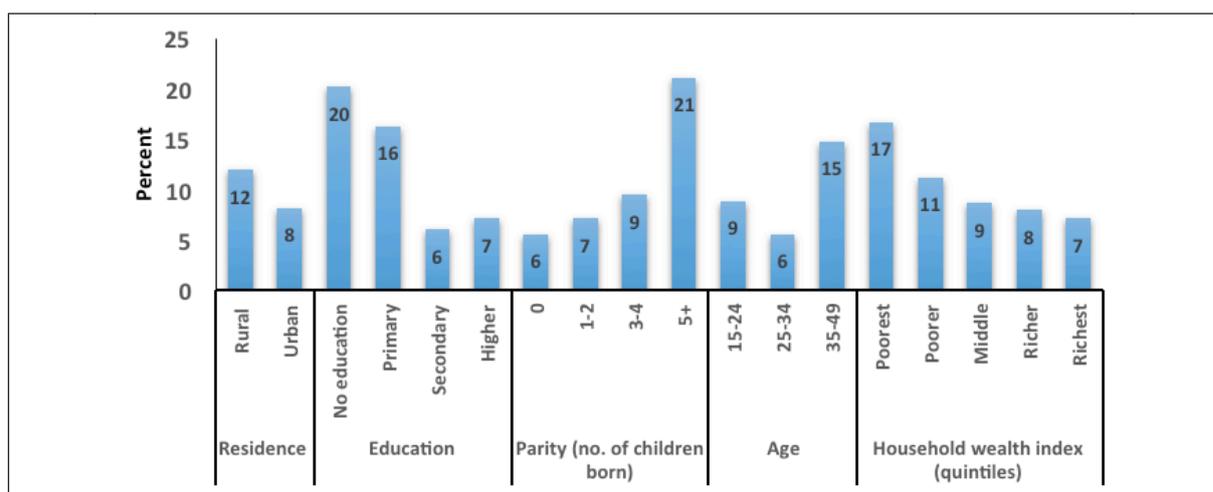
Source: Letamo and Navaneetham, 2015

Female education and fertility

Increasing school attendance and progression for girls is one of the most effective means to reduce fertility (Basu, 2002), while delaying marriage and child-bearing by 5 years can slow population growth by as much as 15 to 20 percent (Bongaarts J., 2009; Bruce J. & E. Chong, 2005). In addition, keeping girls in primary school for one extra year has been shown to increase their wages by 10 to 20 percent (Levine, C. Lloyd, M. Greene, & C. Grown, 2008). Significant public investments in education in general and girls' education in particular, have resulted in greater access to education and increased education for females in Botswana. In 2015, there was parity in the percentage of Batswana males and females who were literate (88%) and more girls were enrolled in secondary and tertiary education (65% and 28%, respectively) compared with boys (56% and 22%) (World Economic Forum, 2015a). The increase in education attainment of Batswana women has contributed to fertility decline as educated women are more likely to delay age at first birth, use contraceptives and have a lower ideal family size (World Bank, 2010). Several studies over the years in Botswana have shown evidence that compared with women with lower education attainment, more educated women were likely to be older at first birth, have higher rates of contraceptive use and lower unmet need for family planning (Letamo, G. & Navaneetham, K., 2015; Letamo, G. & Letamo, H., 2001; Letamo, G., 1996) that are all associated

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[4]It is estimated that every citizen is within 8-15 kilometres of a health facility (World Bank, 2010)

[5]The World Health Organisation defines women with unmet need as those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child. The concept of unmet need points to the gap between women's reproductive intentions and their contraceptive behaviour.

with having fewer children. Critically, increases in female education attainment go hand in hand with improving female participation in the labour force – especially in the formal sector – and this further contributed to the drop in fertility in Botswana.

Child mortality and fertility

Another major driver for lowering fertility in Botswana has been improved child survival. Improving child survival is an important prerequisite for families to have fewer births since parents are assured that their children have a good chance to survive beyond childhood. Sustained child survival interventions over the years have led to a significant decline in the infant mortality rate (IMR)[6] from 97 to 48 to 17 per 1,000 live births between 1971, 1991, and 2011 censuses (Figure 2.3). (Statistics Botswana, 2014). The Under-five mortality rate (U-5MR)[7] declined from 152 per 1,000 live births in 1971 to 63 in 1991 and to 28 per 1,000 in 2011. There was an increase in both infant and under-five mortality rates between 1991 and 2001 due to the HIV/AIDS burden.

Figure 2.3: Trends in infant and under-five mortality rates, Botswana (1971-2011)
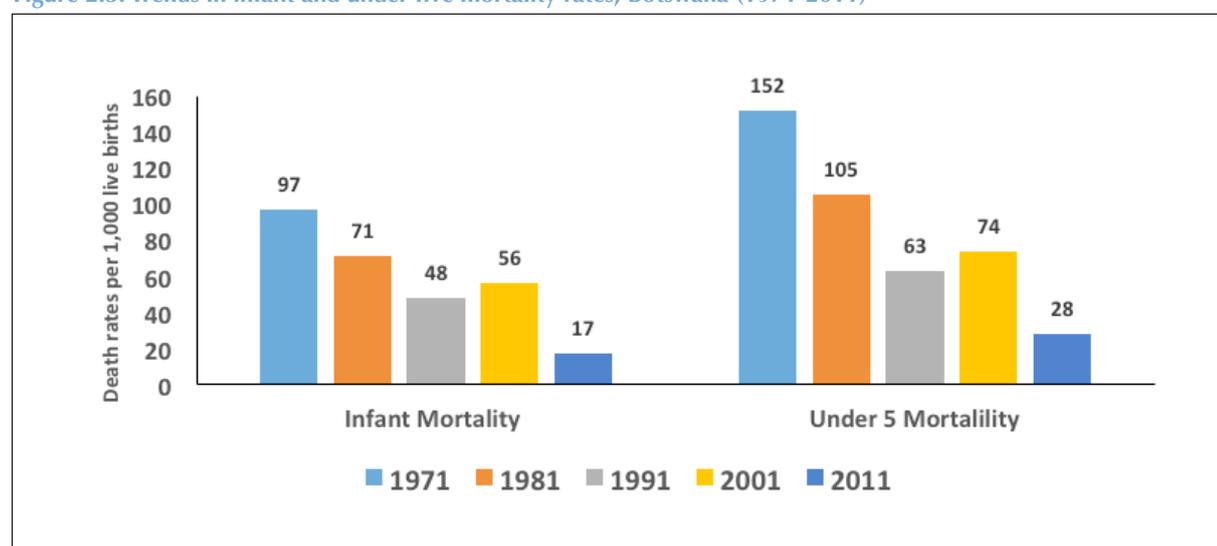
Source: Statistics Botswana, 2014

While child survival has significantly improved since the 1970s, there is still room for improvement especially when Botswana is compared to other African and Asian countries that have achieved rapid fertility decline. As Figure 2.4 shows the U-5MR in Botswana is about double that of Mauritius and Thailand and much higher than for Malaysia and South Korea.

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[6]Infant mortality is the probability of dying between birth and the first birthday

[7]Under-five mortality is the probability of dying between birth and the fifth birthday

Figure 2.4: Under-five mortality is the probability of dying between birth and the fifth birthday
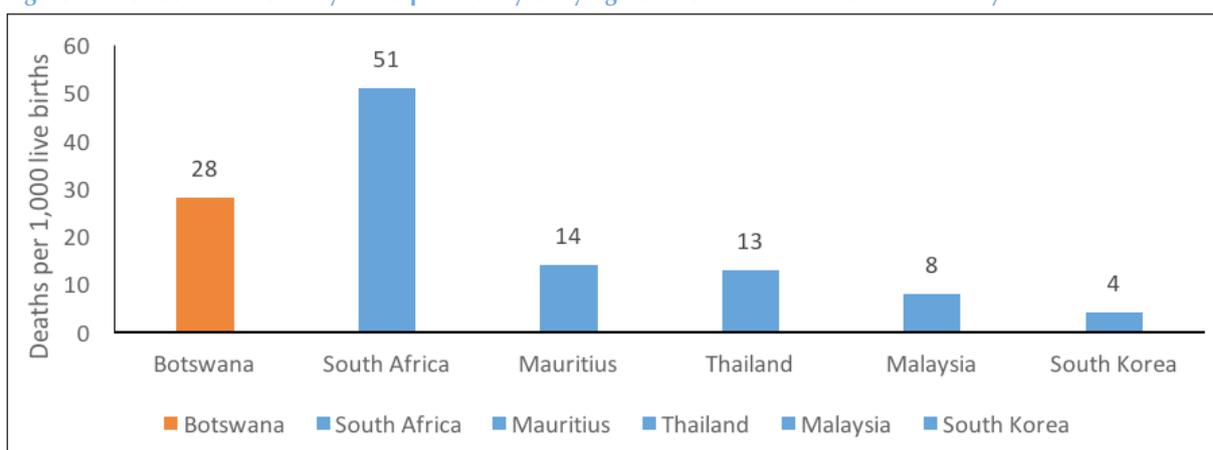
Source: Statistics Botswana, 2014

2.2 Urbanisation and migration

Botswana has undergone phenomenal urbanisation in a short period of time (Figure 2.5). In 1971, less than 10% of the population resided in urban areas. As the country has experienced fundamental economic growth, urban locations have both increased in number and size, and together with rural to urban migration, this has led to a phenomenal rise in the urban population. By 2001, more than 50% of Batswana were urban residents and this increased further to 64% by 2011. It is notable that despite the rapid urbanisation, a large proportion of Batswana households in urban areas maintain strong links with rural areas where they own land and cattle posts. Assets maintained in rural areas are valued both in monetary and social terms and are a valuable safety net for low-income urban households (Kruger, 1998).

Figure 2.5: Growth of urban population in Botswana, 1971-2011
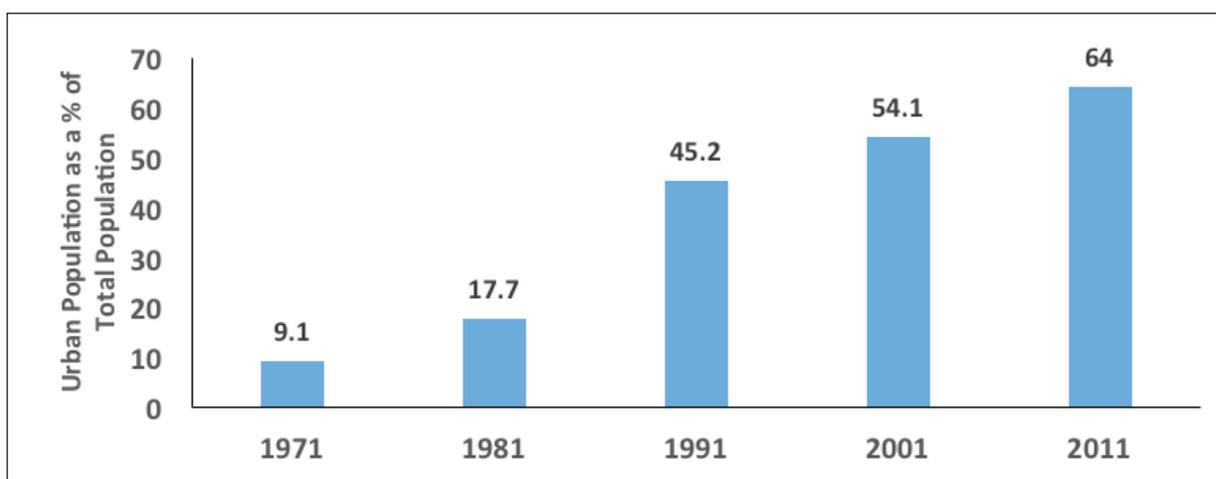
Source: Statistics Botswana (2014)

If properly managed, urbanisation can be a valuable engine for socio-economic transformation and development, as has been the case in developed and emerging economies. Some of the factors that drive economic growth in urban areas when compared to rural areas include economies of scale, greater propensity for innovation, and higher wages (Hildebrand et al. 2013). Therefore, effective management of the urbanisation process in Botswana can augment the attainment of the country's

long-term development goals. The main challenge related to urbanisation in Botswana relates to the over-dominance of Gaborone, the commercial and administrative capital of the country, as the main urban centre at the expense of other locations. Gaborone has greater opportunities for work, better infrastructure and social amenities, and public services compared to the rest of the country. As a result, much of the rural to urban migration flows into peripheral areas of Gaborone. The rapid population growth has led to challenges in terms of adequate infrastructure, social services, employment and sustainable environmental management for the growing population in Gaborone city and satellite peri-urban locations. Enhancing the socio-economic infrastructure and livelihood opportunities in other urban centres will be central to re-engineering the role of urbanisation in Botswana's development trajectory.

3 | Botswana's Health Profile

A healthy workforce is critical for the successful attainment of Botswana's long-term development aspirations and its prospects for harnessing a maximum DD. Broad evidence on the relationship between health and income suggests that good health can be both a consequence and a cause of high income. On the one hand, higher income leads to improved health through better nutrition, access to safe water and sanitation, and the ability to afford better quality healthcare. On the other hand, good health can lead to higher incomes through several pathways: (i) greater labour productivity because workers do not lose time from work due to ill-health; (ii) good childhood nutrition that promotes school attendance and contributes directly to cognitive development and ability to learn, which is critical to human capital development; (iii) lower healthcare costs and therefore more disposable income (iii) longer life expectancy leading to increased working years and higher savings for old age security, which in turn increases the capital for investments to spur economic growth (Bloom and Canning, 2008).

Botswana's investments in health programmes and infrastructure over the last two decades has transformed the people's standards of living, their access to health facilities, access to safe drinking water and improved sanitation. Life expectancy at birth in Botswana decreased from 65 years in 1991 to 56 years in 2001 mainly because of the effects of HIV/AIDS. However, renewed public health investments have reversed the situation, leading to an increase in life expectancy at birth to 68 years by 2011 (Statistics Botswana, 2014).

3.1   Major health challenges

HIV and AIDS and communicable diseases

With a prevalence of 16.8%, HIV and AIDS persist as a major public health concern in the country. This prevalence is higher among women (20.8%) than men (15.6%). For young people between the ages of 15 – 24, the prevalence is also higher among young females (10.7%) as compared to their male counterparts (4.8%). Higher HIV/AIDS among women and girls is partly due to the existing gender inequalities that mainly manifests in negative gender norms and gender-based violence. It is estimated that 2 in 3 women in Botswana have experienced some form of gender-based violence in their lifetime (Gender Links & Women Affairs Department, 2012). The Government of Botswana began responding to the HIV epidemic as early as 1987, and has subsequently invested in one of the most effective public health programmes to combat HIV and AIDS in Africa. Botswana has a multi-sector national HIV and AIDS policy that stresses prevention but also encompasses treatment and care. The multi-sectoral response to HIV and AIDS is coordinated by the National AIDS Coordinating Agency (NACA). Central to Botswana's AIDS response is the provision of highly active antiretroviral therapy (HAART) through the public health system, as well as policy initiatives focused on prevention of infection, Prevention of Mother to Child Transmission (PMTCT), expansion of counselling and testing facilities, caring for the sick and support for orphans and vulnerable children.

The introduction of the Masa HIV programme from 2002 whereby HAART was rolled out nationally to manage HIV/AIDS and reduce AIDS-related mortality started out slowly but by 2005 over half the eligible population of 43,000 people had been reached by Masa and by 2013 about 87% of eligible people were covered. It is estimated that AIDS-related deaths dropped from a high

of 21,000 in 2002 to 5,800 in 2013 (Glassman, 2016). The national ART programme mitigated the negative impact of the HIV and AIDS-related morbidity and mortality that had been a major challenge to economic productivity at the beginning of the millennium.

As a result of these interventions, Botswana is demonstrating steady progress in reducing the effects of HIV and AIDS. For instance, the incidence rate declined from 1.45% in 2008 to 1.35% in 2013 (Statistics Botswana, 2013). Mother-to-child-transmission rates have also declined to less than 3% while 95% of those who are eligible have access to free anti-retroviral treatment. The successful containment of the HIV and AIDS has contributed significantly to the increase in life expectancy at birth (Botswana Institute for Development Policy Analysis, 2015) and has transformed HIV and AIDS from a crisis situation to a chronic condition. Botswana has further augmented treatment and care through the launch of the Treat All Strategy in 2016. The strategy promotes universal health coverage to ensure that all who test positive for HIV get treatment (Republic of Botswana, 2016).

Other communicable diseases of note include malaria and tuberculosis (TB). Malaria is classified as a 'notifiable' disease by the Ministry of Health and Wellness in Botswana, which means that all cases suspected and confirmed should be reported to the authorities. Botswana seeks to eliminate malaria completely, building on the steady progress in reducing incidence rates and mortality caused by malaria. Malaria incidence has declined from 1% in 2007 to 0.56% in 2011. Prevalence of TB has also declined from 511 per 100,000 people in 2006 to 330 per 100,000 in 2011 (Ministry of Finance and Development Planning, 2013). However, the TB/HIV co-infection rate of 65% is still high, and there is the growing challenge of rising drug resistance which increases the risk of transmission and cost of management.

Maternal mortality

Maternal mortality is another critical area for population health that is a major concern in Botswana. The trend in the maternal mortality ratio (MMR) has been erratic, experiencing reversals in several years between 2005 and 2013 when the MMR stood at 183 deaths per 100,000 live births (Statistics Botswana, 2014b). The latest available data show that MMR has declined to 127 deaths per 100,000 (Statistics Botswana, 2017). However, this rate is much higher than the 10th National Development Plan target to reduce maternal mortality to 46 deaths per 100,000 live births. The country has made significant progress in improving access to maternal health services. With 95% of the population having access to health services and living within an average 8 kilometres radius of the nearest hospital, an estimated 98% of women deliver in a healthcare facility where they are attended to by a trained birth attendant (Statistics Botswana, 2014b). Various high impact interventions and strategies have been introduced to improve maternal health including: the Maternal Health Roadmap introduced in 2008; improving provision of emergency obstetric care across all facilities; ensuring that maternal audits are conducted for each maternal death; and ensuring that the results inform management and accountability actions and increasing commitment within the Government to address the issue. Nonetheless, as Figure 3.1 overleaf shows, the economic success of Botswana is not consistent with the high maternal mortality rate the country grapples with relative to peers in the middle-income and high-income

categories (UNICEF & WHO, 2015) including: a Maternal Health Roadmap introduced in 2008; improving provision of emergency obstetric care across all facilities; ensuring that maternal audits are conducted for each maternal death; and ensuring that the results inform management and accountability actions and increasing commitment within the Government to address the issue.

Figure 3.1: Comparing Botswana's Maternal Mortality Ratio (MMR) with those of selected countries (2015)
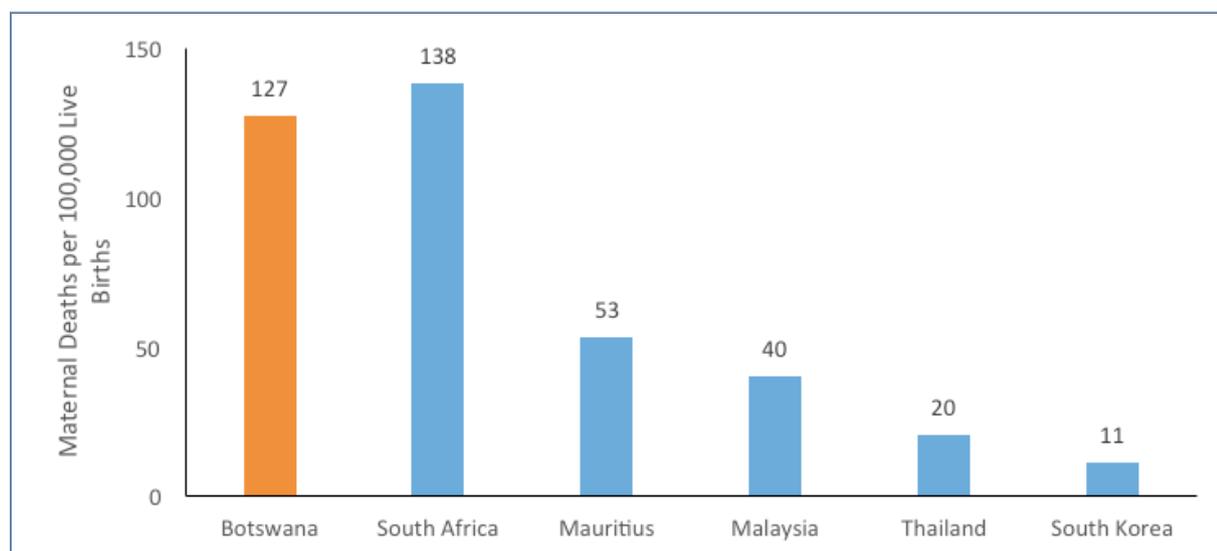
Source: Statistics Botswana, 2017 and World Population Prospects, the 2015 Revision

Child survival and child nutrition

Chapter 2 highlighted the laudable improvements in child survival which have contributed to a decrease in fertility. Some of the key government intervention programmes that have contributed to the decline in under-five mortality include: the Expanded Immunisation Programme that achieved coverage of about 90% of children aged 12-23 months receiving all valid doses of recommended vaccines; the Integrated Management of Childhood Illnesses (IMCI) adopted in 1997; the National Plan of Action for Nutrition adopted in 2005 that was aimed at preventing child malnutrition and vulnerability to diseases; and the Accelerated Child Survival and Development (ACSD) programme 2009/2010-2015/2016 that seeks to improve the coverage and quality of high impact interventions on health and well-being of children and women (Government of Botswana & UN, 2010). Notably, the robust and comprehensive programme on prevention and management of HIV in the 2000s, particularly the PMTCT programme, helped to drastically reduce HIV infection among children and reverse increases in child mortality that were observed in the 1990s (Statistics Botswana, 2013).

Malnutrition is a key child health issue that is still a concern in the country despite laudable efforts by the government to address it. Public programmes to improve nutrition in children in recent years saw the proportion of under-five children who were underweight decline from 12.4% in 2000 to 3.5% in 2013, partly because of the supplementary feeding programmes for under-five children and pregnant and lactating mothers. However, it is a major concern that almost one third (31.4%) of children under-five years of age exhibit stunted growth (Statistics Botswana, 2014c).

Poor child nutrition is a major underlying cause of child mortality, poor learning outcomes in school, and adversely affects economic productivity and well-being in adulthood.

Non-communicable diseases (NCDs)

Although morbidity and mortality from non-communicable diseases (NCDs) in Botswana are not well documented, there is wide acknowledgement that these are high. Analysis by the Botswana Institute for Development Policy Analysis (BIDPA) in 2015 showed that NCDs could have accounted for about 31% of all adult deaths in 2008. Data from the World Health Organization (WHO) indicate an upward trajectory of the prevalence of risk factors for NCDs, particularly being overweight and obesity. The WHO Global Health Observatory estimated that in 2014, about 55% of women and 31% of men aged 18 years or older were either overweight or obese. Similar estimates in 2000 showed that 44% of women and 20% of men 18 years or older in 2000 were either overweight or obese. Roughly, around one-third of adults 18 years or older have high blood pressure. Analyses by Madise and Letamo (2017) show that Botswana's nutrition transition is advanced and high levels of obesity and overweight status prevail even in rural areas. The Botswana National Cancer Registry, which was established in 2003 to determine the disease burden attributable to cancer, shows that between 1998 and 2010, 13,314 new cases were registered. The trend shows that there are increasing cancer cases in the country. The World Bank estimates that NCDs will become the leading cause of morbidity and mortality by 2030 (World Bank, 2015). This is worrisome because not only do NCDs lead to premature death, but they also threaten the development and economic progress of a country because of reduced productivity, absenteeism from work, and high expenditure on health. As such, urgent action is required to integrate NCDs into the national health and development approaches and priorities building on the Ministry of Health and Wellness' (MoHW) efforts to promote awareness of NCDs, physical activity and weight management, and a national geriatric programme.

3.2   Health infrastructure and health systems

Ultimately, the health of the population is supported by health systems and infrastructure. Botswana uses the primary healthcare model, which is a holistic approach to healthcare, and has done well towards attainment of access to health and healthcare, which has improved and raised living standards of the citizens. The public sector is a major provider of health services, accounting for 65% of the total expenditure in health (Ministry of Health and Wellness, 2016) and access to healthcare is almost free[8] of charge to all citizens. The country has an extensive network of health facilities, with 95% of the population living within 8 kilometres of a health facility (84% of population is within a 5 km radius of the nearest health facility) (Ministry of Finance and Development Planning, 2013).

Shortage of trained staff remains one of the major bottlenecks to the availability of quality healthcare in Botswana, as it has resulted in a high staff/patient workload. The number of health

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[15]There is a nominal fee of 5.00 Pula that is charged but a patient presenting to the health facility without money will not be turned away

personnel has increased across all categories, although there are considerably fewer doctors than nurses, mainly due to insufficient numbers being trained and high attrition rates. A recent study using the MoHW database from 2012 showed that there were 4.3 doctors and 41.3 nurses per 10,000 people (Nkomazana et al., 2014). The study also showed that only 21% of the doctors and 84% of nurses registered with the Botswana Health Professions Council (BHPC) were Batswana. In addition, the distribution of health personnel is skewed in favour of urban areas. For example, in 2012, Gaborone, with 11% of Botswana's population, was home to 250 (34%) doctors and 1113 (17%) nurses whilst Francistown, with 5% of the population, had 100 (13%) doctors and 530 (8%) nurses (Nkomazana et al., 2014). Comparative data from World Bank's 2016 World Development Indicators for some benchmark countries show that Botswana has a low number of physicians per 1,000 people at 0.3 compared to South Korea's 2.1 and Singapore's 2.0 (Figure 3.2).

Figure 3.2: Comparing the number of health personnel in Botswana and benchmark countries (per 1000 in the population), 2016
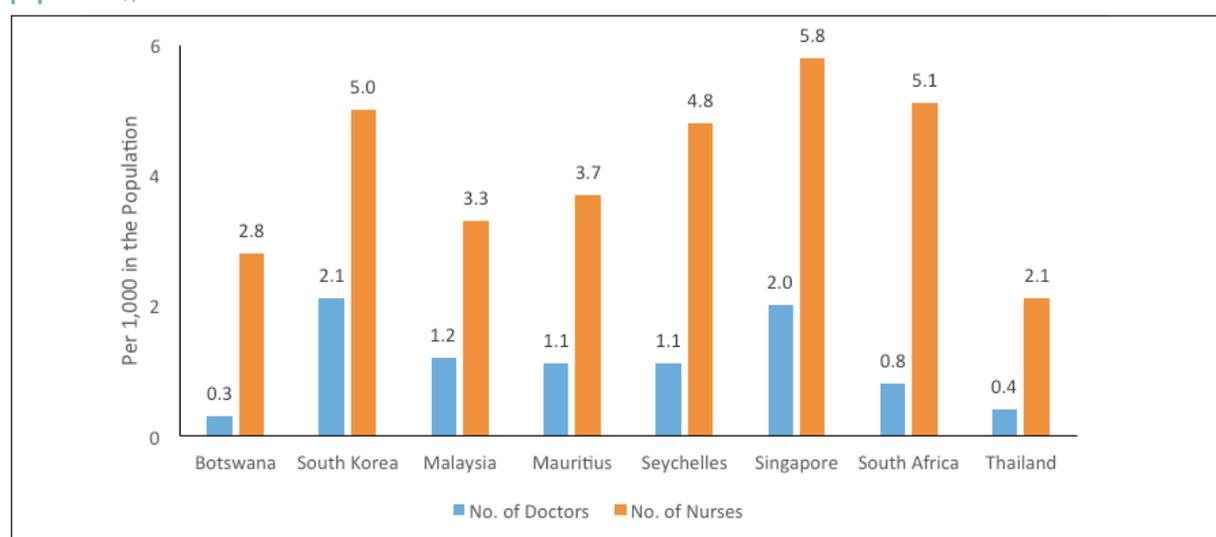
Source: The World Bank's World Development Indicators, 2016

It is worth noting that the Government of Botswana invests substantial resources to fund public healthcare compared to many African countries. According to the revised National Policy on Health, 2011, since 2004 the proportion of government budget allocated to health has reached the Abuja target of 15% of the annual budget. On another measure of health expenditure, the percentage of government health budget relative to GDP gradually increased from 6.43% in 2000 to 9.27% in 2001 and 10.54% in 2002 (Ministry of Health, 2012). The 2013/14 National Health Accounts show that government expenditure accounted for 65% of Total Health Expenditure (THE) in Botswana and that government expenditure on health as a percentage of GDP was 6.3% (Ministry of Health and Wellness, 2016). Yet, despite these considerable investments in health (in comparison to its neighbours), there are concerns about how effectively such funds are allocated and used. A huge chunk of the investments goes to recurrent expenditure, particularly salary payments. In 2007/08, for example, 60% of the health expenditure was recurrent while 40% was development expenditure (Republic of Botswana, 2009). Moreover, health spending

in Botswana continues to be skewed towards curative care at 56% of THE (2009/2010) and 55% of THE (2013/2014), as compared to preventive care, which stood at 9% (2009/2010) and 20% (2013/2014) of THE, respectively (Ministry of Health and Wellness, 2016).

