REPUBLIC OF BOTSWANA

2017 | 2018

IMPLEMENTING THE NEW URBAN AGENDA

The Global Goals
For Sustainable Development

ASSESSING
PROGRESS TOWARDS
URBAN
PROSPERITY

11 SUSTAINABLE CITIES AND COMMUNITIES

An Application of the City Prosperity Index in the City of **Francistown, Botswana**

United Nations
Economic Commission for Africa

STATISTICS BOTSWANA

UN@HABITAT
FOR A BETTER URBAN FUTURE

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Foreword

Chabongwa Matseka

Lopang Pule

Dr Burton Mguni

I am excited to share with you the "2017/2018 -State of the City Report- for the City of Francistown" developed using the City Prosperity Initiative/Index. The report elaborates on the prosperity levels of the City and the outcome of public policies with reference to the six dimensions of the Wheel of Urban Prosperity which are; Productivity, Quality of Life, Equity & Social Inclusion, Infrastructure Development, Environmental Sustainability, and Urban Governance and Legislation.

Each of these dimensions are defined from a collection of about 3 to 5 sub-dimensions which are also measured by a group of variables or indicators. These six dimensions encompasses the ten targets of the Sustainable Development Goal (SDG) 11 - Make cities inclusive, safe, resilient and sustainable, therefore presenting a comprehensive global monitoring tool for the achievement of this Goal.

In measuring the prosperity level of the City, two types of City Prosperity Index were used; the Basic City Prosperity index and the Extended City Prosperity index. The Basic City Prosperity Index focused on the initial diagnosis of the City using indicators that are commonly found in all cities; the index is used to compare cities internationally, whereas, the Extended City Prosperity Index is an in-depth diagnosis which focused on advanced indicators, some of which are spatial in nature (street connectivity, public spaces, green area per capita) and it showed the comparative advantage of our City over others in the country.

The report provides baseline information that will be used for future monitoring and reporting on SDG 11 indicators using the City Prosperity Initiative. It offers the city the possibility to create indicators, define targets and goals that can support the formulation of evidence –based policies , including the definition of city- visions and long-term plans that are both ambitious and measurable. The report not only provides incidences and measurement of the city prosperity, but it will also enable the city authorities, as well as local and national stakeholders to identify opportunities and potential areas of intervention for the city to become more prosperous.
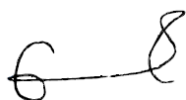
It also gives critical insight into which programs and policies work and the possible impacts these programs and policies may have. It presents a comprehensive picture of the city's performance in a holistic and clearer way.

The report outlines the progress made in all the dimensions and identifies deficiencies in each of the dimensions. This creates an opportunity for the city to introspect and ensure it channels its future efforts and finances towards closing the gaps that have been identified in all dimensions.

The findings and recommendations of this report are critical in supporting local decision making in key priority areas of development, such as the strengthening of urban legislation and systems of governance, harnessing the urban economy and enhancing urban planning of our city, and eventually feed into the realization of the goals, objectives and aspirations of the Botswana National Vision 2036 and actualize the implementation of the Botswana SDGs Roadmap.

It is our sincere hope that the report shall help shape the growth and prosperity of our City into a global destination of Interest. I wish to recognize all efforts made by my esteemed Local team, the Technical working Team, National Steering Committee of which I was part of, the Ministry of Infrastructure and Housing Development, Ministry of Local Government and Rural Development, Statistics Botswana and our partners; Ministry of Finance and Economic Development, UN-HABITAT and United Nations Economic Commission for Africa (UNECA) and all other stakeholders who were involved in the production of this report.

Joyful reading,

Chabongwa Matseka
District Commissioner, City of Francistown

Lopang Pule
Town Clerk, City of Francistown

Dr Burton Mguni
Statistician General

Acknowledgements

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List of Abbreviations and Acronyms

BDS	Botswana Demographic Survey
BMTHS	Botswana Multi-topic Household Survey
COFC	City of Francistown City
CPI	City Prosperity Index/Initiative
DHMT	Department of Health Management Team
DLGDP	Department of Local Government & Development Planning
DOH	Department of Housing
DTCP	Department of Town & Country Planning
DWMPC	Department of Waste Management and Pollution Control
GCC	Gaborone City Council
GHG	Greenhouse Gas
ECA	Economic Commission for Africa
ECE	Early Childhood Education
EPR	Employment to Population Ratio
GDP	Gross Domestic Product
ICPD	International Conference on Population and Development
ICT	Information, Communication Technology
LED	Local Economic Development
MFED	Ministry of Finance and Economic Development
MYSC	Ministry of Youth, Sports and Culture Development
NMES	National Monitoring and Evaluation System
NUA	New Urban Agenda
QOL	Quality of Life
SDG	Sustainable Development Goal
UN-DESA	United Nations Department of Economic and Social Affairs
UN-HABITAT	United Nations Human Settlements Programme
UNODC	United Nations Office on Drugs and Crime

Executive Summary

Background

The tremendous economic growth that Botswana experienced since independence was accompanied by a considerable increase of its urban population, from only 9% of the total population in 1971 to 54% in 2001 and 64% in 2017. Based on UN projections, it is expected that this share of urban population will increase to 84% by 2050, translating into 2.8 million urban dwellers in 2050, from a little more than 50,000 urban dwellers in 1971 and 1.4 million urban residents in 2017. It is evident that the increasing number of urban dwellers provides a great opportunity to achieve sustainable economic growth and development, if authorities at local and national levels have access to relevant, timely, accurate and disaggregated data to inform the design and implementation of programmes and policies in order to maximize the dispersed energies and potential of urban centres for the common good of all.