4 | Botswana's Socio-Economic Profile

4.1   Education and skills development

Enhancing standards in education and skills development are central to planning for a prosperous country. The Revised National Policy on Education (RNPE) of 1994 fronts "Education for All", particularly the 10-year basic education programme (Republic of Botswana, 1994) and the NDP 10 targeted to increase the Net Enrolment Rate (NER) in primary schools to 100% by 2016 (Ministry of Finance and Development Planning, 2010). These ambitious goals are also reflected in the Education & Training Sector Strategic Plan [ETSSP 2015-2020] (Republic of Botswana, 2015).

The government of Botswana prioritised education in order to develop human capital and increase skilled labour to address the critical manpower shortages that forced the country to rely on the relatively expensive expatriates (Siphambe, 2007). The education sector received a significantly large share of both development and recurrent budgets, averaging at 25% of the national budget for many years. Indeed, Botswana's expenditure on education is high when compared to other UMICs; in 2009 Botswana spent 9.5% of its GDP on education against the UMICS average of 5.5% (World Bank, 2016). The tertiary sector, in particular, received 4.5% of the national GDP over the past decade (Republic of Botswana, 2015).

The Government of Botswana has put in place several education programmes to improve the skills base of its population, including:

1. To achieve the 'universal basic education by 2016' goal, the Government has over the years increased the number of schools and enrolment throughout the country.

2. Back–to-School Programme (2012) aimed at giving young people (below 35 years) a second chance to enrol back to school to get basic education and skills that can enable them to find decent work.

3. Early Childhood Development (ECD) programme established in 2001, where early childhood education is recognised as an integral foundation for learning and future education attainment.

4. Sponsorships (since 1973) in the form of loans or grants availed to students to study either locally or abroad, to ensure attainment of tertiary education and training to all qualified citizens.

5. School Feeding Programme (SFP) established in 1993 – the programme has increased enrolment in schools and attendance rates, especially for children from poor families who cannot afford to give their children adequate meals.

As a result of these reform efforts, considerable progress has been made towards universal access to the 10-year basic education programme. A mid-term review of the NDP 10 showed a large increase in the number of graduates from all levels of schooling and an improvement in the quality of education (Ministry of Finance and Development Planning, 2013). More young people are staying on in school longer, and they have more options available for post-secondary education.

Adult literacy rates also improved significantly from 34% in 1991 to 88.6% in 2014 (Statistics Botswana, 2014d). The increase in literacy rates, access to print and electronic media and an emerging ICT sector demonstrate that Botswana is well on its way towards its goal of becoming an educated and informed society. Despite these achievements, the education sector faces three main challenges: quality and relevance; access and equity; and limited facilities, especially at the senior secondary school level which leads to lower than desirable transition rates between.

Early childhood education

There has been a significant growth in the number of education institutions that offer pre-school education. However, only 18.4% of children entering primary standard 1 in public schools in 2011 had attended early childhood education (Statistics Botswana, 2013a). In contrast 48.1% of children entering standard 1 in private schools had participated in early childhood education (Republic of Botswana, 2015). This difference is explained by the fact that the provision of pre-school services has largely been the preserve of the private sector (about 97% of the enrolment is done by private individuals and organisations), and access to pre-school especially in remote areas is very limited. The NDP 10 had a target for pre-primary schooling of 40% by 2016 and efforts are being made to increase access to pre-school education. The government has also instituted a six-week orientation programme in all public primary schools to prepare children for learning and settling in schools.

Basic and senior secondary education

Basic education consists of a total of 10 years made up of 7 years of primary school and 3 years of junior secondary school. Senior secondary school consists of 2 years. Overall, both gross and net enrolments for basic education have significantly improved during the last five years, and more young people are staying in school longer. At primary school level (6-12 years), the NER[9] increased from 85.8% in 2009 to 93.2% in 2014, just below the NDP 10 target of 97% for the year. The Gross Enrolment Rate (GER)[10] reached 119.9% in 2012 (Republic of Botswana, 2015; Republic of Botswana, 2017). The NDP 11 notes that it will be difficult to get the NER for primary school to 100% because education is not compulsory (Republic of Botswana, 2017).

The NERs for junior secondary school (13-15 years) and senior secondary school (16-17 years) have remained lower than those obtained in primary schools, an indicator that not all students complete the 10 years of basic education. Figure 4.1 shows that net enrolment in junior secondary school increased from 45% in 2002 to 53.1% in 2012, while that of senior secondary school increased from 17.7% to 29.8% over the same period (Republic of Botswana, 2015). The Government is the main provider of secondary school education (about 80% of all secondary schools) and enrolling about 92.3% of all students (Statistics Botswana, 2014e).

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[9]Primary NER is the percentage of children of primary school age attending primary, while secondary NER is the percentage of children of secondary school age attending secondary school.

[10]Total enrolment in a level of education, regardless of age, expressed as a percentage of the eligible official school-age population of that in a given school-year

Figure 4.1: Trends in net enrolment rates in primary and secondary levels
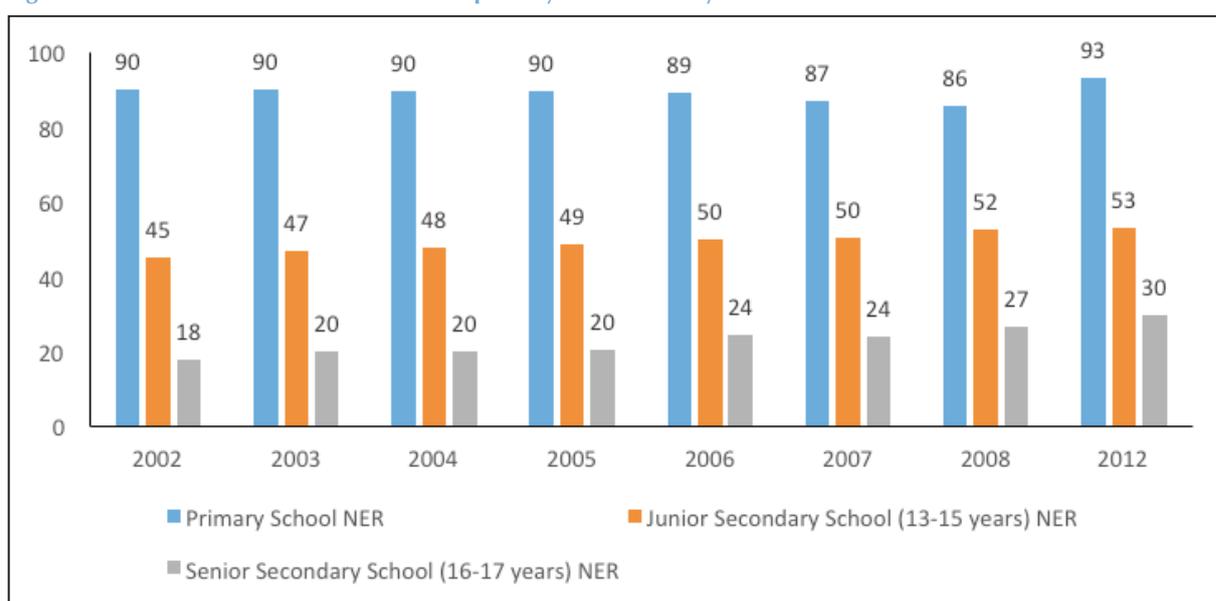
Source: Statistics Botswana, 2014

Tertiary education

While enrolment rates at basic education level in Botswana are comparable to most of its peer middle-income countries, the country lags behind on transition to tertiary education level. Despite significant investment by the Government to increase enrolment at tertiary level, including providing scholarships to increase enrolment at private tertiary institutions, there is still much room for improvement in this area. The GER for tertiary education in Botswana has been increasing steadily in recent years. While the GER was 7.7% in 2003/04, in 2015/16 it was estimated at 19.3% (HRDC, 2016). Comparative data from the World Bank shows that Botswana's tertiary GER is at par with South Africa (19.7%) and higher than Seychelles (6.5%). However, this is far behind South Korea (95.3%), Thailand (51.4%), Mauritius (38.7%) and Malaysia (38.5%) (World Bank, 2017).

Developing the tertiary education sub-sector is identified as one of the critical success factors for Botswana's to transform and diversify its economy and accelerate development. The Tertiary Education Policy (TEP) of 2008 identified two value propositions for the sector, namely; 1) laying the foundation for the subsequent development of Botswana as an innovation knowledge-driven economy; and 2) making the country a better place to live in and deliver major benefits to society (Republic of Botswana, 2008). The aim of the policy is to produce relevant competencies and skills of international standard, as well as individuals who are adequately prepared for the workplace and can utilise opportunities, create employment, undertake research and diversify the economy. However, there are widespread concerns over the quality and relevance of tertiary education, which is seen to be increasingly out of line with labour market needs (Republic of Botswana, 2008). To address this challenge, there have been a lot of reforms to increase the capacity and quality of tertiary education. These include developing new programmes and constructing additional institutions, involvement of the private sector in the provision and financing of tertiary

education, and replacing the Botswana Training Authority (BOTA) and the Tertiary Education Council (TEC) with the Human Resource Development Council (HRDC) to ensure programme alignment and coherence. Already, the Ministry of Education and Skills Development (MoESD) in partnership with HRDC introduced new sponsorship quotas for different programmes based on an evaluation of critical human resource needs in the country by the latter. This is aimed at ensuring that enrolment in critical programmes such as health and engineering are boosted.

Technical and vocational education and training (TVET)

TVET in Botswana is delivered at different levels, from certificate to diploma, in different types of institutions such as technical colleges and brigade centres. The Department of Technical and Vocational Education and Training (DTVET) under the Ministry of Tertiary Education, Research, Science and Technology, has the overall responsibility for planning and implementing technical and vocational education in Botswana so as to meet the country's manpower requirements and diversify the economy. Enrolment in the TVET sub-sector has increased from 6,096 in 2009 to 10,622 in 2014 (Republic of Botswana, 2015), with a utilisation rate estimated at 61% (Ministry of Finance and Development Planning, 2013). The major reason for the underutilisation of vocational and technical education institutions is the shortage of qualified teaching staff due to high staff turn-over and failure to attract qualified personnel. The Brigades (non-formal colleges for skills development) are operating at 81.3% of their capacity. The aim was to improve the utilisation rate of TVET institutions to 70% by the end of the 2014-2015 financial year whilst the NDP 10 target was 80%.

The challenge facing this sub-sector is that TVET is often regarded as a deficit system without defined career pathways. Indeed, it is perceived negatively as having poor articulation with labour market demands and contributing little towards socio-economic development. Low levels of performance is a challenge across TVET; the average pass rate is below 50% and nearly 73% of Botswana Training Authority registered trainers do not have a teaching qualification (Republic of Botswana, 2015). The sub-sector is also bedevilled by management and resource challenges, dilapidated buildings and obsolete equipment, and poor work ethic amongst instructors and students. As a result, some facilities are not functioning because of staff shortages. In addition, TVET programmes have not been reviewed in a long time (since 1997), calling into question the relevance of the programme and its content. Similarly, most of the apprenticeship curricula have not been reviewed for years and are outdated (Republic of Botswana, 2015). The government is seeking to address these challenges by (a) aligning TVET programmes to the needs of the country; (b) facilitating efficient utilisation of the institutions and; (c) revitalising the subsector so that it has programmes of choice for young people (Ministry of Finance and Development Planning, 2013). Measures to enhance staff development in the sector should also help to make these institutions more attractive for prospective students.

Education transition rates, school drop-out and gender parity

The transition rates from primary to junior secondary school and from junior to senior secondary school have increased over time. This is partly because of the automatic progression policy

from primary to junior secondary school, and the increase in the number of senior secondary schools and the introduction of double shifts in some secondary schools (Botswana Institute for Development Policy Analysis, 2015). Transition rates from primary school to lower secondary level have been high, ranging around 99% between 2009 and 2012 (Statistics Botswana, 2014e). However, the transition rate of 63% from junior to senior secondary school was below the NDP 10 target (89.3%) (Statistics Botswana, 2014e). The transition rates from lower (Form 3) to upper secondary (Form 4) ranged from 52.8% in 2000 to 63.8% in 2012. The lower transition rates to upper levels of schooling highlights the problem of drop-outs that leaves many young Batswana ill-equipped with the necessary skills to optimise their potential in the labour market. In 2012, there were a higher number of females (1,658) dropping out of secondary school than males (1,198) and this was the pattern observed in all regions with the exception of Gantsi region. The key reasons for drop-out among females were pregnancy followed by absenteeism, while the main reason for boys was absenteeism (Statistics Botswana, 2014e).

Geographic and socio-economic disparities exist at secondary and tertiary levels and these are likely to disadvantage the future prospects of children from poorer households and remote rural areas, and for children with special needs. To address such disparities, an Inclusive Education Policy was developed in 2011 to facilitate greater access to high-quality basic education for all, particularly to include the disadvantaged and those from vulnerable and marginalised groups (Ministry of Education and Skills Development, 2013).

Quality of education

A recent assessment of the education sector's performance showed that the quality and performance of education sector was insufficient in meeting the needs of a growing and diversifying the economy and that the cost-effectiveness of the sector was comparatively weak (Ministry of Finance and Development Planning, 2013). The quality of education at all levels is below desired levels and a majority of workers lack the requisite training for their jobs. Vision 2036 for instance indicates that less than one-fifth (18%) of workers in the workforce in 2011 were properly trained and targets to raise this proportion to 24% by 2021 and to 42% by 2036 (Government of Botswana, 2016).

At pre-school level, education is constrained by the low number of qualified teachers. At primary school level, the quality of education as measured by learning outcomes has not been satisfactory. According to Trends in International Mathematics and Science Studies (TIMSS), Botswana's standing in Science, Mathematics and Reading achievement (measure of quality) is below average (International Association for the Evaluation of Educational Achievement, 2011). Performance of Batswana students in international comparative studies shows that students perform below par compared to international students of the same age group, and also perform below the international benchmarks (Ministry of Education and Skills Development, 2015). Similar challenges were observed at secondary school level, whereby Botswana performs below benchmark high and middle-income countries in Science and Mathematics being. Only 25% of the Form II students who sat for the 2011 test were able to reach the set benchmark in mathematics.

Actual Botswana General Certificate of Secondary Education (BGCSE) overall results show a steady performance decline in recent years. In 2009, there was a 16.2% gap between the target (51%)

and the actual results (34.8%). By 2013 this gap had widened to a dramatic 27.1% (Republic of Botswana, 2015).

There is a concern that the curriculum is overloaded and the content of the various syllabi leaves very little room for the development of quality learning. Pedagogy used by teachers is severely out-dated as the current system puts heavy focus on examinations to the exclusion of 'learning for life' and skills development. Concerted efforts have been put in place to improve the quality of education in the country. Periodic review of curricula is also being undertaken for continuous improvement of educational quality. The Senior Secondary School curriculum is currently being reviewed while at junior secondary school level a revised curriculum was implemented in 2010. Professional development of teachers has been identified as a critical area for improvement of education quality. Progress has been made in upgrading Primary Teacher Certificate (PTC) holders to Diploma in Primary Teaching, with an aim of eventually phasing out the PTC teachers. The Education and Training Sector Strategic Plan (ETSSP) seeks to refocus national education and training curricula towards the fulfilment of social and economic aspirations identified in the Revised National Policy on Education (RNPE), the NDP, the Vision 2036 as well as the Millennium Development Goals (and now the SDGs). It is intended to strengthen the match between qualifications and labour market requirements, thereby ensuring that education outputs are more closely aligned to future employment needs.

Mismatch between graduate skills and labour market needs

There is a perceived mismatch between graduates' skills set and the demands of the economy. The current education system is not well adapted towards the labour market. It does not prepare graduates sufficiently for employment, including in terms of good communication skills and career guidance on how to look for a job. As a result, the country's global rating in labour productivity and competitiveness has remained low (Ministry of Finance and Development Planning, 2013). The private sector, therefore, has to import from abroad the key skills sets that they need (Republic of Botswana, 2015). The NDP 11 also identifies the mismatch between skills produced by the education system and the needs of the economy as a challenge to economic development in the country (Republic of Botswana, 2017).

The Government is putting in place policies and strategies to address this challenge. The National Human Resource Development Strategy (NHRDS) seeks to address the quality of education and training and the skills mismatch challenges. A re-tooling and re-skilling programme has been started to build market-relevant skills, and registration of graduates already trained on programmes that are deemed as not being relevant to the market is on-going with an aim towards re-skilling the graduates. The National Internship Programme (NIP) established in 2009 is partly addressing the problem of graduate unemployment. However, the challenge is that some interns take up to two years before they are assigned. The acute mismatch between qualifications and available internship vacancies accentuates the problem. Other efforts to address unemployment among young people include the Graduate Volunteer Scheme (GVS) introduced in 2015 to attach young graduates in organisations that have opportunities for volunteer work to facilitate skills development and transfer. In 2014, the National Service Programme (Tirelo Sechaba) was also

re-introduced having previously been terminated in 1998. The government is also developing the National Credit Qualifications Framework (NCQF) to address issues of relevance, quality, accreditation, articulation, coordination and management of skills development programmes.

4.2   Progress on gender-parity

Botswana has made significant progress on many gender parity indices. For example, in 2015, Botswana's Gender Gap Index was about 0.71 (out of a maximum of 1), putting the country at position 55 globally. The index measures the gender gap in areas such as education opportunities and participation, health (life expectancy and sex ratio at birth), economic opportunities and participation by women, and political empowerment of women. Figure 4.2 shows that Botswana performs particularly well in education and health, (scores of between 0.96-1.0), and it is improving on economic empowerment of women (0.69 in 2006 to 0.8 in 2015) but its performance is extremely low on the political empowerment of women (score 0.07 out of 1 in 2015, and ranked 126 out of 145 countries) (World Economic Forum, 2015a).

Similarly, Botswana performs well on the SADC Gender and Development Index (SGDI), which is a composite measure of progress on gender, based on indicators from governance, education, the economy; sexual and reproductive health; HIV and AIDS; and the media. In 2014, Botswana obtained 70% for SGDI and was ranked 6th out of 15 SADC countries (the average was 67%). Another useful measure of progress on gender parity is the Citizen Score Card (CSC), which is based on citizen's perceptions. It includes most of the SGDI indicators and indicators on constitutional and legal rights, gender-based violence, peace-building, and implementation of the Southern African Gender Protocol (Southern African Gender Protocol Alliance, 2015). On CSC, Botswana performed less well in 2014 at 66%, and was ranked 7th (average for SADC was 66%). The Constitution prohibits gender discrimination; however, the customary and formal laws that the country follows sometimes conflict, resulting in denial of equal rights for women (Southern Africa Gender Protocol Alliance, 2015). Furthermore, child marriage (for those below 18 years) is easily permissible under customary law where each spouse need not consent to a customary marriage.

Figure 4.2: Botswana Gender Gap Index and its components, 2006-2015
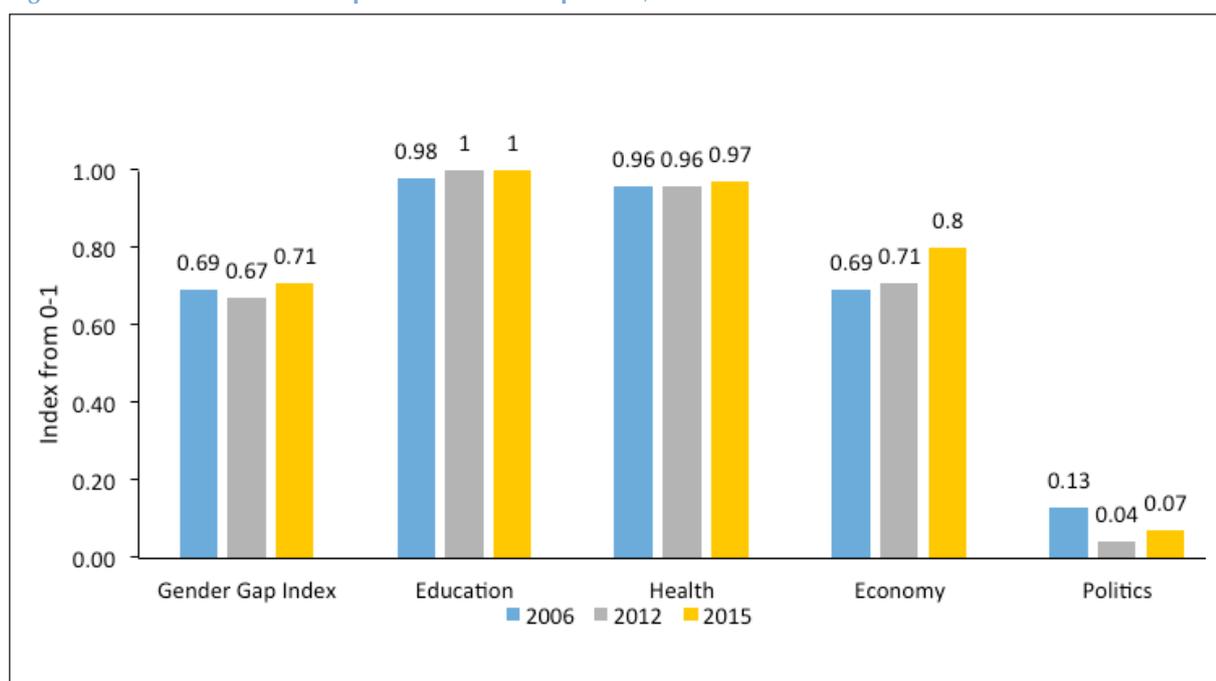
Source: Botswana Gender Gap Index Country Profile, 2015

Gender-based violence (GBV) is a major problem in Botswana. In 2011 it was estimated that 67% of women have experienced GBV and about 44% of men admit perpetrating GBV (Gender Links & Women's Affairs Department, 2012). The GBV report also indicates that although nearly 30% of women experienced intimate partner violence, only 1.2% reported the violence to the police. About 11% had been subjected to non-intimate partner rape and a further 16% survived attempted rape. Older age (45 years or higher), lower education status, and not working were associated with less likelihood of experiencing and perpetrating GBV. However, experience of child sexual abuse was associated with being a victim of GBV later in the life course. For example, 22% of women who had experienced child sexual abuse had ever been raped compared with 8% of those with no history of child sexual abuse. Childhood GBV was also linked to perpetrating many forms of GBV later in life. For instance, 25% of men who had been sexually abused had perpetrated rape compared with 7% among those with no history of child sexual abuse.

Botswana's female participation in education is very impressive even at secondary and tertiary level. A higher proportion of women are enrolled in tertiary colleges than men. However, the participation of females in science, technology, and mathematics (STEM) lags behind that of males. For example, females make up only 21% of the students in engineering and technology subjects at the University of Botswana. Many schools in Botswana use corporal punishment on both boys and girls, and instances of bullying and sexual abuse by teachers are all common (Southern Africa Gender Protocol Alliance, 2015). Dropping out of school by girls is common because of pregnancies, and Botswana has a school re-entry policy for student mothers.

Botswana does well on female participation in the economic sector with more than 41% of women employed in the wage labour market. More than 56% of women own arable land compared to 42% of males. However, many women are in low paying jobs; for example, women make up

more than 70% of owners of informal sector businesses. Furthermore, about one-third of female-headed households are living in poverty compared to only 27% of male-headed households (Southern Africa Gender Protocol Alliance, 2015).

Botswana is a signatory to a number of international gender targeted declarations and protocols that bear testimony to the Government's commitment to gender equality and equity. Among the most significant ones are the UN Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) ratified in 1996; the SADC Declaration on Gender and Development (1997) and its addendum on the Prevention and Eradication of Violence Against Women and Children; the African Charter on Human and People's Rights on the Rights of Women in Africa; the Convention on the Rights of the Child (1989); and the Beijing Declaration and its Platform for Action (1995). Botswana has also signed the revised SADC Protocol on Gender and Development Declaration solidifying the country's commitment to empowerment of women, elimination of discrimination against them, and achieving gender equality as aligned to the National Vision 2036, NDP 11 and the National Policy on Gender and Development. Despite the progress that has been made towards gender parity in the country, significant challenges still exist and enforcement of existing laws and policies to achieve gender equality and address GBV should be a priority.

5

Economic Status, Outlook and Opportunities

5.1   Economic status

Change in age-structure to one with a significantly large working-age population relative to dependents opens the window to harnessing the DD. However, as has already been emphasised, investments in human capital development, job creation and governance, are key ingredients for actualising the full potential of a large working-age population to maximise the demographic bonus. Countries in East Asia such as South Korea, Singapore and Taiwan made these kinds of investments and have managed to catapult themselves over a few decades to high-income countries. For many countries that transitioned from low to middle-income status over the last half-century, it is observed that manufacturing was a catalyst for their rapid growth with these countries being able to compete in international markets through producing labour-intensive, low-cost products with technologies adopted from abroad. These countries were able to achieve a rapid rise in productivity through the reallocation of labour from low-productivity agricultural sectors to high-productivity manufacturing sectors and some cases to modern services (Agéno, Canuto & Jelenic, 2012). Nevertheless, subsequent slow-down or even stagnation in growth can likely occur because of the diminished returns to sectoral reallocation and technology catch-up coupled with rising wages that make the labour-intensive exports that were being manufactured less-competitive in the world market. This can lead to what has been termed the "middle-income trap" where countries that cannot innovate new areas of growth find it increasingly difficult to graduate to high-income status (World Bank, 2017a; Agéno, Canuto & Jelenic, 2012). Estimates in 2012 indicate that of 101 middle-come countries in the 1960s, only 13 had graduated to high-income status. Of these, 5 of them were from East Asia, including Hong Kong, Japan, South Korea, Taiwan, China and Singapore. Three factors notably characterise their ability to escape the middle-income trap: developing advanced infrastructure networks, particularly in the form of high-speed communications and broadband technology; transitioning from imitating and importing foreign technologies to innovating their own technologies backed by strong intellectual property rights' protections; and developing flexible labour markets and open economic policies to enhance competitiveness in the global market (Agéno, Canuto & Jelenic, 2012).

In the 1960s, Botswana was one of the poorest countries in the world with a per capita Gross Domestic Product (GDP) of USD 58 in 1960 and USD 84 at independence in 1966. Within three decades, per capita GDP had risen to USD 3 296 and its GDP per capita by 2014 was estimated at USD 7, 123 (World Bank, 2016) placing it within the ranks of UMICs. Much of Botswana's rapid economic growth is associated with its natural endowments. In particular, diamond mining is a mainstay of the economy, contributing an estimated 40% to total GDP annually. Between independence in 1966 and 1999, Botswana had the highest average economic growth rate in the world of about 9% annually. However, since 2000, per capita real GDP growth has slowed. Botswana was adversely affected by the global economic downturn that started in 2008 although some recovery since 2010 was registered. In 2013 real GDP improved to 5.4% from 4.2% in 2012 (World Bank, 2016), mainly driven by a strong diamond sector. Figure 5.1 shows the recent trends in economic growth in Botswana while Table 5.1 illustrates the importance of the mining sector to the economy. The key thing to note is that for Botswana, transition from lower-income status to becoming a UMIC has been underpinned by the mining industry that unfortunately is not

a key driver for job creation hence the link between it sustained GDP growth over the years with employment has been weak.

Figure 5.1: Botswana's GDP growth rate in mining and non-mining sectors (Constant 2006 prices)
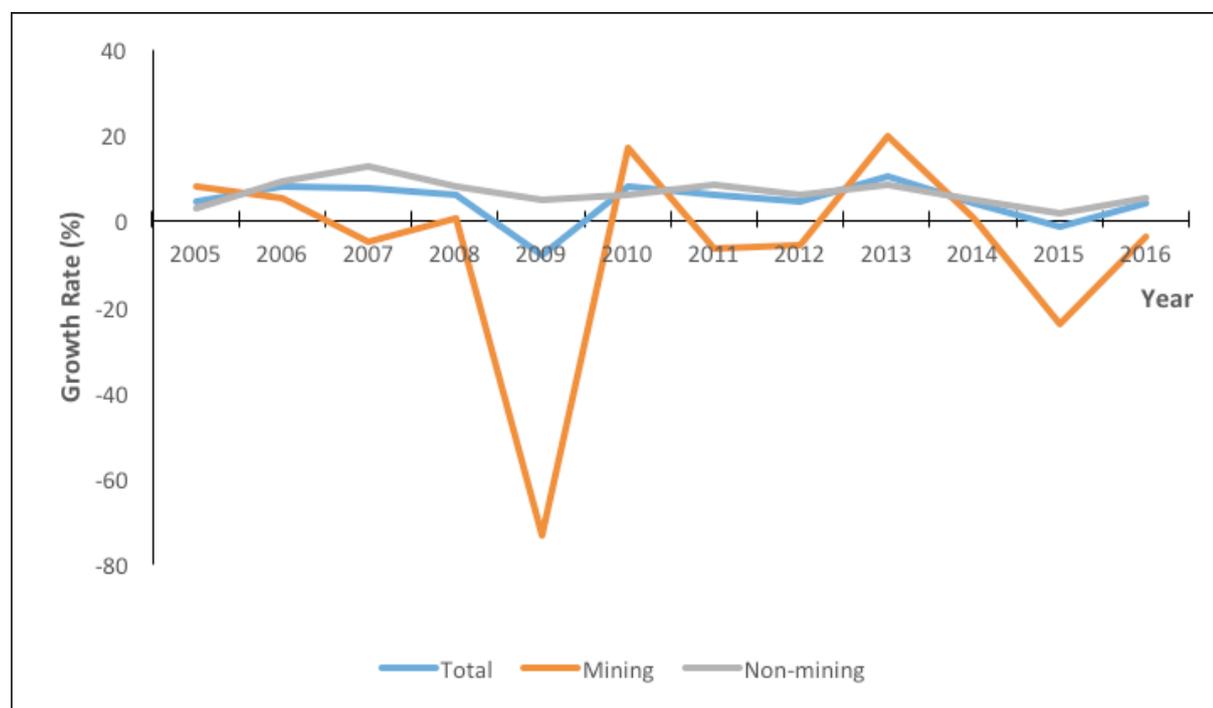
Source: Statistics Botswana, 2017

Table 5.1: Contribution to GDP by industry, 2010-2016 (Constant 2006 prices)

Industry	2010	2011	2012	2013	2014	2015	2016
Agriculture	2.3	2.2	1.9	1.7	1.6	1.7	1.6
Mining	18.5	16.3	14.7	16.4	15.8	12.9	11.9
Manufacturing	6.1	6.4	6.4	6.1	5.9	6.2	6.0
Water and electricity	1.2	0.8	0.5	0.8	0.3	0.4	0.8
Construction	6.0	7.0	7.6	7.1	7.1	7.5	7.5
Trade, hotels and restaurants	15.9	17.1	17.5	18.2	19.3	18.9	20.6
Transport and communication	5.1	5.1	5.4	5.3	5.5	5.9	6.0
Finance and business services	13.8	14.0	14.6	14.2	14.0	14.9	14.8
General government	13.4	13.4	13.2	12.6	12.7	13.3	13.0
Social and personal services	6.4	6.5	6.9	6.7	6.7	7.0	7.0
Taxes on products less subsidies	11.3	11.2	11.2	10.9	10.9	11.3	10.8

Source: Statistics Botswana, 2017

Botswana has had challenges emanating from its past narrow economic base and dependence on the mining sector, particularly diamonds, although the services sector is increasingly growing in prominence as mining wanes. The mining sector is vulnerable to global shocks and instabilities of the world economies. In 2009, Botswana's mining sector contracted by 46.2%, while the non-mining sector grew at 4.9%, with the net effect on overall GDP of minus 7.9% in that year. In the subsequent years of 2010 and 2011, the mining sector recovered only partially, while growth in the rest of the economy resumed at pre-crisis rates.

The key policy challenge for Botswana is to develop a diversification strategy that is not dependent on government spending. The non-mining sector depends, largely, on government spending which, in turn, depends on the mineral revenues. Hence, the need for diversification remains critical, despite the impressive track record of prudent management of mining revenues, good governance and a fairly well-performing economy. Greater efforts are thus required to spur the growth of the private sector to take on a more dominant role in the economy.

Botswana's first long-term development strategy, Vision 2016, developed in 1997, defined aspirations to diversify the economy, with mining, agriculture, industry, manufacturing, services and tourism all making a substantial contribution. Since then, Botswana has made deliberate efforts to diversify its economy, consolidated under the Economic Diversification Drive (EDD) that was initiated in 2011 and which emphasises the critical role to be played by the private sector in stimulating balanced and sustainable growth (Ministry of Finance and Development Planning, 2013). The reality though is that the success of the diversification drive to date is minimal and the country remains reliant on the mining sector. The efforts to thus accelerate the diversification of the economy remain a key goal in Vision 2036 that seeks to increase the share of non-diamond exports from 15% in 2014 to 23% by 2021 and 39% by 2036 (Government of Botswana, 2016).

5.2 Key challenges in the economy

Unemployment

Related to the diversification issue above is the concern of unemployment. Botswana continues to grapple with the challenge of high and persistent levels of unemployment, despite achieving impressive records of economic growth. Economic growth that does not generate sufficient decent employment is unlikely to foster human development. According to the 2014 Human Development Report, unemployment in Botswana is higher than most comparable countries that are also classified as upper-middle income economies (Figure 5.2). The Botswana Core Welfare Indicators Survey (BCWIS) of 2009/10 reported that the overall unemployment rate was estimated at 17.8% of the total labour force, with unemployment notably higher among females (21.4%) than males (14.5%) (Statistics Botswana, 2013c). This had remained fairly unchanged from the 17.5% recorded in the 2005/06 Labour Force Survey (Central Statistics Office, 2008). Notably, unemployment disproportionately impacts young Batswana. BCWIS 2009/10 results show that unemployment was highest in the 15-19 age group (41%), followed by the 20-24 age group (34%), and the 25-29 age group (22.4%). This is mainly a result of the increasing labour force against few employment opportunities created in the economy. Higher education paradoxically does not guarantee lower unemployment rates. Unemployment rates among secondary, vocational and university graduates were 28.1%, 15.4% and 9.2% respectively in 2013 (Statistics Botswana, 2014f). A major constraint in employing Batswana has been lack of relevant industry skills. Over the last decade, annual formal sector employment growth averaged 2.3%, lower than the annual growth rate of total employment, which is approximately 3.6%. In 2011, about 52% of those employed had formal sector jobs, down from 59% of those employed in 2001 (Statistics Botswana, 2011). Mining, the backbone of the economy, is highly capital intensive, with less value addition and, therefore, it generates less employment. The 2005/06 Labour Force Survey

shows that mining and quarrying contributed 3% to total employment (Central Statistics Office, 2008). Although efforts to develop the processing of diamonds such as cutting and polishing is creating new jobs, more generally, job creation in the formal sector has been quite low and a lot more needs to be done.in 2001 (Statistics Botswana, 2011). Mining, the backbone of the economy, is highly capital intensive, with less value addition and, therefore, it generates less employment. The 2005/06 Labour Force Survey shows that mining and quarrying contributed 3% to total employment (Central Statistics Office, 2008). Although efforts to develop the processing of diamonds such as cutting and polishing is creating new jobs, more generally, job creation in the formal sector has been quite low and a lot more needs to be done.

Figure 5.2: Unemployment rates in middle-income countries in Africa (Population 15+ years old)
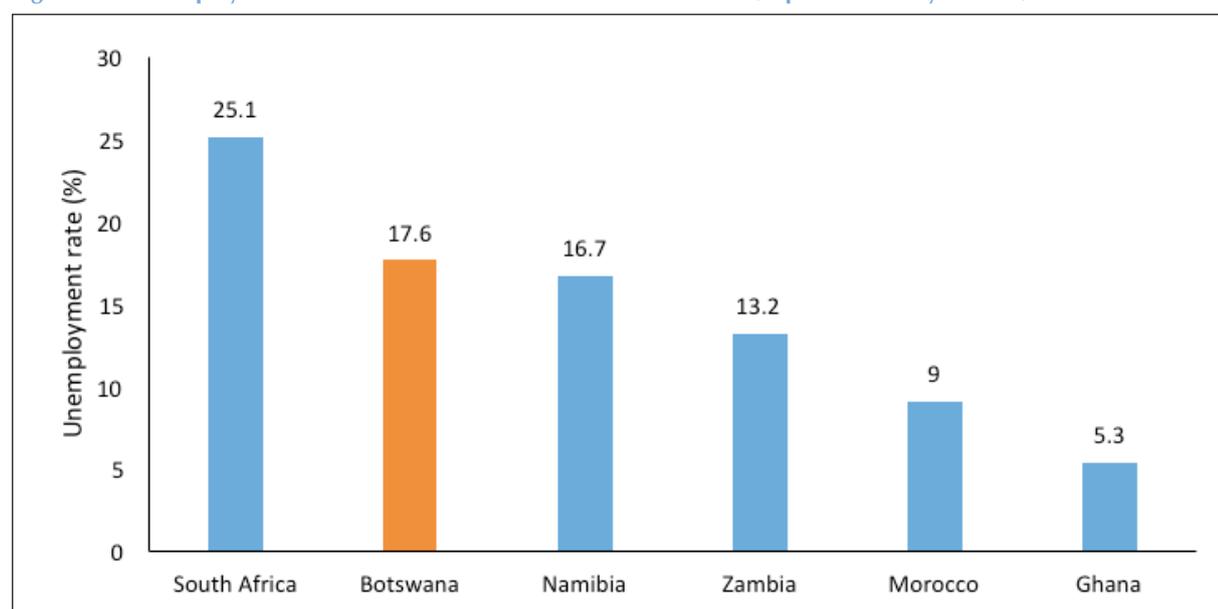
Source: UNDP (2014)

The largest sector in terms of formal-sector employment is the government. According to the 2010 Labour Statistics, the Government employed just over half (50.3%) of the total formally employed people. Figure 5.3 shows that in 2010, central government constituted 27.3% of the total formal sector employment; local government 18.7% and parastatal organisations 4.3%. Parastatals play an important role in job creation, as existing organisations expand and new ones are established. However, due to fiscal reasons (including a huge wage bill), the Government is unlikely to continue playing the role of providing majority of the jobs in the country in the long-term, highlighting the urgency of the need to diversify away from entities associated with government.

Figure 5.3: Industry distribution of private and parastatal (State agencies) sector employment
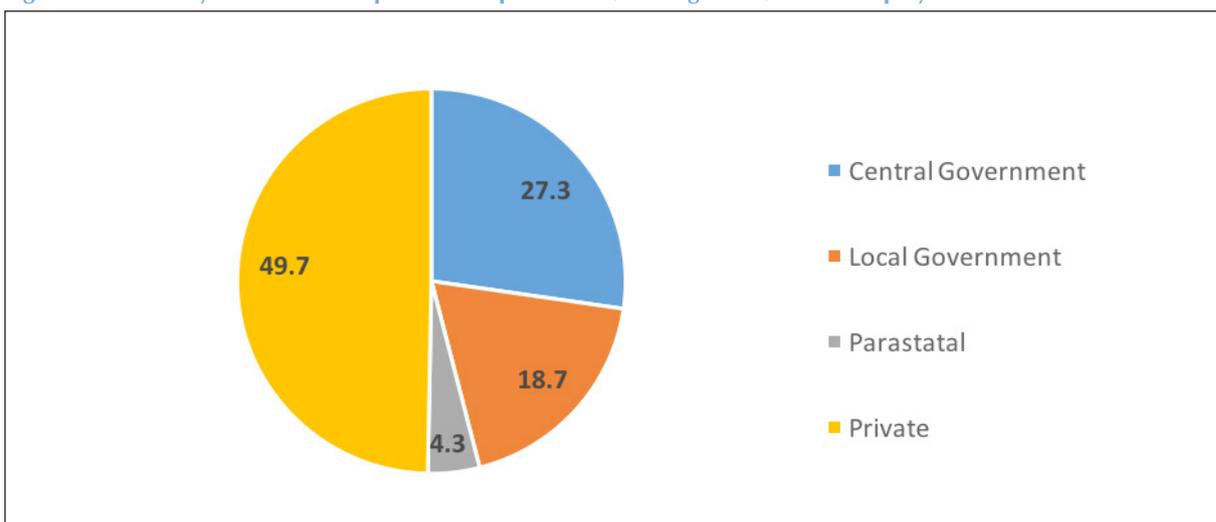
Source: Statistics Botswana, 2011

The distribution of employment in private and parastatal sectors is displayed in Figure 5.4. In 2010, wholesale and retail trade constituted 23.3% of total private employment followed by manufacturing with 18% and the construction industry with 11.5% (Statistics Botswana, 2011). While noting all the issues in the labour market, another concern is that data are not adequate to make an informed assessment of job creation in the country. For example, the most recent Labour Force Survey (LFS) was collected in 2005/06. The lack of more recent data undermines evidence-based decision making. As such, there is a need for more frequent labour force surveys, informal sector studies and education tracer studies so that policy discussions on how to address labour market problems have a solid evidence basis.

Figure 5.4: Industry distribution of private and parastatal (State agencies) sector employment
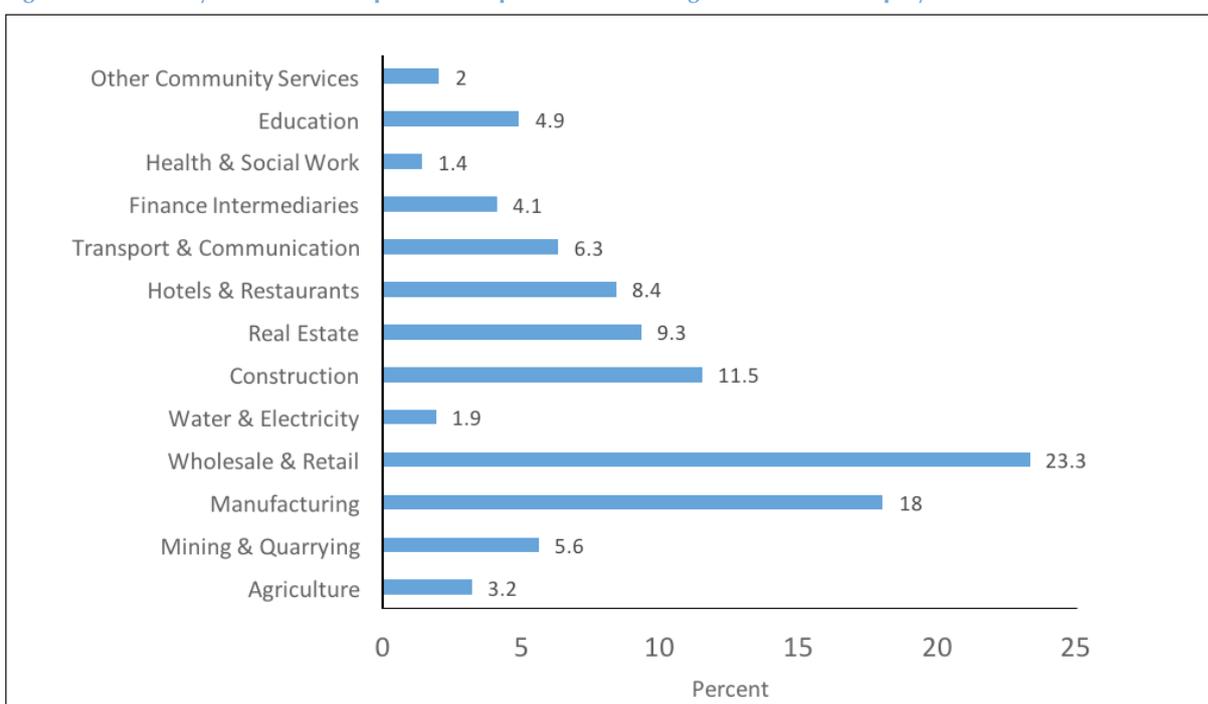
Source: Statistics Botswana, 2011

Despite continued challenges such as the slow pace of economic diversification and unemployment, Botswana remains one of the best investment destinations in the developing world. According to a survey conducted by Ernst & Young, Botswana attracted approximately 1.5% of Foreign Direct Investment (FDI) that flowed to Africa between 2003 and 2011, with a total of 80 new projects created over the period. The new projects directly contributed to job creation. The Africa Attractiveness Index 2017, Botswana was ranked the 10th most attractive country for FDI out of 46, although this was a decline by three positions from its 2016 rank (EY, 2017). The sectors that attract increased FDI in Botswana are finance, insurance, metals, communications, real estate, and hotel and tourism. Between 2003 and 2009, investment in Botswana's minerals sector accounted for the bulk of this FDI (at 38%). In 2014, the Global Competitiveness Report rated Botswana as one among the five most economically competitive nations (World Economic Forum, 2015b). In the same year, Moody's Investor Service assigned Botswana the "A2" grade credit ratings, the best credit risk in Africa and ranking the country at par with or above many countries in Central Europe, East Asia, and Latin America. To create an attractive environment for foreign investors, Botswana abolished foreign exchange controls in 1999, has a low corporate tax rate, no prohibitions on foreign ownership of companies, and a moderate inflation rate (Statistics Botswana, 2015). The country's democracy and stability also contributes to creating an attractive environment for foreign capital. In 2014, the country was ranked as Africa's least corrupt country, and on a global scale, ahead of many Western and Asian countries (Transparency International, 2014). The corruption perception results showed that the country's score improved from 5.8 in 2010 to 6.3 (zero being the most corrupt and 10 being the least corrupt) in 2014. Globally, Botswana was ranked 31st out of 175 countries. However, business opinion leaders have cited poor work ethic in the national labour force, access to financing, inadequately educated workforce, inadequate supply of infrastructure and inefficient government bureaucracy, as the top five contemporary problematic factors to doing business in Botswana (World Economic Forum, 2017).

Poverty situation

Botswana has registered progress in reducing poverty among its citizens. In Botswana, poverty is determined by computing the Poverty Datum Line (PDL) which is based on the cost of a basket of goods and services required to meet the basic necessities of life. Using this definition, the 2009/10 BCWIS reports that poverty declined from 30.6% in 2002/03 to 19.3% in 2009/10 (Statistics Botswana, 2013c). The spatial distribution of poverty incidence between 2002/03 and 2009/10 has also changed. While the rural areas and urban villages have experienced a decline in poverty incidence, the cities and towns have experienced an increase. Similarly, the percentage of persons living below the PDL in the cities and towns registered an increase of 3.4 percentage points between the two periods, from 10.6% in 2002/03 to 14% in 2009/10. BCWIS 2009/10 shows that 55.2% of the poor were women as compared to 44.8% for men.

Another measure of poverty is the proportion of the population living below an international standard of one US Dollar a day. Using this standard, Botswana has more than halved the national estimates for persons living below a dollar a day in less than 10 years, from 23.4% in 2002/03 to 6.5% in 2009/10 as shown in Table 5.2. The NDP 10 midterm review attributes the success in

the reduction of poverty to the government's direct efforts to eradicate abject poverty (Ministry of Finance and Development Planning, 2013). 2002/03 to 6.5% in 2009/10 as shown in Table 5.2. The NDP 10 midterm review attributes the success in the reduction of poverty to the government's direct efforts to eradicate abject poverty (Ministry of Finance and Development Planning, 2013).

Table 5.2: Proportion of persons living below one US dollar a day - 2002/03 and 2009/10

Strata	Total Number of Households	Total Number of Persons Estimated	Number of Households with Persons below One Dollar a Day	Number of Persons below a Dollar a Day	Proportion of Persons below a Dollar a Day
2009/10 BCWIS					
Cities/Towns	132,362	368.807	4,361	12,022	3.3
Urban Villages	170,632	654,113	6,573	39,974	6.1
Rural Areas	218,333	778,486	12,665	64,391	8.3
National	521,327	1,801,406	23,599	116,388	6.5
2002/03 HIES					
Cities/Towns	109,556	369,812	3,449	18,699	5.1
Urban Villages	121,321	545,253	15,398	105,118	19.3
Rural Areas	163,395	717,857	41,850	258,925	36.1
National	394,272	1,632,922	60,696	382,733	23.4

Source: Statistics Botswana, 2013c

Despite Botswana's impressive economic performance, upper-middle-income status, and success in poverty reduction, the country's developmental record is below its potential. Income inequality in Botswana is among the highest in the world, and is getting worse, suggesting that Botswana needs to make deliberate strategies to make its economic growth inclusive and pro-poor. The Gini coefficient is often used as a measure of how equitably income is distributed in a country and has a range from 0 to1 where zero means complete equality (all households have the same income) and 1 is complete inequality (all income is held by one household). Generally, higher values of the coefficient indicate a more unequal distribution of income and therefore, highly undesirable. Figure 5.5 shows the household income inequality in Botswana for various years. Data from the 2009/10 BCWIS show that at national level, income inequality has been rising from 0.53 in 1993/94 to 0.57 in 2002/03 and to an even higher level of 0.65 in 2009/10. The primary reason behind the unequal distribution of income in Botswana is the economy's heavy reliance on the mining sector as has already been pointed out is capital intensive but does not create many jobs thus the rapidly growing labour force in the country is faced with a huge unemployment problem. A large proportion of income from mining goes to the government. Moreover, since

labour is likely to be the most important asset of the poor, policies for income redistribution may not be that effective if the economy fails to absorb the labour force among the poor.

Figure 5.5: Gini coefficient measure of income inequality: 1993/94- 2009/10
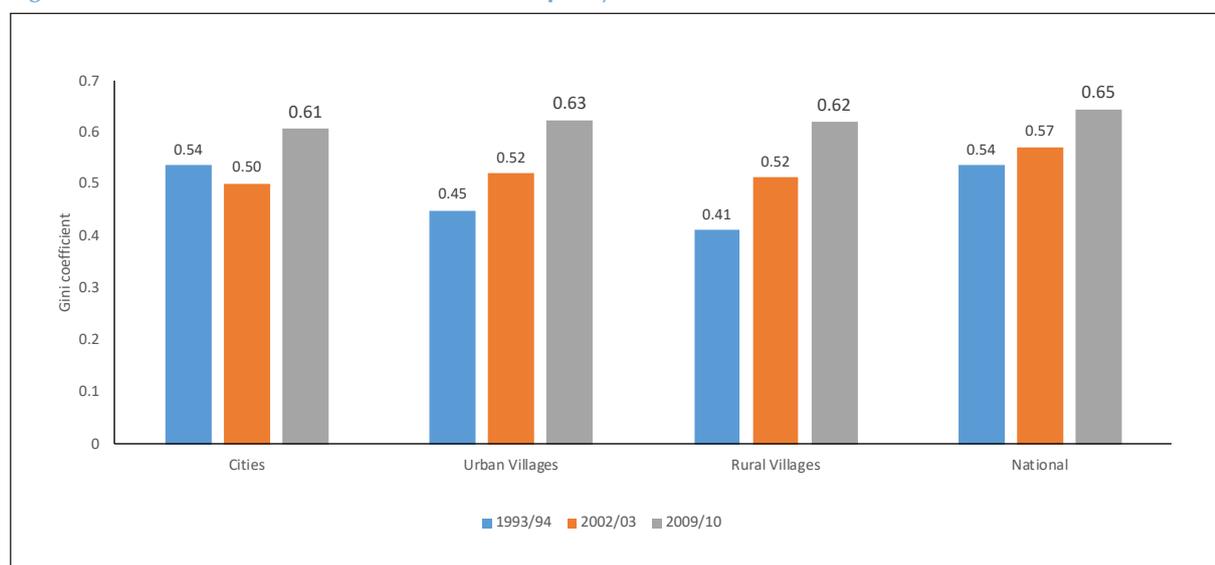
Source: International Monetary Fund, 2012; Statistics Botswana, 2011

5.3 Key opportunities for Botswana to improve its economic performance

It is acknowledged that Botswana's past favourable economic growth has been pegged to its mineral resources that are finite. The government's determination to diversify its economic base to achieve sustainable development and shared prosperity for all Batswana can be realised by building on key opportunities present today. Despite the challenges earlier outlined in Chapter 4 about the human resources in Botswana, relative to many countries in SSA, the country has invested heavily in human capital development, and this is an asset that it can use as a competitive edge in the region. As a market, Botswana's relatively small population has the implication that the country has to be outward looking and embark on strategies that can allow it to tap into the Southern Africa Customs Union (SACU) and the even larger Southern African Development Community (SADC) with the latter being home to more than 250 million people. Given the sizeable land-mass (although a large proportion is desert/arid land), Botswana has great potential for agricultural production and agribusiness development. While the country has traditionally focused on the production of beef, arable agriculture is a potentially rich growth area. The Integrated Support Programme for Arable Agriculture Development (ISPAAD) was established by the Government in 2008 to address the challenges facing arable farmers and improve the low productivity of the arable sub-sector. It also extended later to develop horticulture. Nonetheless, evaluation of the programme has noted that its failures to meet its objectives are linked to weak monitoring and evaluation and performance management mechanisms (BCA Consult, 2012). Botswana's economic performance can also benefit from its relatively stable government and commitment to the rule of law which gives it an edge as a destination for FDI in the region.

5.4. Government's response to the highlighted challenges in the economy

To coincide with its 50th independence anniversary, Botswana has launched its long-term development agenda, the Vision 2036 (Government of Botswana, 2016). Vision 2036 is the successor to Vision 2016 and will be in operation for the next 20 years. Its purpose is to achieve prosperity for all Batswana and is complemented by the National Transformation Strategy (NTS). Presently, Botswana is an Upper Middle Income Country (UMIC), and Vision 2036 seeks further positive transformation of the country to move up the ladder and become a High-Income Country (HIC). Specifically, Vision 2036 will guide socio-economic development planning and investment priorities for the next 20 years, building upon four pillars, namely:

i. Sustainable Economic Development

ii. Human and Social Development

iii. Sustainable Environment

iv. Governance, Peace and Security

Each of the pillars has specified outcomes (Figure 5.6) and related indicators and targets that will be used for purposes of monitoring, evaluation and performance management. These are very pertinent as the evaluation of the performance under Vision 2016 revealed that the main reasons for failure to achieve the aspirations of that strategy in full hinged on a weak delivery system and monitoring and evaluation mechanism (Government of Botswana, 2016). Vision 2036 is operationalised through the National Development Plans (NDPs) with NDP 11 to oversee the first phase. In addition, its success requires multisectoral participation from the government, private sector, civil society and citizens in general.

Vision 2036 aligns the national agenda with the Sustainable Development Goals (SDGs), and Agenda 2063 of the African Union (AU). Notably, in relation to this study, the four pillars of Vision 2036 are also well aligned with the pillars of the DD. Therefore the country already has a solid platform on which effective action can support it to achieve its long-term development goals. What will be key is to have a robust implementation plan and monitoring and evaluation mechanisms to ensure that both the general objectives and actual targets are reached unlike the case with the previous Vision 2016 that did not succeed in meeting a good number of the targets.

Figure 5.6: Botswana's Vision 2036 - pillars and expected outcomes
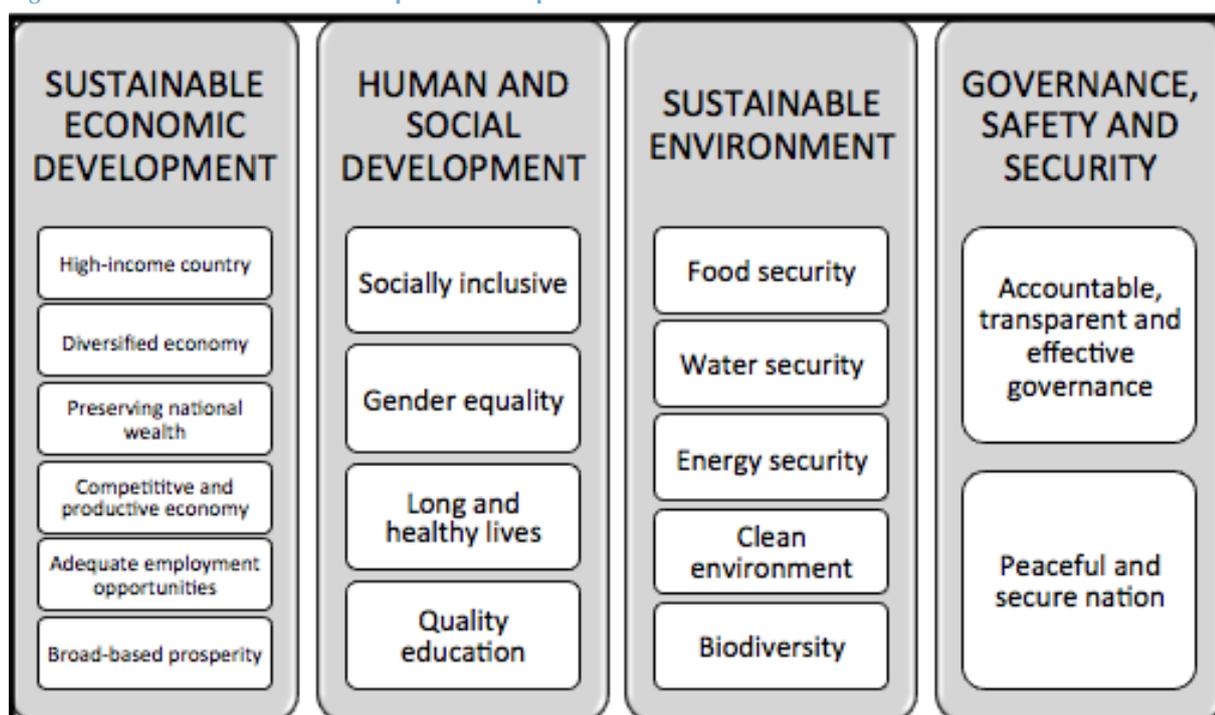
5.5. Prospects for harnessing the DD in Botswana

Botswana's relatively large working-age population can be an impetus for it to harness the DD and accelerate the achievement of its long-term development goals if the country makes strategic investments. The United Nations (2004) defines the window of opportunity for harnessing the DD to open when the ratio of under-15 population reaches less than 30% of the total population and the ratio of persons 65 years and older is still less than 15% (United Nations, 2004). The 2011 census showed that the population of Batswana under-15 years old was 33% and those who were 65 years and older constituted 5% of the population, implying that the country is close to transitioning to this state and therefore in prime position to harness the DD and achieving its development aspirations.

In developing Vision 2036, Botswana benchmarked its development trajectory on a number of countries that have themselves harnessed various levels of the DD including South Korea, Indonesia, Malaysia, Singapore, South Africa, and Thailand. Just as with Botswana, all these countries had an estimated Gross Domestic Product (GDP) per capita of less than US$ 500 in 1960 and were therefore at the time relatively low-income countries (World Bank, 2016). However, these countries have since experienced different levels of economic progress and are now categorised as High-income Countries (Singapore and South Korea), upper-middle-income Countries (Botswana, Malaysia, South African and Thailand) and lower-middle-income Countries (Indonesia).

Figure 5.7 compares the change in GDP per capita for Botswana and these benchmark countries in 1997 when Vision 2036 was developed and recent available data from 2014. In all the countries per capita GDP at least doubled over the 17 year-period with exception of South Africa where income grew by about 74%. A key notable point is that Singapore and South Korea, the countries that experienced the fastest demographic transition amongst this group, have achieved the highest levels of income.

Figure 5.7: Change in GDP per capita, 1997 and 2014 (Current US $)
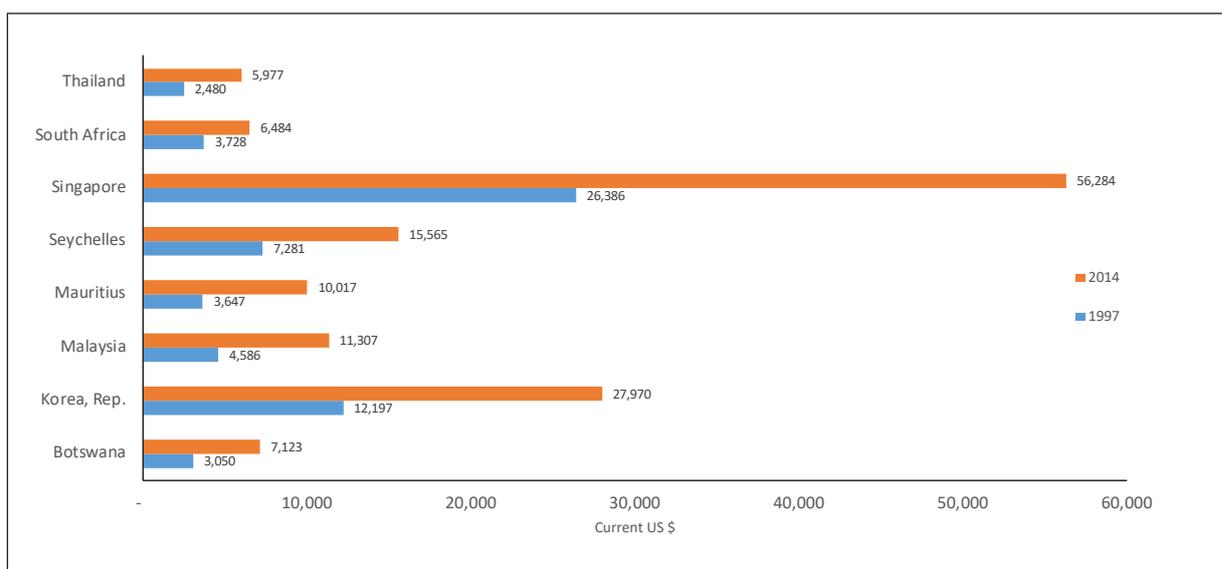
Source: The World Bank's World Development Indicators, 2016

In order to understand how Botswana compares with the benchmark countries on whether the economic growth is inclusive and improving the well-being of the general population, we examine the Human Development Index (HDI). Developed by the United Nations Development Programme (UNDP), the HDI is a composite index that measures the average achievement on three basic dimensions of human development—a long and healthy life, knowledge (education), and a decent standard of living. Using the HDI countries are scored between 0 and 1 (where 1 is the best) and ranked as being a) Very High Human Development, b) High Human Development, c) Medium Human Development, or c) Low Human Development. Table 5.3 presents the HDI performance (including the three components) for Botswana and the benchmark countries.

Out of the eight countries, Singapore and South Korea perform very well on human development and were ranked 11th and 17th respectively out of 188 countries in 2014. The two are classified as Very High Human Development countries. Next are Malaysia (62), Mauritius (63), Seychelles (64) and Thailand (93), and they are categorised as High Human Development. Botswana is ranked 106 out of 188 countries while South Africa ranked 116 out of 188 countries, and both countries fall in the Medium Human Development category.

The last column in the table shows the net difference in country ranking if HDI is used compared to the ranking the country would have if Gross National Income (GNI) per capita only is used. Countries whose GNI ranking is much higher than the HDI ranking represent cases where the income generated by the country is not translating into widespread improvements in the well-being of its people. According to this measure, Botswana fares worst of the eight countries as its GNI rank would place it 41 places above its HDI rank. This suggests that though Botswana is a UMIC, the standard of living for a significant portion of its population is not at the expected level for the country's income ranking. In other words, it is a pointer to high levels of inequality and an indicator that the country is not meeting its aspirations for shared prosperity by the people. However, South Korea fares best with its HDI ranking being 13 places above its ranking by income.

Table 5.3: Human development comparisons, 2014

Country (Human Development Classification)	HDI Rank	HDI Value	Life Expectancy at Birth[11] (years)	Expected Years of Schooling[12] (years)	Mean years of Schooling[13] (years)	Gross National Income (GNI) per capita[14] (2011 PPP $)	GNI per capita rank minus HDI rank
Botswana (Medium)	106	0.698	64.5	12.5	8.9	16,646	-41
Korea, Rep. (Very High)	17	0.898	81.9	16.9	11.9	33,890	13
Malaysia (High)	62	0.779	74.7	12.7	10.0	22,762	-14
Mauritius (High)	63	0.777	74.7	15.6	8.5	17,470	0
Seychelles (High)	64	0.772	73.1	13.4	9.4	23,300	-19
Singapore (Very High)	11	0.912	83.0	15.4	10.6	76,628	-7
South Africa (Medium)	116	0.666	57.4	13.6	9.9	12,122	-29
Thailand (High)	93	0.726	74.4	13.5	7.3	13,323	-13

Source: UNDP Human Development Report 2015 Statistical Annex

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[10]**Life expectancy at birth** is the number of years a new-born infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

[11]**Expected years of schooling** is the number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.

[12]**Mean years of schooling** is the average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

[13]**Gross national income (GNI)** per capita is the aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population.

Note that life expectancy at birth is notably low in Botswana (64.5 years) and South Africa (57.4 years) compared to the other countries, where the next lowest is at least 73 years. High disease burden due to HIV and AIDS in the 1990s impeded improvement in life expectancy in the two countries. The expansion of HAART and intensification of HIV prevention measures have rejuvenated improvements in life expectancy over the past decade or so in both countries. The much longer life expectancy at birth in countries like Singapore and South Korea reflect the generally better well-being of the population including better healthcare and nutrition over the life course.

There are also significant differences among the countries in education attainment. For instance, a child beginning their education (grade 1) in South Korea today is expected to complete 16.9 years in school. This, in practical terms means that child is likely to at least attend 4 years of college. In comparison, the 12.5 years of expected education in Botswana translates into an attainment of secondary school level education.

Differences in education attainment are not only significant for economic development of the country but also for individual earnings. A recent study on returns to education over time (1970-2013) for 139 economies estimates that on average each additional year of education attainment is associated with an 11% increase in individuals' earnings (Montenegro, C.E. and Patrinos, H.A., 2014). Returns to education are generally higher for females (11.7%) than for males (9.6%). Also, the returns by levels of education attainment are highest for tertiary education (15.2%), followed by primary education (10.6%) and lastly secondary education (7.1%). The study also notes that returns to education are more significant for low-income and middle-income economies than for high-income economies (Montenegro, C.E. and Patrinos, H.A., 2014). Given these huge returns to education attainment, strategic investments in improving years of schooling and overall human capital development will be crucial to enable Botswana optimise the development potential of its youthful population.

6 | Governance

Good governance[15] and accountability are critical for sustained and equitable socio-economic development of a country. Governance practices and the role of politics in economic decisions affects the quality of public institutions, social policies, and enforcement mechanisms for the rule of law (Adam and Mengistu, 2008; Ndulu and O'Çonnell, 1999; Pradhan and Sanyal, 2011; Woo-Cummings, 1999). Governance is a vital crosscutting ingredient for the success of all pillars of the DD. First, good governance principles would make it possible to allocate public resources to productive investments in economic growth and human capital. Second, good governance entails accountability and efficiency in service delivery, which would ensure efficient transformation of resources into development outcomes and, more broadly, the careful monitoring of efforts to address development bottlenecks. Transformative governance requires targeted investments that promote inclusivity, along with policy and operational research that support well-resourced, visionary, developmental leadership. In addition, sufficient technical capacity of planners and service providers, and accountability frameworks are required to implement programmes efficiently and successfully.

Botswana has for a long time been an example of best practices in governance in sub-Saharan Africa. Compared to most states in the region Botswana has a long history of successive democratic elections and succession, political stability and prudent use of its natural resources. Governance, peace and security, the fourth pillar of Vision 2036, seeks to make Botswana a land of peace, freedom and progressive governance. The tenets of good governance outlined in Vision 2036 include minimal crime and corruption, active participation of civil society and communities (including both men and women) in the national development process, an accessible and efficient judicial system, and ultimately, a peaceful and politically stable country that is attractive for investment. Enhanced measures to effectively operationalise these tenets of good governance can improve Botswana's chances of maximising the DD.

Objective measurement of good governance and accountability is quite a difficult task and most indices and measures are often based on surveys that rely on the perceptions of respondents. Such surveys carried out in African countries include Afrobarometer, the Ibrahim Index of African Governance (IIAG) and Transparency International's Corruption Index. The latter two are included as high-level outcome indicators for monitoring performance in the Governance, Safety and Security pillar of Vision 2036. Also included as outcome indicators are the Worldwide Governance Indicators (WGI). This chapter mainly draws from the WGI since they allow comparison between Botswana and other countries on various aspects of governance. Details on the WGI are publicly available at www.govindicators.org. Table 6.1 presents the WGI indicators that are relevant for the maximisation of the DD.

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[15]The World Bank defines governance as "the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises mechanisms, processes and institutions, through which [the state], citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences in furtherance of their welfare and the values of a good and progressive society."

**Table 6.1: Description of World Governance Indicators (WGI)**

Indicator	Descriptive definition
Regulatory quality (RQ)	Capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
Political stability and absence of violence (PV)	Capturing perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.
Government effectiveness (GE)	Capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
Voice and accountability (VA)	Capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media.
Rule of law (RL)	Capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
Control of corruption (CC)	Capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Country scores of these variables are used to assign a percentile rank to individual countries relative to all others included in the measure. A percentile rank simply shows the percentage of countries that fall below the score applicable to the reference country. For example, a percentile rank of 66% for regulatory quality for Botswana in 2009 indicates that in that year, of the total number of countries that were assessed on this variable, 66% of them performed worse than or had scores equal to that of Botswana. Figure 6.1 shows Botswana's performance between 2004 and 2014 as measured by the WGI indicators compared to the average performance of countries in SSA, UMICs and HICs that are members of the Organisation for Economic Cooperation and Development (OECD). On each of the indicators, a country scores between 0 and 1 that is used to assign it a percentile rank relative to all other countries covered by the WGI in a specific year.

Botswana's performance on the WGI indicators support its general good reputation for good governance and accountability. The country is ranked above more than two-thirds of the countries in all the indicators except the Voice and Accountability category where it is ranked at the 59th percentile or better for all three years. Botswana has ranked appreciably above the average rank of countries in Sub-Saharan Africa and also performs better than the average of UMICs. Nevertheless, the ranking got worse on most of the indicators between 2004 and 2014. The exception is the Political Stability and Absence of Violence/Terrorism where the country registered consistent improvement in its percentile rank over the period from 77 to 85. A negative trend was recorded for Government Effectiveness and the Control of Corruption. The Voice and Accountability measure and the Rule of Law rank did not have a consistent trend while the Regulatory Quality was at the same rank in 2014 as was the case in 2004.

Significantly, the Vision 2036 target is to be at the 85th percentile. Therefore, Botswana still has some room for improvement and should also tread with caution to ensure that for the aspects in which it has slid down the ranks, measures are taken to ensure positive movement.

Figure 6.1: Comparing Botswana's governance performance and averages of select country groups (Worldwide Governance Indicators)
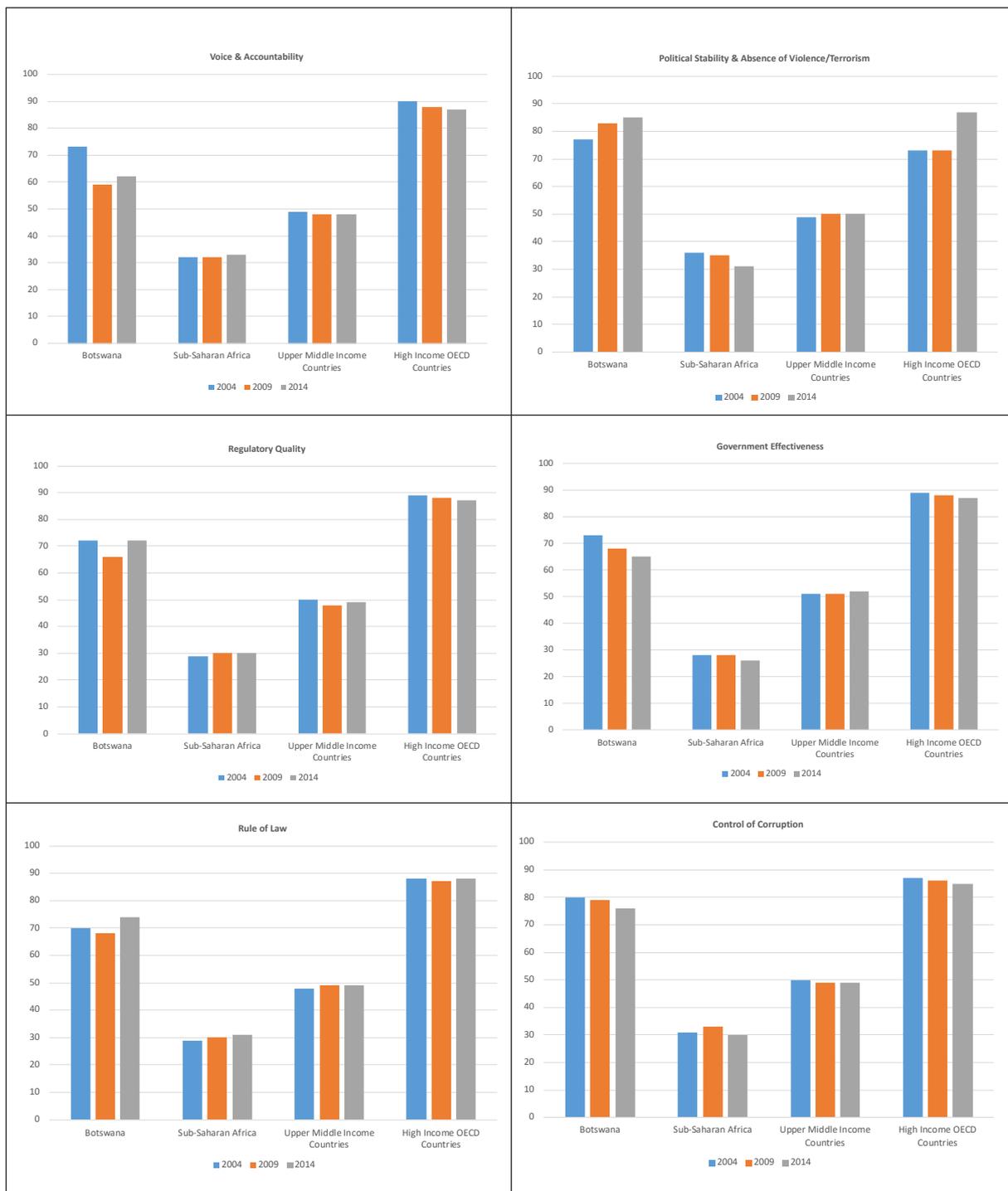
Source: www.govindicators.org

An important aspect of governance is inclusivity in participation in decision making. Women have historically been on the margins of decision-making at almost all levels of development. Vision 2036 includes the World Economic Forum's Gender Gap Index (GGI) as one of the measures for gender equality. Components that make up the overall index score include economy, education, health and politics. Between 2006 and 2015, Botswana made positive strides in improving on all but the last component (politics). In 2015, out of a top score of 1 for gender parity, Botswana scored 0.8 for Economy (ranking 15th out of 145 countries), 1 for Education (ranking 1st out of 145 countries), and 0.973 for Health (ranking 87th out of 145 countries). In contrast the country scored a paltry 0.068 for Politics (ranking 126th out of 145 countries). This low score on gender parity in politics, in particular, contributed to its relatively low average ranking of 55 out of 145 countries with a mean score of 0.710 (World Economic Forum, 2015a).

While Botswana performs well on governance and accountability indicators compared to other countries, a key question that has to be examined is why the country is not doing as well as it should in translating its natural resource wealth and high per capita GDP into good well-being indicators? For instance, while the country appears to invest considerable resources to human capital development (education and health sectors), outcomes fall short of the levels achieved by fellow UMICs and the country is ranked among the most unequal countries in the world.

Therefore, Botswana needs to re-examine its governance and accountability principles, frameworks and practices, with the intention of strengthening them to address pervasive development bottlenecks and ensure effectiveness in use of its resources. The integrated development agenda to harness a maximum DD will rely on enhanced monitoring and performance management measures that optimise the provision of effective public services. The culture of good governance and accountability also has to be inculcated not only in the public sector but also in the private sector. Improvements in governance should seek to achieve the following outcomes if the country is to maximise its DD and attain its long-term socio-economic transformation aspirations:

a.   A developmental political settlement i.e. a system of rules and practices for governance that enables political, technocratic and business elites to shape, pursue and encourage achievement of explicit developmental objectives.

b.   Social inclusion, i.e. participatory development processes whose positive outcomes are enjoyed by, or reach out to, all social groups.

c.   Transparency and accountability for decisions, indecisions, actions and inactions and for prudent use of resources in the delivery of policy objectives.

d.   Performance-based work culture and improved levels of public integrity achieved through spirited measures to control and stamp out corrupt practices that stand in the way of delivery of public goods and services.

e.   Promoting the spirit of collective action across the political divide and involving government, private sector, civil society and non-governmental organisation in a pursuit of clearly defined development goals.

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[18]Leftwich Adrian (1996) Two Cheers for Democracy? Democracy and the Developmental State, in Adrian Leftwich (ed.) Democracy and Development (Polity: Cambridge)

7 Prospects and Potential Contribution of the Demographic Dividend to Botswana's Development Aspirations

The National Transfer Accounts (NTA) framework was developed to analyse what is referred to as the 'generational economy', which is defined as "the social institutions and economic mechanisms used by each generation or age group to produce, consume, share, and save resources" (Mason and Lee 2011). By measuring different types of economic flows across the lifecycle, the NTA enables a better understanding of the patterns of the flows that characterise the generational economy across age groups. The key aim of NTA is the quantification of economic flows for single-year age cohorts. Individuals may receive inflows of resources in the form of labour income (Y l), asset income (Y A) and transfers from others (_+). These resources may then be used for consumption (C), transfers to others (__) and savings (S); these are the outflows. For any individual, inflows must equal outflows. Rearranging the terms yields the following identity, which governs NTA (Lee 1994) and is valid for each age cohort (x):

$$\underbrace{C(x) - Y^l(x)}_{\text{Lifecycle deficit}} = \underbrace{\tau^+(x) - \tau^-(x)}_{\text{Net transfers}} + \underbrace{Y^A(x) - S(x)}_{\text{Asset-based reallocations}} \qquad (1)$$

In other words, the lifecycle deficit (C(x) _ Y l(x)) equals net transfer inflows (_+(x) _ __(x)) plus asset-based reallocations (Y A(x) _ S(x)). Since this identity holds true at the individual level, it also holds true at the cohort level and in the aggregate. Accordingly, lifecycle deficits — where consumption exceeds labour income — must be financed through a combination of net inflows from transfers and asset-based reallocations. Individuals and cohorts with lifecycle surpluses would see net outflows in the form of transfers and/or asset-based reallocations.

This study uses the NTA methodology to estimate the size of the DD that Botswana can earn under various scenarios. As will be explained below, to do this, estimates of consumption (C) and of labour income (YL) are required. Labour income is differentiated into two types, namely:

• Employment earnings (YLE); and

• Self-employment earnings (YLS).

For consumption, the NTA differentiates between:

• Private consumption (CF), which consists of:

  o Private consumption of education (CFE);

  o Private consumption of health (CFH); and

  o Private consumption of other items (CFX);

• Public consumption (CG), which consists of:

  o Public consumption of education (CGE);

o   Public consumption of health (CGH); and

o   Public consumption of other items (CGX).

To generalise the construction of NTA profiles, first, an age profile for a given flow is constructed using either household survey data or detailed administrative data. The age profile plots the mean per capita value of the flow – averaged across all individuals within each age cohort, whether or not an individual experiences the given flow – at each age. For example, the labour income profile is the mean labour income across all individuals within each cohort, including individuals who are employed, unemployed or not economically active. In the latter two cases, individuals' labour income equals zero and these zeros are included in the calculation of the mean. The mean per capita value of the flow as reflected by the age profile is, then, a combination of the proportion of individuals experiencing that flow and the average value of the flow for those who do experience it.

Next, the age profile is combined with a national population distribution and its level is adjusted so that the implied aggregate value (i.e. the age profile multiplied by the population distribution) equals a control total derived from national accounts or national budget data. The adjustment is made multiplicatively, so that the value at each age is adjusted proportionally. The resulting profiles are then aggregated to derive the various profiles of the lifecycle deficit, net transfers and net asset-based reallocations. To aid inter-country comparisons, standard practice in NTA research is to normalise all age profiles by dividing them by the unweighted mean labour income for 30 to 49-year olds, referred to here as peak labour income. Full details of the NTA methodology can be found in the UN manual for the NTA (United Nations 2013).

7.1   Estimating the Demographic Dividend within the National Transfer Accounts (NTA) framework

The NTA methodology seeks to quantify the generation and use of economic resources at different ages across the lifecycle. A key feature of the economic lifecycle is the variation in consumption and labour income by age that reflects the mismatch between material needs and the capacity to meet those needs through ones' own labour. In societies around the world, the young and the old on average tend to consume more than they produce through their own work. In contrast, working-age adults consume less than they produce. A system of transfer of resources between and across generations is therefore essential to maintain the standard of living of the most vulnerable sections of the population (children and the elderly) and ensure that future generations are better off than the current generation (United Nations, 2013).

The lifecycle deficit (or surplus) is, as noted, the left-hand side of the NTA identity: the right-hand side of the identity then details the financing of the deficit (or the 'distribution' of the surplus) for each age group. For example, a lifecycle deficit generated by a child – whose consumption exceeds her labour income – may be financed through net private transfer inflows (from her family, in the form of food and housing, for example) and net public transfer inflows (from the state, in the form of in-kind consumption of education and health services, for example). An elderly person's lifecycle deficit, on the other hand, may be financed through net public transfer inflows (from the

state, in the form of in-kind consumption of health services or as social grants) and through income generated from their assets or dissaving (i.e. positive asset-based reallocations). A working-age adult's surplus may be distributed to others through private transfer outflows, or through the taxes they pay to the state; at the same time, the individual may be saving for retirement, generating negative asset-based reallocations.

Figure 7.1 illustrates the lifecycle deficit and its components – labour income (upper panel), consumption (middle panel), and the lifecycle deficit (bottom panel, and calculated simply as the difference between consumption and labour income) – graphically. These profiles are calculated as the median across the 35 countries for which these NTA profiles are available in the NTA database.

Figure 7.1: Labour income and consumption across the lifecycle[17]
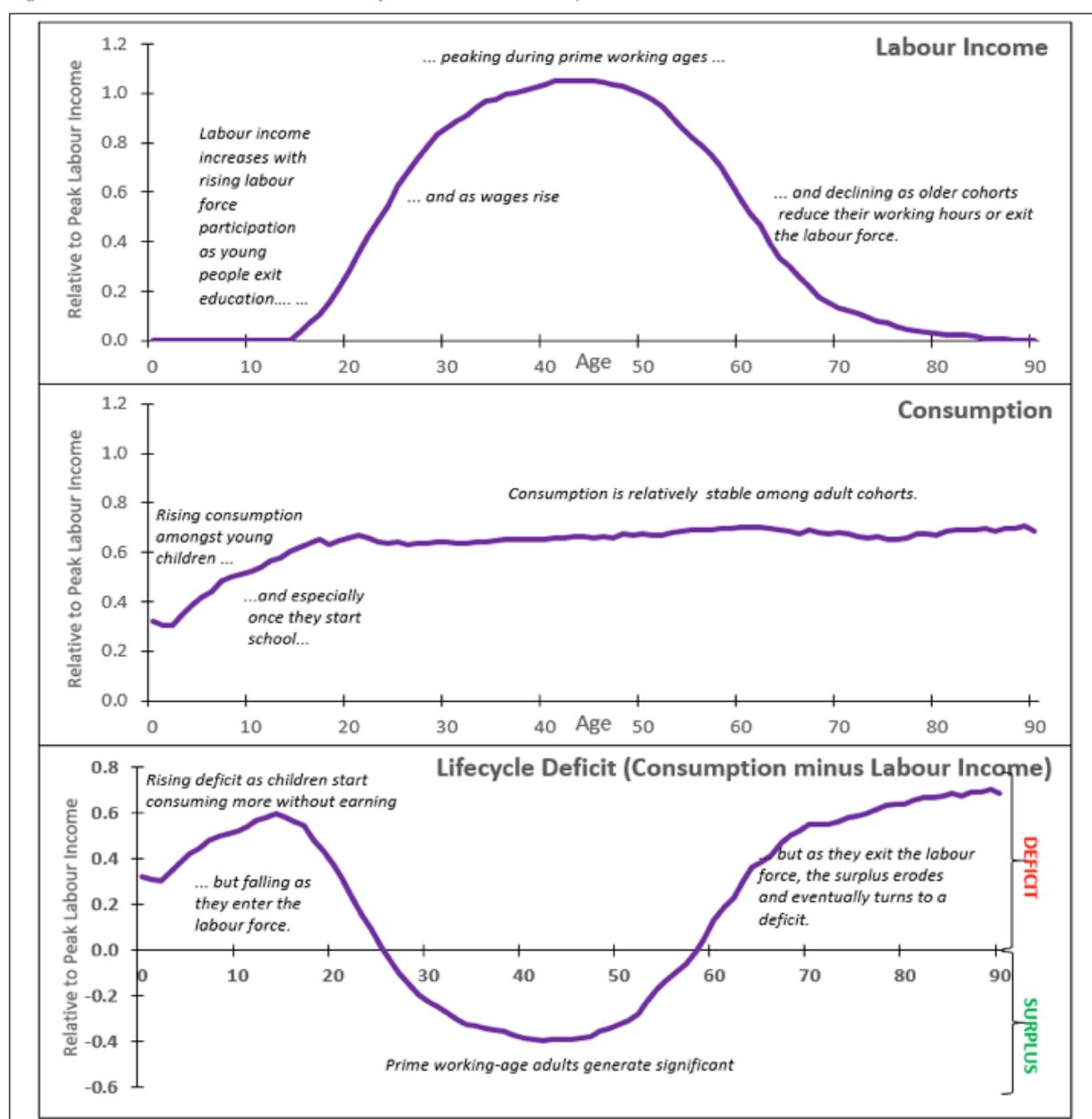
Source: NTA Network

Combining the NTA profiles with population estimates and projections, it is possible to analyse the consequences of changing age structure on economic growth. One such structural change relates to the rising share of the population within the working-ages associated with the demographic transition. The effects of a changing population age structure on economic growth can be understood in terms of a simple identity (United Nations, 2013):

$$\frac{C}{N} = \frac{(1-s)Y}{L} \cdot \frac{L}{N}$$

where C/N is consumption per consumer, s is the savings rate, Y/L is income per effective worker, and L/N is the ratio of the number of workers relative to the number of consumers. Living standards, as reflected here by consumption per consumer (C/N), are therefore a function of the income generated and consumed by each worker ((1-s)Y/L) and the support ratio (L/N). Expressing the identity in terms of growth rates yields:

$$gr\left(\frac{C}{N}\right) = gr\left(\frac{(1-s)Y}{L}\right) + gr\left(\frac{L}{N}\right)$$

where gr(x) is the growth rate of x. Changing population age structures affect living standards through their effect on the support ratio; thus, the first DD impacts on living standards through the rate of change of the support ratio, the second term on the right-hand side of the equation. Accordingly, "a 1 percentage point increase in the support ratio leads to a 1 percentage point increase in the standard of living" (United Nations, 2013). The first term on the right-hand side of the equation is the route through which the second DD operates.

The purpose of this study is to estimate the first DD and therefore estimate the support ratio over time for Botswana. In practice, the support ratio is calculated as the ratio of the population-weighted labour income profile (i.e. total labour income) to the population-weighted consumption profile (i.e. total consumption). The default projection of the DD within the NTA framework assumes fixed consumption and production profiles, while the demographic change follows the medium scenario of the UN population projections. However, extensions to this scenario can be explored to enrich the analysis. For instance, other population projection scenarios can be applied, or simulations under different labour income profiles can be applied. In this study, both of these avenues are explored and the results and implications of these different scenarios are presented later in this section.

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[17]Note: Median profile for 35 countries including Argentina (1997), Australia (2010), Austria (2010), Brazil (2002), Canada (2006), Chile (1997), China (2002), Colombia (2008), Costa Rica (2004), Finland (2004), France (2005), Germany (2003), Hungary (2005), India (2004), Indonesia (2005), Italy (2008), Jamaica (2002), Japan (2004), Kenya (1994), Mozambique (2008), Nigeria (2009), Peru (2007), Philippines (1999), Senegal (2005), Slovenia (2004), South Africa (2005), Rep. of Korea (2000), Spain (2000), Sweden (2006), Taiwan, Province of China (2003), Thailand (2004), United Kingdom (2010), Uruguay (2006), United States of America (2003), and Viet Nam (2008).

Support ratio vs. dependency ratio

It is important to note the difference between the support ratio and the dependency ratio that is often used by demographers and economists. The dependency ratio is an approximation of the economic support, pegged on the population in the theoretical working-ages (15-64) out of the total population. It assumes that all people of working-age are effectively working, while those who are outside active ages (15-64) are all dependents. The NTA framework does not make this assumption. Instead, NTA uses actual data on consumption, transfers and income rather than just making estimates based on age. This reveals a more complex reality in which the age of dependency can extend well beyond age 15. With high unemployment rates among young people, increasing numbers opt to continue living with their parents and other relatives well into their late twenties. Conversely, the NTA can also capture the reality of early/child labour in countries or regions where this is prevalent. Nevertheless, though significant numbers of children may be engaged in income-generating activities, the reality is that on average, even in these countries, children as a group generally consume more than their labour income and therefore contribute to the overall dependency burden. In addition, for developing countries with large numbers engaged in the informal sector and with poorly developed social safety nets for the elderly, the NTA would also capture the reality of many elderly people who are not dependents in the sense that they may be working and earning a livelihood.

7.2 Data

This study relied on various data sources for analyses, and a short description and justification of the data used follows below.

Household survey data

Household survey data is central to the construction of the NTA profiles: it is from this data that the shapes of the majority of profiles are determined. Ideally, a single household survey that would include all the required data would be used; however, this is often not possible. In such instances, different pieces of data from different datasets are employed in order to compile the profiles.

The Botswana Core Welfare Indicators Survey (BCWIS) 2009/10, a nationally representative household survey, provided the necessary microdata to develop the labour income and consumption profiles. The NTA profiles constructed were thus anchored to 2010 as the base year for analyses. The microdata utilised from the BCWIS 2009/10 included the following information:

• Age of each household member.

• Income from work (whether employment or self-employment) for each household.[18]

• Household expenditure data, with specific detail on: (1) education; and (2) health.

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[18]In calculating the labour income profile, individual-level data on income from work is the preferred format. Unfortunately, although the BCWIS 2009/10 survey did collect this data at an individual level, the microdata only reported these variables at the household level.

Macro controls

Macro controls, also referred to as aggregate controls, are used to adjust the levels of the profiles so that, once weighted by the age-specific population estimates, they are consistent with national accounts. Data underlying the macro controls were abstracted from the National Accounts for 2010 for Botswana, supplemented by expenditure data from consolidated national budgets for the same year. Data for the macro controls were primarily drawn from:

• the generation of income account.

• the allocation of primary income account.

• detailed estimates of household final consumption expenditure according to purpose.

In order to disaggregate government consumption as reported in national accounts, additional information was drawn from actual expenditure figures reported in national budget documentation, with particular detail on education and health.

Population data

Detailed population data—population per single-year age cohort—is required for three key purposes:

a) To correctly apply the macro controls;

b) To aggregate these profiles, i.e. to calculate total labour income or total private education consumption within a country; and

c) To project NTA profiles into the future, which is required for the estimation of the DD.

To ensure consistency across NTA countries, country teams use population estimates and projections from the United Nations' World Population Prospects. For baseline projections, the study relied on the medium fertility variant projections from the 2015 Revision of the World Population Prospects (United Nations, 2015). The UN data allow for projections far into the future, but mindful of the increase in uncertainty in projections with time, the decision was made to cap the end year of the simulations to the year 2060.

7.3 Labour income, consumption and the lifecycle deficit in Botswana

In this section, the patterns of labour income and consumption in Botswana in the base year 2010 and the resulting lifecycle deficit profile are discussed. The labour income and consumption patterns underlie the NTA estimates used to calculate the support ratio and the first DD. Further, the aggregate profiles generated for Botswana are compared with selected profiles generated from existing data within the NTA network database.

Per capita labour income in Botswana follows the expected lifecycle pattern whereby labour income begins to rise among teenagers, beginning to rise steeply from the early twenties when a majority of young people are exiting the education system and joining the workforce, peaks in the most economically productive middle-ages, and then declines rapidly as most older persons retire from the labour force (Figure 7.2). In 2010, labour income (specifically, self-employment earnings) is observed from as early as the age of 7 years where recorded average per capita income of Pula (P) 133[19]. By age 15, the average income recorded was P 974. For children under 14, all of this income is derived through their involvement as unpaid family workers in self-employment activities, and while the amounts may seem relatively large, even 15-year olds are earning just 1.6% of peak labour income.

Figure 7.2: Per capita labour income (YL) and Consumption (), Botswana, 2010
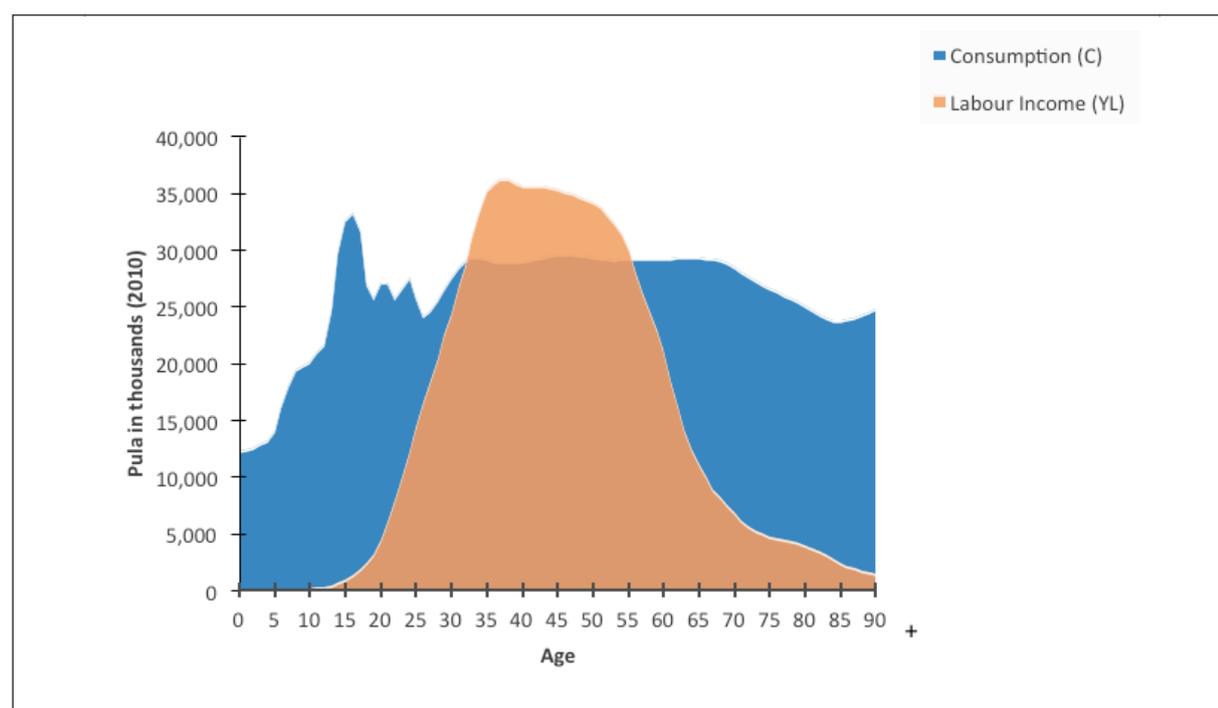
Source: Study estimates

By 20 years of age, the labour income has risen significantly to an average of P 4,472 and rises sharply thereafter to peak at 37 years of age at P 36,335. Per capita income thereafter starts declining, at first slowly, and then rapidly. The most significant drop in labour income is between age 60 (P 21,237) and age 61 (P 18,473), a 13% decrease in per capita income. Age 60 is the official retirement age in Botswana for most occupations. Nevertheless, the study also found that even at very old ages, there are Batswana generating labour income. Those in the 90+ age group earned an average of P 1,538 (or 2.7% of peak labour income) in 2010.

The consumption profile for Botswana suggests relatively high levels of consumption in the country. Per capita consumption rises gradually from about P 12,199 per capita in the first year of life, and then begins to rapidly increase from age 5, coinciding with entry into the grade school system. As costs of education rise with entry into schooling, consumption rises rapidly, peaking at P 33,248 at age 16. It is instructive that thereafter there is a marked drop in consumption, driven

[19]Botswana Pula 1 = US Dollar 0.0933 (Bank of Botswana http://www.bankofbotswana.bw exchange rates January 4th 2017)

by a fall in consumption of education at that age. While Botswana has an automatic promotion policy that would allow a majority of students to proceed through to the end of junior secondary, promotion to senior secondary school is restricted to those who pass the Junior Certificate of Education (JCE) examination at the end of grade 10 (Republic of Botswana, 2015). The expected age of students in grade 10 is 16 years.

After age 16, consumption fluctuates within a relatively narrow range before stabilising from about age 32 (consumption is estimated at P 29,082 per capita at this age). Per capita consumption levels are fairly constant from this age until about 70 years at which point it begins to decline gradually.

Average annual consumption per person is higher than average labour income per capita from infancy to age 32. Over a range of 23 years between the ages of 33 and 55, mean per capita labour income exceeds per capita consumption. Thereafter, labour income again falls below the level of consumption. In sum, individuals under the age of 32 years (the young age dependency) and those aged 55 years and above (the old age dependency) contribute to the dependency burden in Botswana. This real-life economic dependency is substantially different from the often-used theoretical dependency ages of 0-15 years and 65+ years, and it better captures the realities of consumption and income. On average, compared to the theoretical dependency ratio, the NTA methodology that relies on the effective support ratio demonstrates an earlier onset of the period in which a country can capitalise on the DD. This also means that the NTA methodology brings into sharp focus the urgency for the implementation of policy actions to harness and maximise the DD.

Aggregate consumption and labour income

To take account of the age structure of the population and its implications for aggregate consumption and labour income, the per capita profiles in figure 7.2 above are weighted by actual population size at each age to calculate the aggregate labour income and consumption profiles in figure 7.3 below. In the case of Botswana, once this is done, the most striking observation is the very large magnitude of consumption relative to the labour income. This is because Botswana's population is concentrated at younger ages where the majority are either entirely dependents with no labour income or generating very little labour income. According to the UN population estimates for Botswana, the population of Batswana between 0 and 32 years constituted 70% of the total population in 2010. As noted in the per capita profiles, it is only at age 33 that the average individual began to generate a surplus by earning more from their labour than they consumed. High levels of unemployment and limited opportunities in the labour force for making decent wages among young people have contributed to the inability of younger adults in their twenties and early thirties to fully finance their consumption through their labour income.

Moreover, as shown in Figure 7.3, those in the age range 33-54 years make a very small aggregate lifecycle surplus. An aggregate deficit is then again observed from age 55 although this is not as pronounced as in the younger ages since the proportion of those 55 years and older is just around 8% of the total population.

Figure 7.3: Aggregate Labour Income (YL) and Consumption (C), Botswana 2010
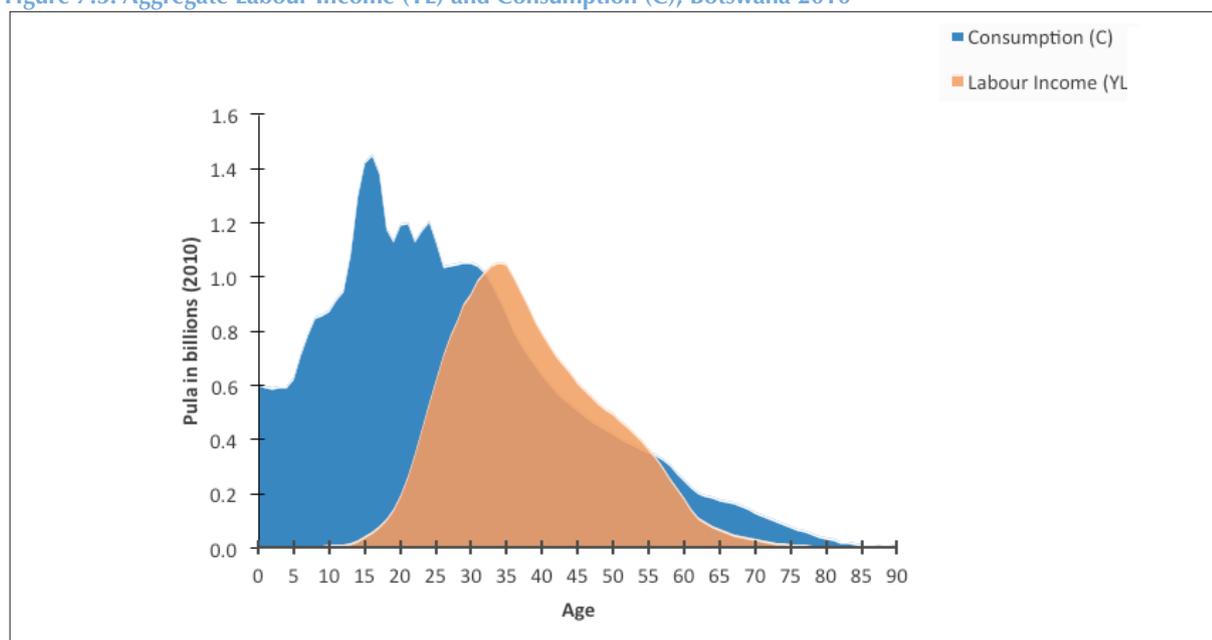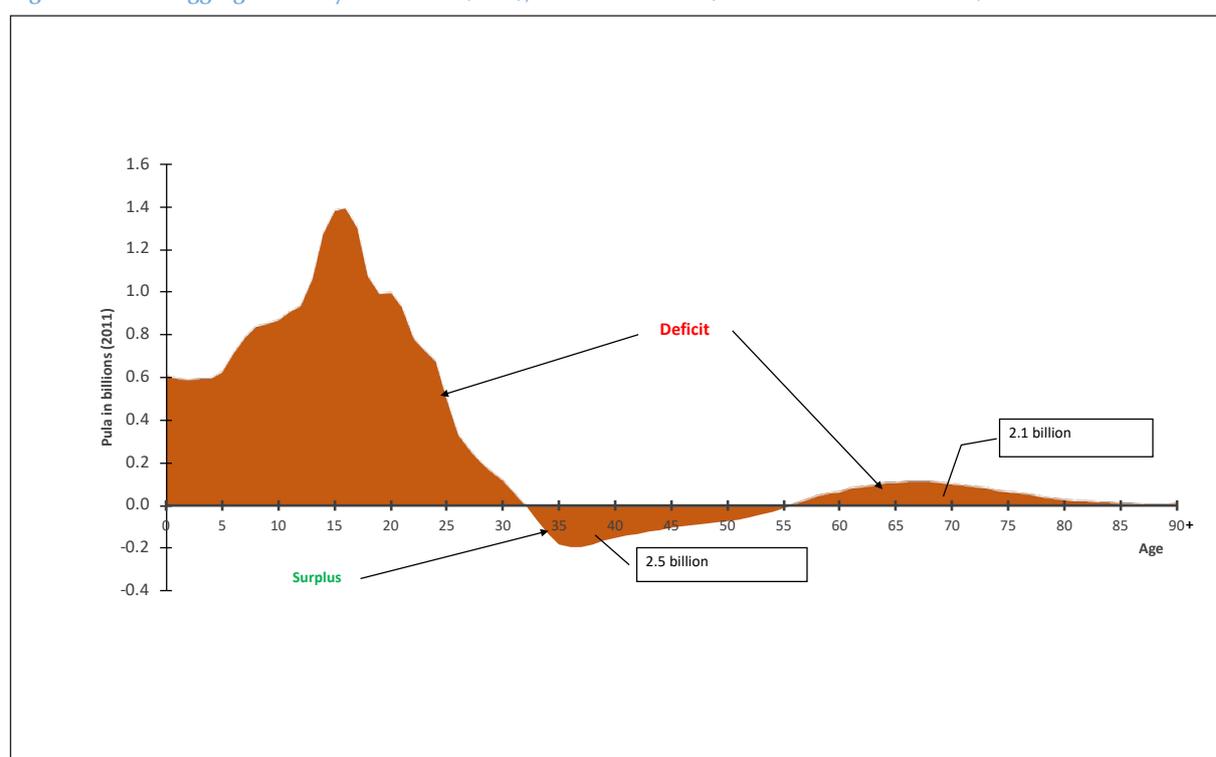

Source: Study estimates

Data from countries across the world that have applied NTA analysis show that general dependence during the life course in the early phases lasts around 25 years. Lee and Mason (2011) thus classify those between age 0 and 24 as children. Many individuals of this age are either still going to school and/or have not yet begun to earn significant labour income. Borrowing from this classification, this study examined the consumption needs of children (0-24 years) in Botswana in 2010 as a percentage of the total labour income. The findings show that the consumption needs of this age group is a massive 90% of the total labour income. In comparison, analysis of NTA data from South Korea (2000), a country that has been noted to have reaped a significant DD, the consumption needs of children (0-24 years) as a percentage of total labour income was 35%. Similar analysis from the 2005 Nigeria NTA profiles indicate an estimate of 80% (Lee and Mason, 2011). Botswana, therefore, is presently saddled with a very large dependency burden from children and young people that is even greater than Nigeria in 2005 despite being at a much more advanced stage in its demographic transition. Comparing Botswana with the South Korean case, it is evident that South Korea in 2000 was better predisposed to maximise the DD than for Botswana today because of the former's much smaller young age dependency burden in 2000. It is, however, worth noting that a significant proportion of consumption in Botswana is in investments in education that if effective, should count favourably towards the development of future human capital.

Aggregate Lifecycle Deficit (LCD)

Figure 7.4 summarises Botswana's aggregate lifecycle deficit (LCD) in 2010 which is the difference between aggregate labour income and aggregate consumption that year. In monetary terms it shows that the aggregate deficit of about P 0.6 billion for those in their first year of life increases steadily with age and peaks at age 16 (P 1.4 billion) and then begins to decline as individuals exit the education system and enter the labour force, thereby resulting in falling aggregate consumption and rising labour income.

Yet it is not until age 33 that active people are able to produce a surplus (negative deficit). The surplus peaks at a maximum of P 0.2 billion at age 36. The total working-age surplus in Botswana is very small and is about only 9% of the total labour income. As a result, the sum of the deficit at young ages (P 23.8 billion) and at old ages (P 2.1 billion) far outweighs the surplus (P 2.5 billion), adding up to an overall lifecycle deficit of P 23.4 billion. The implication of the large lifecycle deficit in Botswana is that other avenues have to be found through which to finance consumption. These would include financing from asset income (including rents from natural resources), transfer inflows from the rest of the world, or dissaving (borrowing). Botswana's reliance on its mineral wealth is well known, yet these resources are finite. At the same time, there are limits on the availability of transfer inflows from the rest of the world, which could be in form of private inflows such as remittances, or public inflows in the form of foreign aid, or getting loans (borrowing) to finance consumption. This points to the need for further research to develop estimates of the NTA flows on the right-hand side of the NTA identity – net transfers and asset-based reallocations – to determine and clarify how the country is financing its lifecycle deficit.

Figure 7.4: The Aggregate Lifecycle Deficit (LCD), Botswana 2010 (Medium variant scenario)

Source: Study estimates

Comparing Botswana's consumption and labour income profiles with other countries

To facilitate comparison of labour income and consumption profiles for various countries within the NTA framework, all the age profiles are normalised by dividing them by the unweighted mean labour income for those in the age group 30 to 49 years, or peak labour income (United Nations, 2013). These comparisons are derived from the respective per capita profiles and are depicted in Figure 7.5. We include median profiles for lower middle-income and upper middle-income countries for which there are NTA estimates as well as the global median profile to examine

how Botswana fairs against these groups of countries. We also include profiles for South Africa and Mexico to assess how Botswana compares with these countries that have harnessed some level of the DD. Although there are significant differences between South Africa and Botswana, including significant gaps in population size and in economic sophistication and diversification, the two countries share some commonalities. For instance, both countries have transitioned to much lower levels of fertility compared to other countries in SSA; they both suffer from high levels of youth unemployment; and they both belong to the Southern Africa Customs Union. These characteristics are also shared with Swaziland, Lesotho and Namibia that are members of SACU. The second country included as a comparator is Mexico, which also exhibits quite high levels of consumption relative to peak labour income just like Botswana.

The standardised labour income profiles (Figure 7.5, upper panel) show that in general, all the profiles conform to the expected pattern over the life course. However, Botswana and South Africa stand out from the rest of the labour income profiles in the delay in the rise of their profiles. This feature reflects the high level of unemployment among the youth in both countries and the generally poorer labour market outcomes for young people. As a result of high levels of youth unemployment, young people in Botswana and South Africa begin to earn an income at a relatively later age than in the comparison group of countries in general. The pattern also suggests that the young people earning labour income in the two countries are generally earning lower amounts relative to their peak labour income.

As labour income diminishes at older ages, the pattern for labour income in Botswana converges with that of lower-middle-income countries and Mexico than the rest of the profiles. These three profiles give an indication of people earning labour income to the oldest ages. In comparison, South Africa's labour income pattern drops swiftly to very low levels in the sixties and is negligible relative to peak labour income by the mid-seventies. The South African profile is thus more similar to what one would expect in developed countries that have firm well-defined retirement ages and where most of employment is within the formal sector. These countries also usually have well-structured pension schemes and other old-age social security safety nets. As life expectancy increases and the proportion of the aged in Botswana increases significantly over the coming decades, similar safety-nets will be required for the population. Strategies to accommodate these future realities need to be put in place now.

Figure 7.5: Comparing Botswana's per capita labour income and consumption patterns with selected others
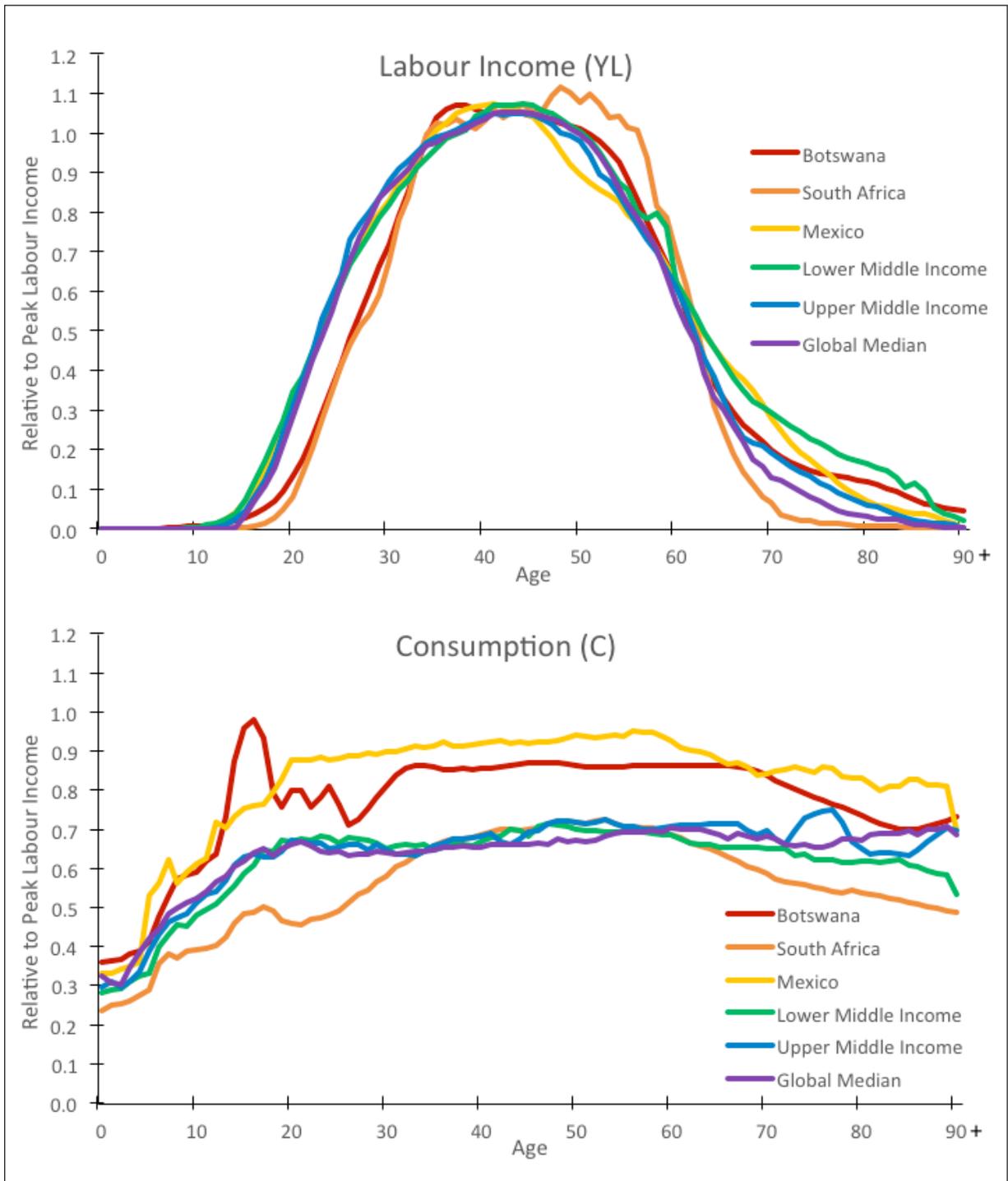
Source: NTA Network & study estimates

The comparison of the consumption profiles shows much greater variation across the countries than in the labour income profiles. Notably, the profiles for Botswana and Mexico exhibit much higher consumption levels relative to their peak labour income at virtually all ages from shortly after the age of school entry. Botswana, in particular, has very high consumption relative to its peak labour income in the teenage years, reaching as high as 98% relative to peak labour income at age 16. It is instructive to note that for much of the adult ages till around age 70, consumption in Botswana is around 80% of peak labour income; in Mexico, it is even higher. In comparison, the other profiles barely rise as high as 70% of peak labour income. In this regard, Botswana (like Mexico) is an outlier. The underlying consumption profiles show strong evidence of significant per capita public spending on public goods and services such as in health and education. While public spending on developing human capital is commendable, a keen cost-benefit analysis is required to ensure that the spending is effective and leading to the target outcomes that would support the country to maximise its DD and achieve its Vision 2036 development aspirations. As discussed in earlier sections, Botswana does not seem to be deriving full value for money for its investment in human capital development.

Figure 7.6: Comparing Botswana's per capita lifecycle deficit profile with selected others
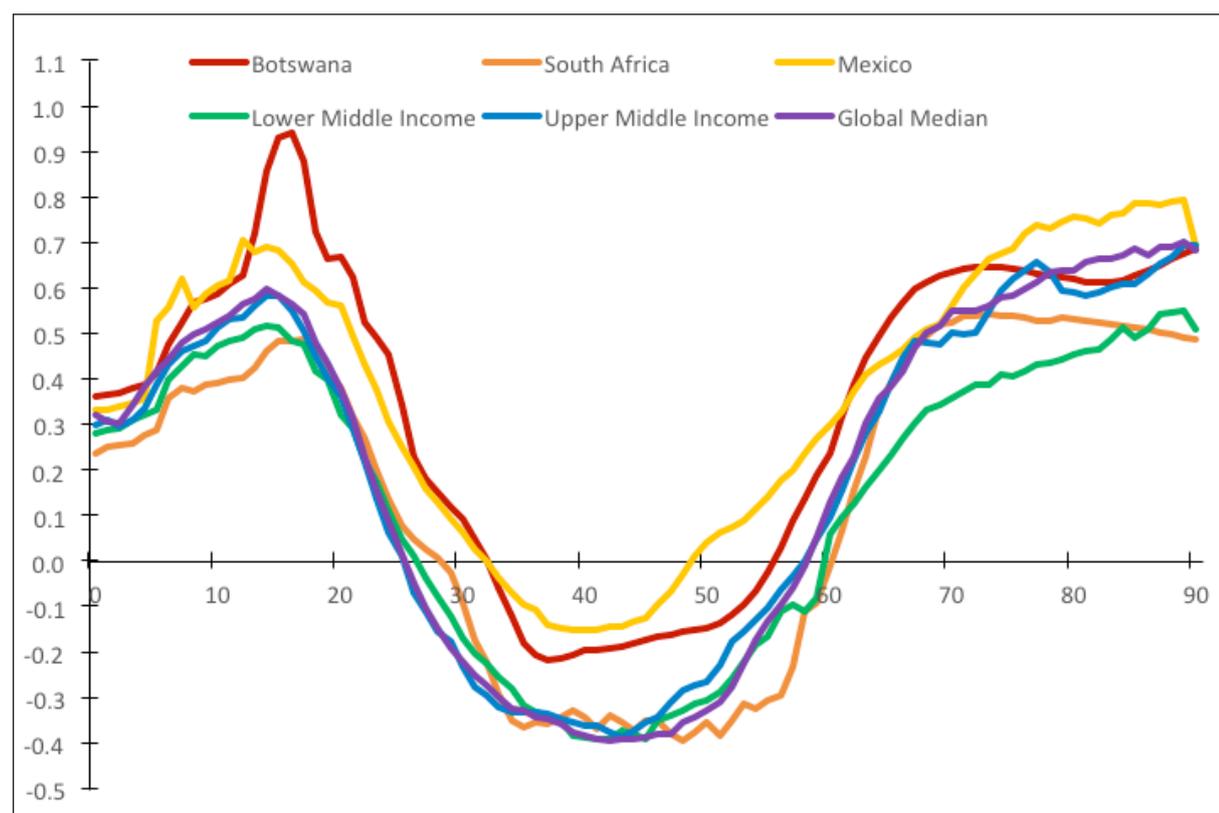
Source: NTA Network & study estimates

Furthermore, it is important for Botswana to understand how the large lifecycle deficit resulting from high levels of consumption relative to the labour income is financed and the sustainability of the current funding mechanisms. Figure 7.6 shows that among the comparison profiles, only Mexico has a smaller surplus relative to peak labour income and a shorter period in which the working-age surplus is generated. The surplus is generated in Botswana over a period of only 23

years between ages 33 and 55 compared to 33 years for both the global median profile (ages 26 to 58) and for lower middle-income countries (ages 27 to 59), and 32 years for both upper middle-income countries (ages 26 to 57) and for South Africa (ages 29 to 60). Mexico has the shortest surplus period of only 16 years (ages 33 to 48). In the case of Mexico, the lifecycle deficit is substantially financed by remittances from its large labour migrant population in the USA. Botswana does not have such a big migrant population and remittance base and it is most likely funding its deficit from other sources of financing including its finite natural resources.

7.4   Support ratio and the First Demographic Dividend

The aggregate profiles discussed in section 7.4 underlie the calculations for the support ratio, which determines the estimation of the first DD. As per the discussion in section 7.2, the first DD within the NTA framework is defined as the rate of change of the support ratio, which is the ratio of effective producers to effective consumers. Thus the first DD operates through growth in the support ratio: a one percentage point increase in the support ratio leads to a one percentage point increase in the standard of living in the population, all other things being equal (United Nations, 2013).

For the baseline simulation of the support ratio and the first DD, the UN medium fertility population projections were used and estimates of these two variables made for the period between 1990 and 2060. The simulations are anchored to the base year of the study in 2010 and the projections assume no change in the labour income and consumption profiles (expressed relative to peak labour income) over time.

Figure 7.7 overleaf shows that Botswana has experienced a sustained period of increase in the support ratio since 1990. This increase was initially relatively gradual, but accelerated significantly around 2006 and 2007. Thereafter, although the rate of change is relatively rapid, it decelerates continually over time. The support ratio increased from 0.452 in 1990, to 0.537 in 2010, and to 0.598 by 2020. The increase in the support ratio is attributable to the shift in the age structure with the proportion of those in the working-ages significantly increasing relative to dependent children as fertility declined. The sharp increase in the support ratio from the mid-2000s is likely linked to the introduction of the Masa HIV programme from 2002 whereby ART was rolled out nationally to manage HIV/AIDS and reduce AIDS-related mortality. Although starting out slowly, by 2005 over half the eligible population of 43,000 people had been reached by Masa and by 2013 about 87% of eligible people were covered. It is estimated that AIDS-related deaths dropped from a high of 21,000 in 2002 to 5,800 in 2013 (Glassman, 2016).

Figure 7.7: Past estimates and projected support ratios for Botswana (UN medium fertility scenario)
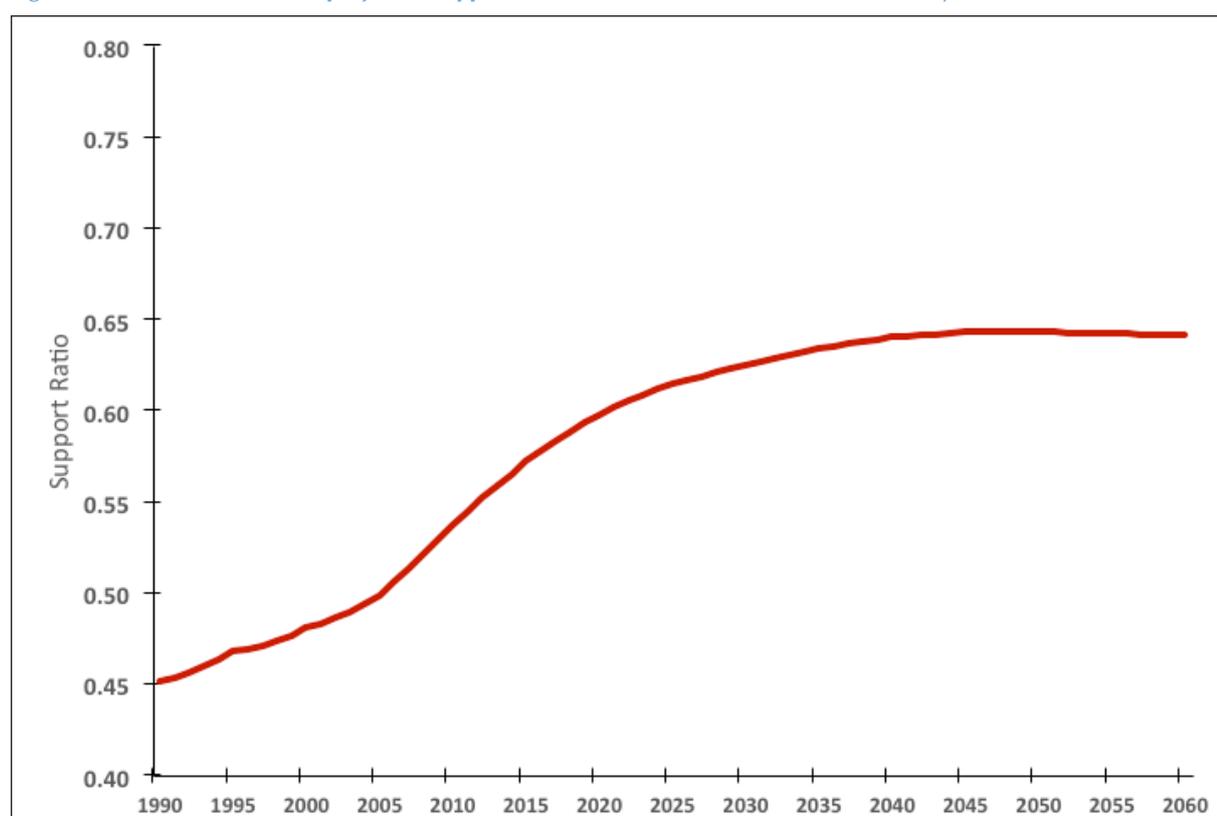
Source: Study estimates

As the demographic transition proceeds, the compositional shift in favour of the working-ages at some point slows down and eventually the population begins to shift into older age groups. By 2020 the increase in the ratio of effective producers to effective consumers in Botswana is expected to start slowing down considerably. The support ratio between 2020 and 2035 is expected to increase from 0.598 to 0.635, and it is only expected to rise another 0.009 points to its peak of 0.644 in 2050 where it declines marginally to 2060. The falling support ratio indicates that, under the medium fertility scenario, Botswana should expect growth of the number of consumers relative to the number of producers after 2050, as the weight of the population begins shifting out of the prime working-ages and into older age cohorts, where labour income is significantly lower.

Estimating the First Demographic Dividend

The window of opportunity for harnessing the first DD is understood to be in effect during the period when there is a positive support ratio. The first DD can be estimated as the rate of change of the support ratio (the ratio of effective producers to effective consumers): when the support ratio is rising, the DD is positive but when the support ratio is falling the DD is negative. Figure 7.8 shows projections of the first DD, calculated as the slope of the support ratio in Figure 7.7. As noted before, the 2010 labour income and consumption profiles are held constant and it is only the population that changes under the UN medium fertility scenario.

Figure 7.8: Estimating Botswana's Demographic Dividend (UN medium fertility scenario)
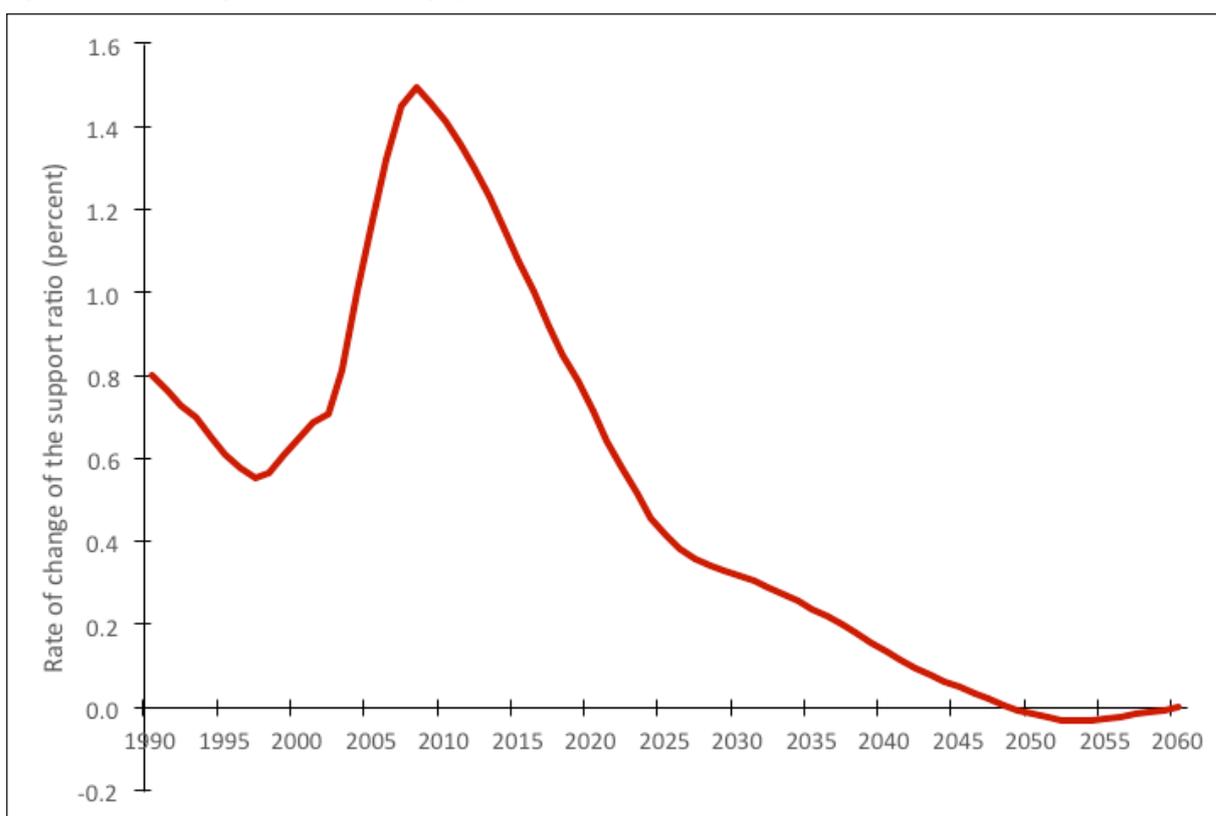
Source: Study estimates

The chart shows that using our analytical cut-off beginning point of 1990, Botswana was already experiencing a positive first DD, with demographic change resulting in consumption per consumer rising by around 0.8%. The magnitude of the first DD is estimated to have declined during the 1990s most probably due to the impact of HIV/AIDS. However, mirroring the rapid increase in the support ratio from the mid-2000s, the magnitude of the first DD increases from 1.2% in 2002 and peaks at 1.5% in 2008. From this point, the DD begins to decline. The first DD is projected to fall to 0.7% in 2020, 0.3% in 2030, and 0.1% in 2040. While the support ratio continues to rise, the first DD is positive; as the support ratio peaks, the dividend equals zero; and as it begins to decline, the dividend becomes negative, implying the demographic change characterised by increasing proportions of the dependent elderly is now slowing down economic growth rather than propelling it (United Nations, 2013). The effect of the first DD in Botswana after 2040 will decline to the point of being negligible and crossing into negative territory by around 2050.

Generally, Southern African countries are struggling with similar barriers to harnessing and maximising the demographic dividend. Three concurrent studies similar to the Botswana study were carried in Namibia, Swaziland and Zimbabwe. Figure 7.9 illustrates the projected first demographic dividend for Botswana compared to these three countries. It is worth reiterating that the estimated demographic dividend is the combination of the unique per capita profiles of labour income and consumption in each country, and each country's population projections.

What is immediately evident is that each of the four countries has experienced or will experience a peak in the magnitude of the demographic dividend at some point in the first two decades of the

21st century. These peaks are not necessarily the high point of the entire first demographic dividend period - Namibia's demographic dividend was slightly higher in the 1990s, for example - but they do represent local peaks. Botswana's demographic dividend peaks earliest and at the highest level; Zimbabwe's peaks slightly lower and slightly later; Swaziland's peaks for an extended period and is the last to begin to decline; and Namibia's peak is the lowest of the four countries. However, it is important to note that each country is at a different stage of the demographic dividend: Botswana is the most advanced on the demographic transition trajectory, while Zimbabwe is much closer to the beginning of the period of positive first demographic dividend.

All four countries also saw some kind of interruption in their period of first demographic dividend during the 1990s and/or the early 2000s. During this period, Botswana's demographic dividend fell by about one third, Namibia's fell from close to 0.9 percentage points to under 0.2 percentage points, while Zimbabwe's turned negative. Although there is no big decline for Swaziland during this time period, its demographic dividend was close to zero for much of the 1990s. Weak demographic dividends during this period are linked to the impact of HIV/Aids on the population, which particularly affected individuals in the prime working-age cohorts and eroded their contributions to aggregate labour income, thereby suppressing the demographic dividend.

Figure 7.9: : A comparison of the prospects for the first demographic dividend in Namibia, Swaziland, Botswana and Zimbabwe
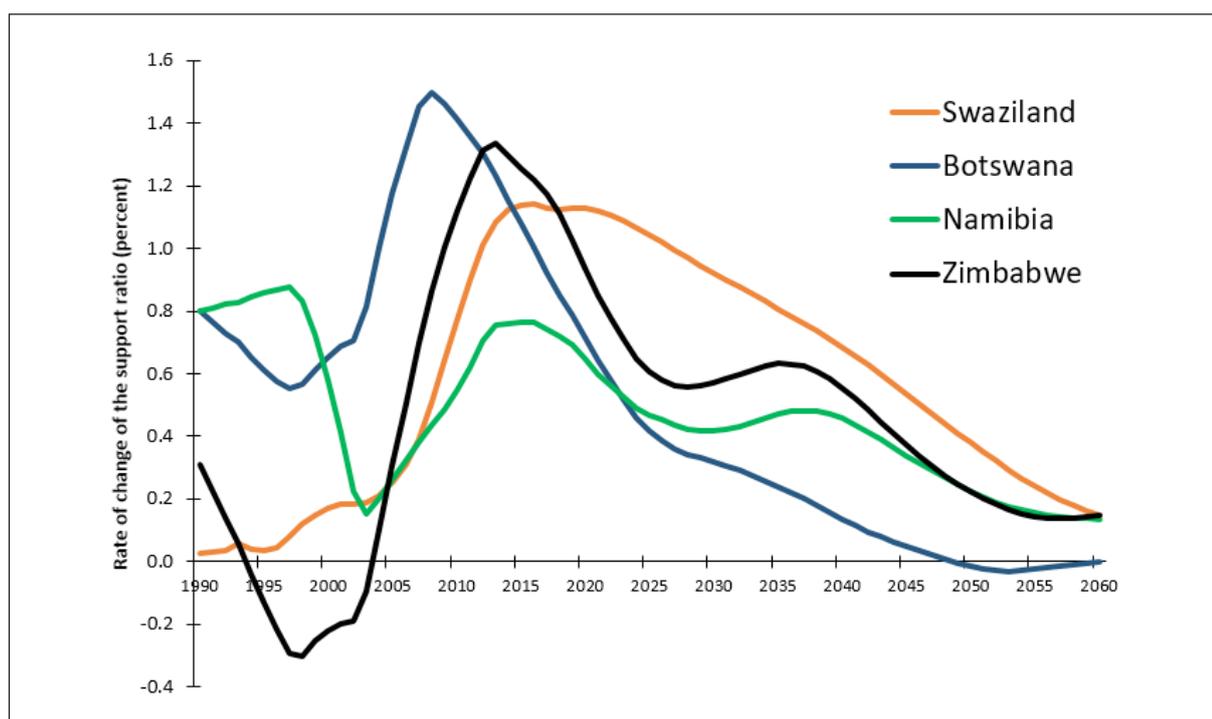
Source: Study estimates

What can Botswana do now to maximise its Demographic Dividend?

The key message from the analyses of Botswana's first DD using the NTA methodology is that the country is very advanced within its window to harness the first DD. The evidence presented above shows that the ratio of effective producers to effective consumers under the medium fertility scenario was already on the rise by 1990, accelerated after 2005, slowed down considerably and shows only moderate growth by 2020. The slowdown in the increase of effective producers relative to effective consumers means that, at present, although Botswana is currently in a phase where the impact of the DD on economic growth is still positive, this phase is already waning. Botswana, therefore, does not have the luxury of long-term planning to maximise its first DD, an opportunity which as shown by the estimates will end by 2050. This is in contrast to most countries in SSA that, because of their much higher levels of fertility, still have a long period during which to harness the first DD. However, it mirrors the situation to different degrees of several Southern African countries such as South Africa, Swaziland, Lesotho and Namibia that, like Botswana, have transitioned to lower levels of fertility compared to other countries in sub-Saharan Africa. Like them, all is not lost yet for Botswana and the country can still salvage and possibly maximise the DD is can earn by fast-tracking urgent policy and programme actions focused on enhancing the quality of human capital and reforming the economy to accelerate inclusive economic growth. In the rest of this section additional simulations are presented that show the possible results of policy actions that the country can adopt going forward to enhance the magnitude of the DD that Botswana can earn.

Demographic transition

Due to the relatively small size of the Botswana population, there have been concerns and suggestions within Botswana that the country should slow down the rate of fertility decline. The current level of fertility is already slightly below the total fertility rates of 3.0 that the current Population Policy targets to sustain reasonable population growth (NCPD, 2010). Despite the fact that overall fertility has declined appreciably in Botswana, the high level of teenage childbearing is noted as undesirably high and a major bottleneck for improving human capital and addressing gender inequalities in education and employment. Also, there are pockets in the general population of unplanned pregnancies resulting from unmet need for family planning, especially among underserved groups in rural areas, low-income households and women with low levels of education. Policy actions that would ensure that adolescent girls get comprehensive sexuality education and have access to contraception when they need it will play a key role in reducing teenage childbearing and overall fertility. Ongoing efforts to reduce unmet for family planning are also likely to result in reductions in fertility. Taking this into account, the following four simulations in which only assumptions on fertility (see appendix for details on the fertility scenarios) are varied, are presented:

    i. Constant/No change in fertility from the 2015 levels, which is close to the target value in the Population Policy.

    ii. The UN Medium fertility scenario from the UN World Population Prospects: the 2015 Revision, which has been used for all the analyses presented thus far.

iii. The UN Low fertility scenario from the UN World Population Prospects: the 2015 Revision, which assumes fertility to be 0.5 children per woman below the medium variant.

iv. The UN High fertility scenario from the UN World Population Prospects: the 2015 Revision, which assumes fertility to be 0.5 children per woman above the medium variant.

The results of the simulations (Figure 7.10) show that, if the fertility level prevailing in 2015 (that is close to the target in the Population Policy), is maintained, the period of positive first DD will be considerably shortened and as a result the magnitude of the DD earned will also be significantly smaller. Under this scenario, the first DD will turn negative by 2029. The situation is not much better if the high fertility scenario is to prevail with the DD turning negative in 2031 (although it does turn slightly positive again in the late 2040s).

Figure 7.10: : Simulations of the DD in Botswana under different fertility assumptions
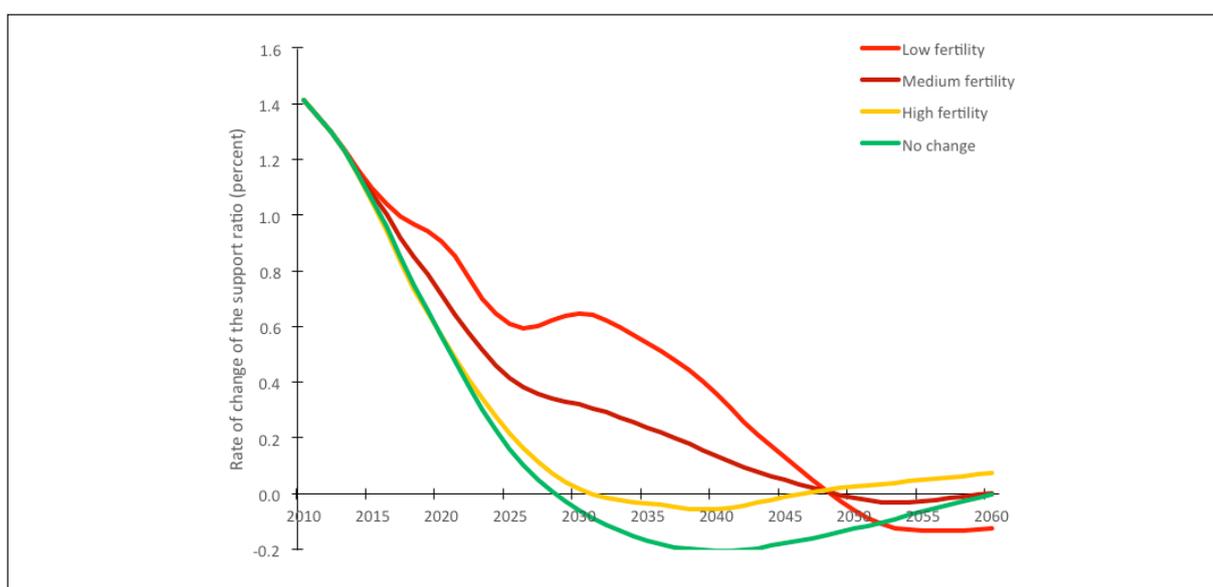
Source: Study estimates

However, the low fertility projection shows that it is still possible to boost the magnitude of the DD earned relative to the medium variant, although in both scenarios the dividend turns negative by 2049. Specifically, in 2030 for example, it is estimated that the DD can raise consumption per consumer by an estimated 0.6% under the low fertility scenario compared to 0.3% under the medium variant. In 2040, the low fertility scenario yields a DD of 0.3%, compared with 0.1% under the medium variant.

Overall, the estimated cumulative boost to living standards as a result of the first DD between 2010 and 2060 is highest under the low fertility scenario (24%), followed by the medium fertility scenario (19%), and the high fertility scenario (13%). It is lowest if fertility remains constant at 2015 levels at just 9%. These results suggest that there is a case to be made for supporting policy actions for voluntary family planning that target reducing unwanted fertility, especially among adolescents and under-served groups in order to maximise Botswana's DD.

Labour income (YL)

A consistent thread in this report has been highlighting the challenge of high youth unemployment rates and the importance of improving the stock of human capital through improvements in education and skills development for youth and children in Botswana. Data from the BCWIS 2009/10 clearly demonstrate the significant disadvantage in employment for youth and women. Disaggregating the unemployment data from the survey for instance revealed that at least 3 out of 10 (34%) Batswana in the 20-24 years age group, and 2 in 10 (22%) in the 25-29 age group were unemployed. In comparison, only 1 in 10 or 10% of Batswana in the age group 40-44 were unemployed. Further, a 41% unemployment rate for females versus 28% for males in the 20-24 age group showed how unemployment is highly skewed towards young women despite the fact that there is gender parity in education attainment among the young cohorts in Botswana.

These findings are further supported by the analyses presented earlier showing that like South Africa, the NTA labour income profile for Botswana generally begins to rise quite late in comparison to other countries – a sign of a combination of late entry into the labour market and possibly low quality jobs with low returns for young people. Clearly then, a key policy priority in terms of maximising the DD would be addressing the significant labour market challenges facing Botswana that have led to high unemployment rates and less than optimum levels of income.

The potential impact that such policies may have on the magnitude of the DD is simulated below, by allowing the labour income profile to shift over time while keeping the consumption profile constant. Specifically, the labour income profile is shifted from the original labour income profile to a target profile over a 20-year period between 2015 and 2035. The adjustment happens at a constant rate of change over the period.

The question, then, is what target profile should be used. For the purposes of these simulations, the global median labour income profile presented in Figure 7.5 is used as a target. As can be seen above, this requires an increase in per capita labour income relative to peak labour income amongst younger cohorts, and a reduction in per capita labour income relative to peak labour income amongst the oldest cohorts.

Two simulations are presented in Figure 7.11. both based on the UN medium fertility projections and, for each cohort, a constant rate of adjustment is assumed:

i.   The first simulation assumes that the shape of the Botswana labour income profile gradually changes over the 20-year period, so that by 2035 it is identical to the global median labour income profile.

ii.   The second simulation assumes that this shift occurs only for younger cohorts under the age of 35; in other words, by 2035, the portion of the labour income profile for cohorts aged 0 to 34 will look like the global median profile for those cohorts, while the portion of the profile for cohorts aged 35 years and above will be the original Botswana labour income profile for those cohorts.

Figure 7.11: Simulations of the DD in Botswana under different labour income assumptions
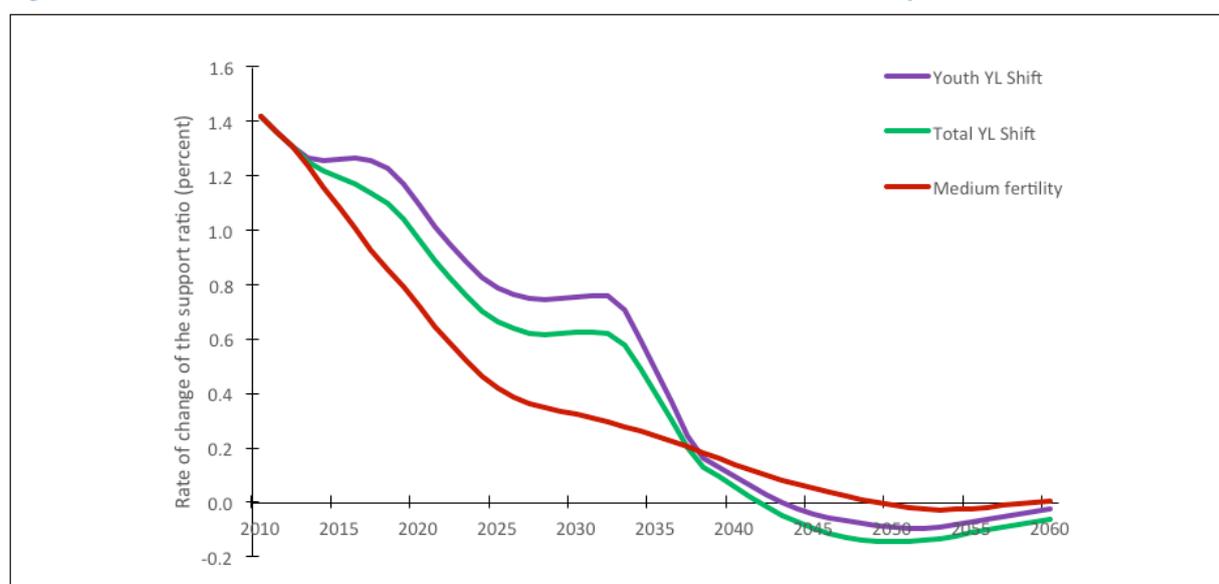
Source: Study estimates

Both simulations suggest that policies aimed at 'normalising' the labour income profile for Botswana will have beneficial effects in terms of the magnitude of the first DD. Allowing the entire labour income profile to shift between 2015 and 2035 sees the DD boosted by between 0.11 and 0.33 percentage points during those years, while restricting the adjustment to only those cohorts under 35 years results in a boost of between 0.18 and 0.46 percentage points. In both cases, however, the magnitude of the DD drops below the baseline (medium fertility) scenario in the late 2030s: the DD turn negative six or seven years earlier and they fall slightly lower than the baseline dividend. Nevertheless, the cumulative effect is significant. The baseline scenarios sees an aggregate impact on living standards of 11.7% between 2015 and 2035; in contrast, shifting the entire labour income profile yields an impact of 17.5%, while shifting just the youth portion of the profile yields an impact of 20.5%. Even by 2060, both labour income simulations have stronger effects on living standards than the baseline scenario.

Therefore, it can be concluded that addressing the high youth unemployment rate is fundamental to the achievement of a larger DD in Botswana. In addition to depressed productivity at present, high levels of unemployment have the implication that the levels of national savings will be low, jeopardising the realisation of the second DD. Strategies that will swiftly increase employment opportunities for the young population in the country and improve the quality of human capital in general, are critical if Botswana is to maximise the contribution of the DD to its sustainable growth goals. The other area to look into is the continued high public spending on health and education in Botswana. While this has ensured that the country has made positive strides on human capital development relative to most countries in SSA, the inevitable questions on the sustainability of such levels of public spending will abound. This is especially so if the country continues to be dependent on its finite natural resources to finance public spending. Chapter eight highlights key policy actions that Botswana can pursue in order to achieve these aims.

8

Policy Options for Maximising the Demographic Dividend in Botswana

Botswana's narrowing demographic dividend window means the time to act is now

Due to the appreciable decline in fertility that Botswana has experienced over the past two decades, the country is at an advanced stage of its demographic transition and its age structure has transformed from one that was dominated by dependent children to one that is dominated by working-age adults. Currently about two-thirds of the population is between the approximate working-ages of 15-64 years. Botswana's socio-economic advancement also compares favourably with and in some cases outpaces a number of the South East Asian countries that benefitted immensely from the demographic dividend. For example, Botswana's 2016 per capita GDP was USD 6,788 while the comparable incomes for Indonesia, Thailand and Malaysia were USD 3,336, USD 5,908, and USD 9,502, respectively.

The NTA results demonstrate that Botswana's window of opportunity for harnessing the first DD opened before 1990 when the support ratio (i.e. ratio of effective producers to effective consumers) became positive. After sharply declining between 1990 and 1997, possibly due to the negative impact of HIV and AIDS on morbidity and mortality, the rate of change of the support ratio started increasing again from 1997 and rapidly so efrom 2002 to 2008 when it peaked. Since then, the rate of change in the support ratio has slowed down considerably, but it will remain positive until around 2050 when it will become negative, marking the closure of the window of opportunity for harnessing the first DD for Botswana.

The results further show that the estimated cumulative boost in living standards emanating from the first DD between 1990 and 2060 will be 36%, assuming that the country will follow the UN projections medium fertility variant. The first DD has already cumulatively enhanced living standards between 1990 and 2015 by 24%, and it will boost living standards by about 12% from 2015 to 2060. The findings also show that despite being advanced in the demographic transition process, the current level of fertility still means that Botswana harbours a sizeable child dependency burden that limits availability of resources for savings and future investment. The consumption needs of children (0-24 years) in Botswana constitute an equivalent of 90% of the total labour income while in South Korea, which has a much lower birth rate of 1.3 children per woman, the needs make up 35% of labour income. This means that South Korea is better placed than Botswana to save and build more capital for future development endeavours.

These results mean that Botswana does not have the luxury of long-term planning to maximise the first DD. Indeed, the country should act with urgency and identify policy actions and investment decisions that would enable the country to take full advantage of the DD to achieve its Vision 2036 development aspirations. The big question ensuing from the foregoing picture, therefore, is "what can Botswana do to position itself to maximise what is left of the first DD"? In other words, are there aspects of Botswana's DD profile that can be amended through deliberate policy actions and investments to enhance the contribution that the DD can make to the improvement of Batswana's living standards?

A key feature of Botswana's NTA profile is that the country, just like Mexico, exhibits much higher levels of consumption relative to peak labour income at virtually all ages from the age of entry into school. The consumption reaches as high as 98% of the peak labour income at age 16, which

is linked to the age when children transition from junior to senior secondary school. For much of the adult ages till around age 70, consumption in Botswana is about 80% of peak labour income. This consumption level and pattern is well above the averages for all middle and upper-middle-income countries that have NTA profiles. Botswana also exhibits one of the shortest durations of the lifecycle surplus (23 years) when a working-age surplus is produced. In other words, Botswana **is living well beyond its means.**

The huge lifecycle deficit that results from this level of consumption relative to labour income is most probably financed by the government through asset transfers from its mining industry. Since the mineral resources are finite, the Government needs to take a hard look at the long-term sustainability of the ways in which it is subsidising the consumption of its citizens and assess whether the country is getting real value for money from the investment. The life-cycle deficit can be managed by optimising subsidies to reduce current consumption levels and/or increase productivity of the labour force. Where the excess consumption is driven by subsidies to enhance human capital development the government should ensure optimal long-term returns to the investment. Below we explore further policy options that Botswana can explore to manage the lifecycle deficit to accelerate the achievement of its long-term development aspirations.

8.1   Reforming the Botswana economy to create mass jobs for youth

The results show that the late entry into the labour force by Batswana youth is undermining the magnitude of the DD that the country is able to harness from the increase in the working-age population. On the average, Batswana youth remain dependent and only start to earn enough to meet their needs and generate a surplus at age 33 and the period in which they generate a surplus is also very short (23 years compared to 33 years for the global median profile). The delayed manifestation of a surplus reflects relatively high levels of unemployment and underemployment among youth compared to their counterparts in other middle and high-income countries. Addressing this problem would have far-reaching impact in increasing the DD that the country can earn. For instance, if Botswana boosts its job creation capacity for young people by accelerating transition from schools and colleges to employment to match the global profile for countries with NTA data, it would boost overall labour income and living standards by 20.5% between 2015 and 2035.

Botswana's steadily growing economy has struggled to create enough jobs to keep pace with the increasing number of working-age youth because the growth has primarily been driven by the extractive sector, which has low-job multiplier effects. Efforts to diversify the economy and develop a vibrant private sector has had limited success due to persisting shortfalls in economic infrastructure, skilled manpower, and relatively small purchasing power of the country's "small" population. A study by the World Bank indicates that if Botswana were to invest to increase average annual labour productivity by 0.5% annually, it could achieve a 14% higher income per capita by 2050 than with the current policy scenario. This study also modelled that Botswana will need to create 340,000 jobs just to hold current unemployment rates steady until 2050, while if the country were to optimise it demographic dividend it would need to create up to one million job in this period (Bruni et. al, 2016).

Botswana's long-term and medium-term development strategies, as well as the SDG framework, already highlight these challenges and what is needed is commitment to address the knowledge gap. The following policy options would help reform and reorient the economy towards job creation for the youth:

I.   Diversify economic production to minimise the country's over-dependence on the mining sector and invest in sectors with high job-multiplier effects such as manufacturing and the service sector. Taking advantage of the growing regional economic integration within SACU and SADC would expand markets and overcome the limitation of a small home market.

II. Modernise the agriculture sector to enhance its capacity to create attractive livelihood opportunities for youth across the value chain. Interventions could include developing infrastructure for irrigation, communication and transportation of commodities, developing agribusiness and integrating ICT use in agriculture, and relaxing land ownership restrictions for foreigners to attract more commercial farmers. These efforts should build on lessons from the ISPAAD programme that was created in 2008 to address challenges contributing to low-productivity of arable farmers.

III. Improve the ease of doing business in Botswana to attract investors and promote growth of the private sector as a key driver of job creation for young people. Interventions could include offering incentives to companies that excel in creating jobs for youth, supporting set-up and growth of micro and small enterprises and facilitate their graduation into medium and large size enterprises.

IV. Promote financial inclusion and access to credit facilities for young people and women, with particular focus on empowering young people to expand the service sector through ICT and related innovations.

V.   Address the infrastructure limitations that hamper economic productivity including ensuring consistent and sustainable electricity generation and distribution, transportation to improve the supply and distribution of goods and services across the country and beyond its borders to SACU and COMESA countries.

8.2   Optimising value for money to create a skilled and globally competitive workforce

Relative to other African countries, Botswana has been praised for prudent management of its mineral resources and for investing substantial amounts of the returns from the sector in its people. Botswana is one of the few African countries where education is free or heavily subsidised at primary, secondary and tertiary levels. Over the years, the government has developed progressive policies and allocated ample financial resources to address inequities in access to education and to improve the quality and relevance of education. Consequently, the country has achieved near universal enrolment in primary school and increased enrolment in secondary and tertiary education levels.

However, there are questions on whether the investments are giving full value for money in building quality human capital and on the long-term sustainability of such levels of public spending derived from finite natural resources. Indeed, it is a major concern that when compared to international benchmarks and most of its peer middle-income countries Botswana lags behind on measurements of quality of education. For examples, Botswana's standing in Science, Mathematics and Reading achievement is below average (International Association for the Evaluation of Educational Achievement, 2011). At the core of the country's pervasive education quality challenge is the fact that the school curriculum is still knowledge oriented as opposed to being competency-based and focused on developing transferable (non-cognitive) skills such as critical thinking, leadership, communication and reliability, and entrepreneurship.

There is high school drop-out demonstrated by the fact that despite having automatic progression from primary to secondary school, the net enrolment ratio at junior secondary school is only 53%, and this falls further to 30% for senior secondary school. Gross enrolment at tertiary level is 19%, which compares poorly with countries such as South Korea (95%), Thailand (51%) and Mauritius (39%) (World Bank, 2017). Most of the youth who drop out at various stages of the education pipeline do not have opportunities to attend TVET institutions to enhance their skills due to limited infrastructure and negative attitudes about the training. There are also sizeable inequalities in access to education and training that leave behind children from poor families, those in rural and hard to reach areas, and those with special needs.

As a result of these challenges, graduates and drop-outs from the school system lack critical practical skills that they need to be successful and productive in the labour market, and employers often have to use considerable resources to address the skills mismatch. The recent education sector performance assessment's conclusion that the quality and performance of the education sector was insufficient in meeting the needs of a growing and diversifying the economy and that the cost effectiveness of the sector was comparatively weak calls for major changes in the way the country is going about developing its human capital. The major challenges that need to be addressed for the country to enhance its human capital through quality education and the learning of relevant skills are exhaustively outlined in the ETSSP 2015-2020.

To maximise the DD and enhance the productivity of its youth, Botswana should align its development targets in the education sector with the SDG 4: Ensure inclusive and equitable quality education and promote lifelong opportunities for all. The following are priority policy action areas for the country to optimise the value of its relatively heavy investment in education:

I. Set up special high-level commission on addressing the declining education quality to investigate and ensure decisive action to overcome education quality bottlenecks.

II. Review curriculum for all stages of the education pipeline and enact required reforms to decisively shift the education system from the current knowledge-based orientation to the competency-based one. This should be accompanied by massive investments to retrain all teachers in learner-centred pedagogies, aligning curriculum in teacher training institutions

with the competency-based system, providing required learning materials, and improving the working conditions and remuneration of teachers to attract and retain good teachers.

III. Expand the number of teaching centres and qualified teachers to ensure universal Early Childhood Education, which is vital for child development.

IV. Address the underlying causes of declining performance and school drop-out between primary, junior primary, and senior secondary school with particular focus on optimising the infrastructural capacity of senior secondary schools to take in more students.

V. Increase intake and quality of tertiary education institutions through public-private partnerships, periodically introducing cost-sharing mechanisms to reduce the level of public spending on education.

VI. Partner with the private sector in curricula development and reviews to address the skill mismatch between education training and the labour market needs.

VII. Deploy massive rebranding and quality improvement of TVET to make it a rewarding skill development mechanism for securing sustainable livelihoods for the thousands of young people who do not make it to tertiary education. TVET should be designed and implemented in close partnership with the private sector to ensure that it is responsive to the labour market needs and ultimately enhance the employability and capacity for self-employment of its graduates. Aspects of TVET should also be main-streamed in primary and secondary school curriculum to ensure that practical work-related skills are imparted throughout the school years.

VIII. Enhance investments in research to enhance innovation and thought leadership in tertiary institutions, working in close partnership with the private sector (e.g. the Botswana Innovation Hub).

IX. Attract more students (especially girls) and teachers to science, technology, engineering, and mathematics (STEM) trajectories including through mentorship programmes to enhance innovation and the development of the manufacturing sector.

X. Enhance performance monitoring and management systems in the education sector to ensure that decision-making is routinely informed by robust data and evidence. Critically, there is urgent need to understand the high levels of school drop-out to devise corrective measures and to provide an enabling environment for education reform experts and other change agents to test and ultimately scale up various innovations for addressing Botswana's pervasive education quality challenges.

8.3 Reinforcing investments in health and family planning to prevent unplanned pregnancies and ensure a healthy labour force

The magnitude of the first DD that Botswana will ultimately earn will be lower than what countries that experienced more rapid fertility decline like South Korea earned. The analyses show that if Botswana's birth rate remains constant at the current level of 3 births per woman until 2060 the cumulative boost in living standards emanating from the DD will be 9%. However, if we go by the medium fertility variant that assumes that birth rates will decline to about 2.0 births per woman by 2050, the cumulative contribution of the DD to living standards will be 19%.

One of the big debates in Botswana is on whether further decline in fertility is in the best interests of the country, given that Botswana has a relatively small population and market. In deliberating on this issue, it is worth noting that Botswana's population will continue growing for some time irrespective of what fertility pattern the country follows. Under the medium fertility scenario noted above, the projected population will be 2.8 million by 2030 and 3.42 million by 2050. Under the constant fertility, however, Botswana is projected to have about 2.92 million people by 2030 and 3.98 million people by 2050.

It is important to bear in mind the internationally accepted principle of the 1994 International Conference on Population and Development held in Cairo, that it is the right of every woman and her partner to voluntarily and freely decide on how many children they would like to have and when they should have them. The duty of governments should be to support the couples fulfil their reproductive intentions and needs. This principle has guided Botswana's reproductive health policy and programmes, which have facilitated voluntary fertility decline and the DD that the country is already partly enjoying. Maintaining this principle will mean that the government will sustain its relatively successful family planning programme, address unmet need of family planning, and enable couples prevent unplanned pregnancies, with particular focus on the adolescents and youth whose futures get curtailed by teenage pregnancies. This will ensure that Botswana's demographic transition will continue and the country is very likely to secure the first DD estimated in this study.

Beyond sustaining investments in family planning, the country should also optimise its investments in the health sector to ensure it has a healthy workforce. High disease burden reduces productivity and increases the costs of doing business through increased costs of healthcare and loss of productive hours. The Botswana National Health Policy (Ministry of Health, 2012) recognises that Botswana has to grapple with both communicable diseases and non-communicable ailments stemming from lifestyle changes. Other public health challenges facing the Botswana workforce are gender-based violence, substance abuse and human resource and infrastructural inadequacies in the health system. These challenges are well articulated in Vision 2036, NDP11 and the National Health Policy, and they are also in line with SDG 3 (*Ensure healthy lives and promote well-being at all ages*). What is critical, therefore, is to mobilise the financial and technical resources to implement the policy options as those listed overleaf.

I. Address all barriers of access to and use of family planning, paying particular attention to preventing unplanned pregnancies among young women and other underserved populations.

II. Reinforce ongoing efforts to control and eliminate communicable diseases with emphasis on halting transmission of HIV and ensuring universal access to AIDS treatment.

III. Fully operationalise and implement the National Health Policy with particular focus on promotion of healthy nutrition and curbing malnutrition in childhood, strengthen public health at community level, health promotion to sensitise citizens on emerging non-communicable and lifestyle diseases, and enhance the capacity of the health system to manage the non-communicable diseases such as diabetes, hypertension, and cancer.

IV. Strengthen public campaigns to prevent gender-based violence and substance abuse, empowering women to seek justice when they fall victim of gender-based violence, and enhance the capacity of the legal and security system to enforce laws and bring perpetrators to account.

V. Improve the health infrastructure and systems, including hiring more trained health workers, providing incentives for training and retention of health workers, and improving health supplies chain management. This will help address inequities in health service provision that disadvantage poor and rural communities.

VI. Reinforce public-private partnership in the provision of healthcare services to reduce the high levels of public health expenditure, which accounts for more than two-thirds of the total health expenditure.

8.4 Strengthening enabling factors for optimising the Demographic Dividend

Governance, efficiency and accountability

Good governance, efficiency, and accountability create an enabling economic and political environment that are key to attract foreign and local investment and lead to efficient, effective, and equitable use of public resources and delivery of public services. Governance and accountability are cross-cutting factors that affect the capacity of a country to make progress in the other pillars of the DD. This is in line with SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Botswana can build on its relatively good past record on governance and accountability to enhance performance management and close the policy-implementation gap. The following are policy options that would help strengthen governance and accountability in Botswana.

I.   Entrench patriotism and ownership of Vision 2036 to ensure shared responsibility in achieving the development vision by all government sectors at all levels of governance, the private sector, other non-government entities, and the citizenry.

II. Strengthen performance management systems to entrench a performance-based work culture and ensure that public policies swiftly move to the action phase and corrective measures taken in a timely manner when challenges arise. Vision 2036 identifies weak performance management, monitoring and evaluation mechanisms among the key bottlenecks to development in Botswana.

III. Review and strengthen the Performance Improvement Coordinators programme, and explore set-up of a strong Delivery Unit with strong convening power and accountability mandate to entrench performance-based work culture in strategic government programmes.

IV. Strengthen the rule of law and anti-corruption systems in order to ensure transparent accountability in use of public resources, which is key to optimise investor confidence. Botswana should reverse the recent declining trend in the WGI governance indicators on government effectiveness and the control of corruption.

V.   Enhance institutional building and independence to ensure that the long-term national development plans are independent and sustained even when political leadership changes.

Gender equity and empowerment of women

Batswana women have made commendable gains over the years in important socio-economic spheres through sustained investments in education and health that puts them at an enviable position relative to their compatriots in other countries in SSA. For example, investments the country has made in improving access to family planning have helped women reduce the burden of taking care of big families and freed up time for them to engage more in the labour market. Nevertheless, there is still ample room for improvement and to ensure that the gains are consolidated and expanded, especially to lift the well-being of the most vulnerable and underserved women. In general women are less likely than men to be in employed in the salaried jobs, to be in management positions, to pursue the STEM courses, and far too few women are involved in political leadership. The high levels of sexual and gender-based violence and teenage childbearing continue to place women in disadvantaged positions.

A particularly effective pathway to women's empowerment around the world has been through promotion of financial inclusion of poor women through micro-credit programmes. Temporal use of quotas has also been successfully used to enhance participation of women in political leadership in countries like Rwanda. The bottom line is that a country cannot achieve its full socio-economic transformation potential if women are not fully engaged in all aspects of the development process.

Environmental conservation for sustainable development

Botswana heavily relies on its natural endowment for economic prosperity and the well-being of its people. Environmental protection and management is a key Vision 2036 development priority and in line with Botswana's commitment to the global 2030 SDG framework. As many countries in the region, Botswana is already bearing the adverse effects of climate change characterised by frequent and long drought periods and increasing temperatures. Effective management of the country's water and other natural resources is particularly key to enhance the productivity of the agricultural sector. The country should reinforce current conservation and environmental management strategies to ensure that its drive towards achievement of the Vision 2030 socio-economic transformation aspirations is built on solid sustainable development principles.

Strengthening data and evidence for performance monitoring and learning

In order for Botswana to effectively monitor its performance towards maximisation of the first and second demographic dividends, it should reinforce its investments and capacity in generation and use of data and evidence in development planning and execution. Reliable evidence is vital in conducting structured policy prioritisation analysis to guide selection and design of cost-effective game-changer interventions. A major challenge faced in executing this study was finding up-to-date national survey data which could be used for comparative cross-national analysis. The government should address these data gaps to ensure steady availability of contextualised and internationally comparable data for effective planning and execution of programmes.

The government of Botswana and its development partners can build on the NTA methodology used in this study to set up an ongoing NTA centre that will update NTA profiles over time. Such profiles will help assess how well the country is doing in addressing its lifecycle deficit and related Vision 2036 goals. Another interesting angle that can be pursued in the NTA is the Counting Women's work module that more accurately estimates the contribution of women to the economy, taking account of the non-paid family work that many women do as detailed at www. countingwomenswork.org.

8.5   Planning for the Second Demographic Dividend

The second DD typically kicks in as the first one is waning. Once the first DD is realised through exploitation of the productive capacity of the working-age youth bulge, it paves the way for the second DD whose socio-economic transformational effects can be more permanent. Indeed, depressed productivity of the labour force through high levels of unemployment or underemployment among youth can limit the levels of national savings and jeopardise the realisation of the second DD. Improved investments in human capital that results from reduced child dependency burden is likely to accrue significant benefits in increased productivity of the labour force in future, which would lead to further increases in savings, capital deepening and enhanced magnitude of the second DD. To promote savings, proactive government policies and robust financial markets need to be in place to encourage asset accumulation and savings for retirement among the working-age population.

Given that Botswana's window of opportunity for harnessing the first DD is already open and the magnitude of the DD is in the diminishing-returns phase, the country needs to urgently start planning on how it can maximise the second DD. If the status quo continues, whereby the majority of working-age people are not employed in the formal labour market where they make ample income to save for the future and possibly earn pensions, and most of the finite natural resources are used to finance the unsustainable lifecycle deficit, most of the burden of taking care of the looming old age bulge will also fall on the shoulders of the government at a time when the finite resources may not be there or be as valuable.

9 | Conclusion

Botswana's long-term vision to achieve its socio-economic development goals, Vision 2036, envisions a modern high-income country where the benefits of socio-economic development are shared by all Batswana. Although significant gains have been realised towards achieving these goals over the last 20 years when Vision 2016 was in operation, the progress needs to be consolidated and efforts enhanced to achieve the new targets.

Vision 2036 is operational at a critical point in Botswana's demographic transition and socio-economic development trajectory. Over the last few decades, the country's age-structure has transformed from one with more child dependents to one with significantly more people in the working-ages. More than 6 out of every 10 Batswana are currently between the ages of 15 and 64 years. The country's window of opportunity for harnessing the demographic dividend opened before 1990, while the magnitude of the first demographic dividend peaked in 2008 and it is now in the diminishing returns phase until around 2050 when the window of opportunity will close. This study shows that the cumulative boost in living standards emanating from the first demographic dividend between 1990 and 2060 will be 36%. Of this, 24% has already been accumulated between 1990 and 2015 while the remaining boost of 12% will accrue between 2015 and 2060, assuming the country follows the Medium fertility variant of the UN population projections.

Two other critical features of Botswana NTA profile is that young people remain dependent till age 32 when they start producing more than they consume and that the country has a uniquely high level of consumption that has produced a huge lifecycle deficit (between consumption and labour income). The deficit is financed by the government from the proceeds of the country's finite mineral resources. In short, **Botswana is not living within its means**, which is not sustainable in the long-term.

Moving forward, the big question is what can Botswana do to position itself to maximise what is left of its first demographic dividend and use this opportunity to hasten the achievement of the Vision 2036 development aspirations? There are primarily four policy areas where the country can intervene to maximise the demographic dividend:

1. **Prioritise economic reforms and investments to urgently accelerate creation of jobs and other well-paying livelihoods for the country's youth, who continue to be dependent up to age 32.** The first component of this priority entails focusing on diversifying the economy to expand sectors with high job multiplier effects, reforming the agricultural sector to be more attractive to youth, providing incentives to companies that consciously create livelihood opportunities for youth, and empowering youth with resources and technical capacities to start and grow businesses. The second component, which is more immediate, entails enhancing the quality of and rebranding TVET as an attractive route for re-skilling the thousands of out-of-school youth who did not make it to tertiary colleges. This will enhance the employability of youth and their prospects to engage in well-paying and sustainable livelihoods, including owning businesses. This study shows that boosting Botswana's job creation capacity for young people to follow the global median profile for other countries with NTA data would boost living standards of the population by about 20.5% between 2015 and 2035.

2. **Optimising Value for money to create a globally competitive skilled workforce:** Botswana is already spending considerable resources on education; however, it is not getting value for money for its investment. This anomaly is illustrated by under-performance of Botswana students on quality of learning measures against global benchmarks and when compared with fellow middle-income countries as well as persisting skills mismatch between the needs of the labour market and the skills that the education system produces. To address this, the country should immediately form a high-level commission on addressing the declining education quality to lead the country's determination to examine and decisively address what is ailing its relatively well-funded education sector. The reform agenda should include revamping the whole education pipeline (including early childhood education, primary school, secondary school, and tertiary colleges) to address all inequities in access and quality bottlenecks, and facilitate the strategic shift from the current knowledge-based to the competency-based curriculum that is focused on developing practical technical and soft skills that are critical for success in the globally competitive labour market. At the centre of these reforms is ensuring that all teachers are well motivated and trained in learner centred pedagogies, and that the learning environment has the required learning materials to facilitate skills development.

3. **Reinforcing investments in health and family planning to prevent unplanned pregnancies and ensure a healthy labour force:** Botswana should reinforce investment in public health to consolidate progress it has made in improving child and maternal health outcomes and in improving the health and overall well-being of its workforce through various interventions, including the successful HIV and AIDS treatment programme. The country should reinforce health promotion to prevent lifestyles that predispose workers to non-communicable diseases and enhance the capacity of the health system to manage these and other emerging health challenges. The family planning programme should also be reinforced to prevent unplanned pregnancies, particularly among adolescent girls and youth. The evidence from this study shows what if Botswana's birth rate remains at the current level of 3 births until 2060 the cumulative boost in living standards emanating from the demographic dividend will be 9%. However, if the country sustains or reinforces its family planning programme to prevent unplanned pregnancies, the total fertility rate will most probably decline to about 2.0 births per woman by 2050, and the demographic dividend will provide a cumulative boost to living standards by 19%.

4. **Strengthening enabling factors for optimising the demographic dividend:** In order to lay the foundation for Botswana to be successful in the reforms noted above, the country needs to have strong public institutions that will enforce the rule of law and systems that will ensure accountability in service delivery and use of public resources. In line with Vision 2036 priorities, the country should reinforce its performance management system to entrench a culture of performance-based work in both the public and private sectors. This discipline will also ensure efficient and effective delivery of public services, help bridge the policy to action gaps, and make the country attractive for investors. Ensuring gender equity and empowerment of women to enable them fully participate in the labour market will greatly boost the country's chances of maximising its first demographic dividend but even more critically its

second demographic dividend. In order to monitor its progress and ensure accountability in its demographic dividend journey, Botswana needs to reinforce its investments in data and evidence generation and use systems and capacities to ensure well-informed decision-making and planning. Prioritising environmental preservation is also a central development priority and in line with the SDG agenda for the country.

This study shows that Botswana does not have the luxury of long-term planning to maximise the first demographic dividend. Therefore, the government and all development actors should act with urgency and implement game-changer interventions that will enable the country to take full advantage of the demographic dividend to achieve its long-term development aspirations (articulated in Vision 2036) to become a fully modernised high-income country.

References

Adam, S., & Mengistu, B. (2008). Privatization, governance and economic development in developing countries. *Journal of Developing Societies*, 24(4), 415-38.

AfDB, OECD & UNDP, (2014), Botswana 2015, African Economic Outlook, Gaborone.

Agénor, P. R., Canuto, O., & Jelenic, M. (2012). Avoiding middle-income growth traps. World Bank-Economic Premise, (98), 1-7.

Basu, A. M. (2002). Why does education lead to lower fertility? A critical review of some of the possibilities. *World Development, 30*(10), 1779-1790.

BCA Consult. (2012). *Consultancy for the poverty and social impact analysis of the integrated support programme for arable agriculture development (ISPAAD).* For the UNDP, Republic of Botswana.

Bloom, D., Humair, S., Rosenberg, L., Sevilla, J. P., y Trussel, J. (2014). Capturing a Demographic Dividend: source, magnitude and realization. En A. Soucat y N. Mthuli (Eds.), One Billion People, one Billion Opportunities. Washington, D.C.: African Development Bank, Communications Development Incorporated.

Bloom, D.E. & Graham, B. (2003). Longevity and life-cycle savings. *Scandinavian Journal of Economics*, 105 (3): 319-338.

Bloom D.E. and Canning D. (2001). Cumulative causality, economic growth, and the demographic transition. In Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World, N. Birdsall, A. C. Kelley, and S. W. Sinding, eds. Oxford: Oxford University Press, pp. 165-200.

Bloom, D. E., & Williamson, J. G. (1998). Demographic transitions and economic miracles in emerging Asia. The World Bank Economic Review, 12(3), 419-455.

Bloom, D. E., & Canning, D. (2008). Population health and economic growth. *The World Bank, Washington, DC.*

Bloom, D.E., Canning, D., and Malaney, P. (2000) "Demographic Change and Economic Growth in Asia." *Population and Development Review 26* (supplement): 257-90.

Bongaarts, J. (2009). *Population Growth and Policy Options in sub- Saharan Africa - presentation at special session organised by the William and Flora Hewlett Foundation during the Population Association of America Meetings.* Retrieved from

Botswana Human Resource Development Council [HRDC]. (2016). *The Tertiary Education Statistics 2016.* Gaborone, Botswana: HRDC

Botswana Institute for Development Policy Analysis. (2015). *Social Upliftment Theme Diagnostic Study.* Gaberone, Botswana: National Strategy Office.

Bruce J., & E. Chong. (2005). *The Diverse Universe of Adolescents, and the Girls and Boys Left Behind: A Note on Research, Program, and Policy Priorities," background paper to the UN Millennium Project report Public Choices, Private Decisions: Sexual and Reproductive Health and the Millennium Development Goals.*

Bruni, L., Rigolini, J. & Troiano, S. (2016). Forever Young? Botswana Country Brief. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0

Canning, D., Raja, S., and Yazbeck, A. S., (eds). (2015). Africa's Demographic Transition: Dividend or Disaster? *Africa Development Forum Series.* Washington D.C.: World Bank.

Central Statistics Office, (2008), 2005/06 Labour Force Report, Gaborone

EY. (2017). EY's Attractiveness Program Africa – *Connectivity Redefined.* May, 2017.

Gender Links and Women Affairs Department, Ministry of Labour and Home Affairs. (2012). The Gender-Based Violence Indicators Study, 2012.

Government of Botswana. (2016). Vision 2036 – *Achieving Prosperity for All.* Gaborone, Botswana.

Government of Botswana and United Nations. (2010). Botswana Millennium Development Goals Status Report 2010. Ministry of Finance and Development Planning and the United Nations in Botswana Office of the Resident Coordinator, Gaborone.

Hildebrand, M., Kanaley, T., & Roberts, B. (2013). Sustainable and Inclusive Urbanisation in Asia Pacific. UNDP Strategy Paper. http://www.undp.org/content/dam/rbap/docs/Research%20&%20Publications/poverty/RBAP-PR- 2013-Strategy-Paper-Urbanisation.pdf

International Association for the Evaluation of Educational Achievement. (2011) Trends in International Mathematics and Science Study (TIMSS), 2011. Boston, USA: TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College.

Krüger, F. (1998). Taking advantage of rural assets as a coping strategy for the urban poor: The case of ruralurban interrelations in Botswana. *Environment and Urbanisation*, 10(1), 119-134.

Lee, R., Mason, A., & Miller, T. (2003). Saving, Wealth and Transition from Transfers to Individual Responsibility: The cases of Taiwan and the United States. *The Scandinavian Journal of Economics,* 105. 339-357.

Letamo, Gobopamang and Kannan Navaneetham. (2015). Levels, Trends and Reasons for Unmet Need for Family Planning Among Women in Botswana: a Cross-sectional Study.

Letamo, G., & Letamo, H. (2001). The role of proximate determinants in fertility transition: A comparative study of Botswana, Zambia and Zimbabwe. SA journal of demography, 8(1), 2001-2002.

Letamo, G. (1996). Contributions of the proximate determinants to fertility change in Botswana. Journal of biosocial science, 28(03), 325-338.

Levine, R., C. Lloyd, M. Greene, & C. Grown. (2008). *Girls count: a global investment & action agenda. Washington, DC: Center for Global Development.*

Madise, N. J., & Letamo, G. (2017). Complex association between rural/urban residence, household wealth and women's overweight: evidence from 30 cross-sectional national household surveys in Africa. *BMC obesity, 4*(1), 5.

Mason, A. and Lee, R. (2011), Population aging and the generational economy: Key findings, *in* 'Population Aging and the Generational Economy', Edward Elgar Publishing, Inc. and the International Development Research Centre, Cheltenham, UK, and Ottawa, Canada, pp. 3–31.

Mason, A., & Lee, R. (2007). Transfers, capital, and consumption over the demographic transition. *Population aging, intergenerational transfers and the macroeconomy*, 128-162.

Ministry of Education and Skills Development. (2015). National Education for All (EFA 2015) Review: Botswana country report. Gaborone, Botswana.

Ministry of Education and Skills Development. (2013). *Inclusive education policy and implementation plan.* Gaborone, Botswana.

Ministry of Finance and Development Planning. (2013). *Mid-Term Review of NDP 10.* Gaberone, Botswana.

Ministry of Finance and Development Planning and United Nations. (2010) Botswana Millennium Development Goals Status Report 2010.

Ministry of Health and Wellness. (2016). Botswana 2013/2014 Health Accounts Report. Gaborone, Botswana.

Ministry of Health. (2012). *National Health Policy: Towards a Healthier Botswana, 2011* Gaberone, Botswana.

Ministry of Health. (2012). Botswana National Health Accounts for Financial Years 2007/08, 2008/09 and 2009/10. Gaborone, Botswana.

Montenegro, C. E., & Patrinos, H. A. (2014). Comparable estimates of returns to schooling around the world. *World Bank Policy Research Working Paper*, (7020).

NCPD. (2010). 2010 Revised National Population Policy: Improving the quality of life. Ministry of Finance and Development Planning.

Ndulu, B., & O'Connell, S. A. (1999). Governance and growth in Sub-Saharan Africa. *Journal of Economic Perspective, 13*(3), 41-66.

Nkomazana, O., Peersman, W., Willcox, M., Mash, R., & Phaladze, N. (2014). *Human resources for health in Botswana: The results of in-country database and reports analysis* (Vol. 6).

Pradhan, R. P., & Sanyal, G. S. (2011). Good governance and human development: Evidence from Indian states. *Journal of Social and Development Science, 1*(2), 1-8.

Republic of Botswana. (2017). National Development Plan 11. Volume 1. Ministry of Finance and Economic Development, Gaborone, Botswana.

Republic of Botswana. (2016). *Handbook of the Botswana 2016 Integrated HIV Clinical Care Guidelines.* Ministry of Health, Gaborone, Botswana.

Republic of Botswana. (2015). *Education & Training Sector Strategic Plan (ETSSP 2015-2020).* Gaborone, Botswana.

Republic of Botswana. (2009). *Botswana Public Expenditure and Financial Accountability Report–2009.* Gaberone, Botswana.

Republic of Botswana. (2008). *Tertiary Education Policy Gaborone*, Botswana: Government Printers.

Republic of Botswana. (1997). *A Long-Term Vision for Botswana – Vision 2016.* Gaborone, Botswana: Government Printers.

Republic of Botswana. (1994). *Revised National Policy on Education.* Gaborone, Botswana: Government Printers.

Siphambe, H. K. (2007). *Growth and employment dynamics in Botswana: a case study of policy coherence.* Geneva: International Labour Office, Policy Integration and Statistics Department. Working paper; No. 82.

Southern Africa Gender Protocol Alliance. (2015). SADC Gender Protocol 2015 Barometer: Botswana

Statistics Botswana. (2017). Botswana – Maternal Mortality Ratio (MMR) 2011 – 2015. Statistics Botswana, Gaborone.

Statistics Botswana. (2015). Population Projections for Botswana, 2011-2026. Statistics Botswana, Gaborone.

Statistics Botswana. (2014). Botswana Population and Housing Census 2011 Analytical Report. Statistics Botswana, Gaborone.

Statistics Botswana. (2014b). *Botswana Maternal Mortality Ratio, 2009-2013.* Gaberone, Botswana.

Statistics Botswana. (2014c). *Vision 2016 and the Millennium Development Goals Indicator* Report Gaberone, Botswana.

Statistics Botswana. (2014d). *Literacy Survey Stats Brief.* Gaberone, Botswana.

Statistics Botswana. (2014e). *Stats Brief: Secondary Education Stats Brief, 2012.* Gaberone, Botswana.

Statistics Botswana. (2014f). *Vision 2016 and the Millennium Development Goals Indicator Report* Gaberone, Botswana.

Statistics Botswana. (2013). Preliminary Results: Botswana AIDS Impact Survey IV (BAIS IV), 2013. Statistics Botswana, Gaborone.

Statistics Botswana. (2013a). *Statistics Brief.* Gaberone, Botswana.

Statistics Botswana. (2013b). *Stats Brief: Primary Education Statistics, 2012*. Gaberone, Botswana.

Statistics Botswana. (2013c). Botswana Core Welfare Indicators Survey 2009/10. August 2013. Statistics Botswana, Gaborone.

Statistics Botswana, (2011), Labour Statistics 2010, Gaborone

United Nations. (2015). *World Population Prospects: the 2015 Revision.* Department of Economic and Social Affairs, Population Division, United Nations, New York.

United Nations. (2013). *National Transfer Accounts Manual: Measuring and Analysing the Generational Economy.* Department of Economic and Social Affairs, Population Division, United Nations, New York.

United Nations. (2004). World Fertility Report: 2003, Department of Economic and Social Affairs, Population Division, New York.

UNICEF, & WHO. (2015). *Countdown to 2015: A Decade of Tracking Progress for Maternal, Newborn and Child Survival The 2015 Report.* Geneva, Switzerland: WHO.

Woo-Cummings, M. (Ed.). (1999). *The Developmental State.* Cornell: Cornell University Press.

World Bank. (2017). *World Development Indicators* database. Accessed at http://databank. worldbank.org/data/reports.aspx?source=world-development-indicators

World Bank. (2017a). *World Development Report 2017: Governance and the Law.* Washington, DC: World Bank. Doi:10.1596/978-1-4648-0950-7.

World Bank. (2015). Botswana Systematic Country Diagnostic (P150575)

World Bank. (2010). Fertility Decline in Botswana 1980-2006: a Case Study.

World Economic Forum. (2017). The Africa Competitiveness Report 2017, Geneva

World Economic Forum. (2015). *A 3E policy framework to reap the Demographic Dividend: Empower, Educate, Employ.* A report of the Global Agenda Council on the Demographic Dividend. World Economic Forum.

World Economic Forum. (2015a). Global Gender Report: Botswana Gender Gap Index Profile, 2015. Geneva.

World Economic Forum. (2015b). The Africa Competitiveness Report 2015, Geneva

Appendix

1. Technical Note on the Fertility Scenarios

The four fertility scenarios applied in the simulations for this study are adopted from the population estimates and projections of the United Nations Population Division World Population Prospects – The 2015 Revision. This is a summary of the assumptions underpinning the four fertility scenarios. For a detailed description, reference can be made to the publication on the methodology of the United Nations Population Estimates and Projections[22] that can be accessed at https://esa.un.org/unpd/wpp/Publications/Files/WPP2015_Methodology.pdf.

The four fertility scenarios used in the analyses for this report include:

a. No change/Constant variant

b. Low variant

c. Medium variant

d. High variant

The *Medium variant* is the anchor scenario for the fertility projections. The overall approach for the projections is based on a probabilistic methodology that in general assumes that fertility in all countries declines over time with the demographic transition from high fertility to low fertility, eventually fluctuating around or below the replacement level of 2.1 children per woman. In the *2015 Revision*, whose baseline period is 2010-2015, the most recent empirical evidence from censuses, surveys, registers and other sources, taking into account all information available and conducting internal checks for consistency by tracking changes in cohort size between successive censuses are used. The probabilistic method used in the 2015 Revision builds on models of fertility change developed in earlier revisions.

High variant: this is based on a high fertility assumption where fertility is projected to remain at 0.5 children above the fertility in the medium variant over most of the projection period. To insure a smoother transition between the baseline period (2010-2015) and the high variant, fertility in the high variant is initially +0.25 child in the first projection period (2015- 2020), +0.4 child in the second projection period (2020-2025), and +0.5 child thereafter. By 2025- 2030, fertility in the high variant is therefore half a child higher than that of the medium variant. That is, countries reaching a total fertility rate of 2.1 children per woman in the medium variant have a total fertility rate of 2.6 children per woman in the high variant.

Low variant: based on a low fertility assumption, fertility is projected to remain 0.5 children below the fertility in the medium variant over most of the projection period. To insure a smoother transition between the baseline period (2010-2015) and the low variant, fertility in the low variant is initially

-0.25 child in the first projection period (2015-2020), -0.4 child in the second projection period (2020-2025), and - 0.5 child thereafter. By 2025-2030, fertility in the low variant is therefore half a child lower than that of the medium variant. That is, countries reaching a total fertility rate of 2.1 children per woman in the medium variant have a total fertility rate of 1.6 children per woman in the low variant.

No change/Constant variant: under this variant, fertility in all countries remains constant at the level estimated for 2010-2015.

The figure below depicts the fertility projections for Botswana under the four assumptions. Under the *Medium fertility* variant, fertility is projected to decrease from 2.90 in the 2010-2015 period to 2.22 by the 2030-2035 period and under the replacement level at 1.87 by 2055-2060. Under the *High fertility* variant, fertility is projected to decrease from 2.90 in the 2010-2015 period to 2.72 by the 2030-2035 period and 2.37 by 2055-2060. On the other hand, under the *Low fertility* scenario, fertility is expected to dip below the replacement level much sooner. By 2030-2035, it is projected to be at 1.72 and will further decline to 1.37 by 2055-2060.

OPPORTUNITIES AND POLICY ACTIONS TO MAXIMISE THE DEMOGRAPHIC DIVIDEND IN BOTSWANA

Projected Fertility in Botswana, 2015-2016 (UN Projections)

Projected Fertility in Botswana, 2015-2060 (UN Projections)
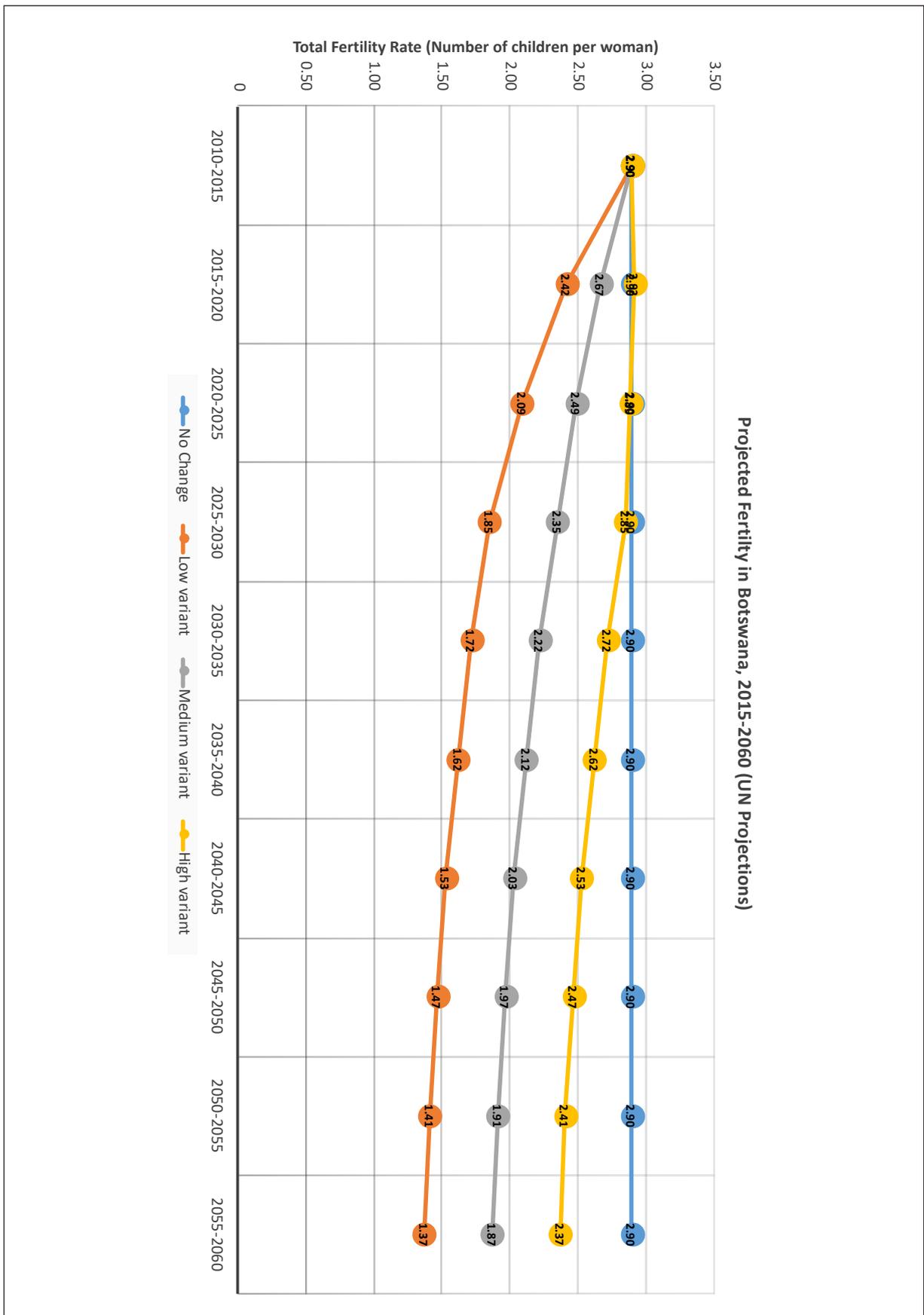
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