Objectives

The main objective of this study is to provide an assessment of urban development in two main cities in Botswana - Gaborone and Francistown – through data and evidence generated on various dimensions of urban prosperity, highlighting prevailing opportunities for and challenges to sustainable urban development in the country.

This is part of a project titled "SDG 11: Monitoring and reporting on human settlement indicators in Africa and Latin America" that UN-Habitat, the Economic Commission for Africa, the Ministry of Infrastructure and Housing Development, Statistics Botswana, and the cities of Gaborone and Francistown have implemented between 2017 and 2019. The ultimate objective is to strengthen the capacities of local and national governments to monitor and report on SDG 11 and improve the availability of and access to data and statistics at city and urban national level for the formulation of evidence-based policies.

Low levels of industrialization in Francistown have resulted in low production of goods and services, low economic density and specialization

Methods

Data and evidence are generated from an adaption and application of the City Prosperity Initiative (CPI) and its related index in Francistown City, Botswana. The CPI is a platform that addresses in a single framework the environmental, social and economic components of city prosperity for the formulation, implementation and monitoring of policies and practices on sustainable development. The associated index is a composite measure used to assess the overall performance of cities in terms of urban prosperity based on six key dimensions:

a) Productivity,
b) Infrastructure development,
c) Quality of life,
d) Equity and social inclusion,
e) Environmental sustainability
f) Governance and legislation.

Data used for the computation of the index comes from various sources including administrative data, recent demographic and socio-economic surveys such as the Botswana Multi Topic Household Survey of 2017, the Botswana Demographic Survey of 2017, maps from the Department of Surveys and Mapping and the Department of Town and Country Planning, as well as spatial data from satellite imagery and other open source geospatial data platforms.

Key Findings

Findings suggest that overall, the city of Francistown is doing relatively poorly in terms of prosperity, with a weak prosperity (moderately weak under basic CPI) and large discrepancies among the six dimensions of Urban Prosperity. There is therefore an unbalanced urban development in Francistown, probably due to institutional and structural weaknesses.

On one hand, the city is relatively doing well in terms of Quality of Life and Equity & Social Inclusion, reflecting a relatively equitable and inclusive society with a relatively well-educated population and higher life expectancy. On the other hand, there is need to rethink policies and investments in infrastructure, environmental sustainability and urban governance where performance is relatively poor based on evidence generated.

Productivity:

The productivity dimension has a relatively modest score mainly due to low levels of industrialization that have resulted in low production of goods and services, low economic density and specialization, with high reliance on minerals extraction, textile and beef industries, which have proven not to be sustainable in the long run. As such, the Vision 2022, an investment strategy should be appropriately implemented to diversify the city's economy and take advantage of its strategic location as a gateway to several neighbouring countries of Botswana to transform it into a Mining, Transport and Logistical Hub. Moreover, leveraging the presence of higher learning institutions and specialized health centres can help harness the potential of its youthful population, turning them into an educated, healthy and productive workforce that will enhance its economic prospects in the future.

Infrastructure Development:

Francistown is well endowed with social infrastructure in terms of basic services such as water, sanitation and electricity but has low street connectivity and poor internet access, which is a deterrent to productivity and economic growth.

It is therefore recommended to fully implement the Francistown Revitalization Plan to improve street connectivity, permeability and mobility of residents, as well as the Botswana Integrated Transport Plan for improved urban mobility through access and utilisation of convenient and reliable public transports systems. A digital revolution will also help transform the city into a smart and tech-savvy city, that is not only efficient in production and trading (e-commerce), but that can also offer decent employment opportunities for its youthful population.

Quality of Life:

Francistown city offers a fairly good quality of life to its residents, with the highest score on this dimension, mainly driven by high life expectancy at birth, literacy rate, mean years of schooling, low homicide rate, and high access to public space. However, there is need to rethink interventions and strategies to improve maternal and child health including South-to-South learning.

Access to Early Childhood Education which is mainly offered by the private sector is low, calling for increased involvement of the public sector through the implementation of the early childhood enrolment programme. Safety needs to be improved by integrating safety considerations from planning stage through implementation of the Safer Cities Programme. In addition, economic empowerment and poverty eradication strategies may provide a conducive environment for urban safety. Permeability and connectivity can be improved during the redevelopment and revitalisation of the city's urban form. Health personnel shortage can be addressed through increased investment in competitive remuneration packages to attract and retain the physicians in the city.

Environmental Sustainability:

While Francistown is a green city, it has been observed to be lagging behind in terms of protection of its environment with poor air quality, and inexistent or inefficient waste management systems. It is recommended to upgrade the existing monitoring stations and create new ones in the outskirts of the city for better monitoring of air quality.

In terms of waste management, there is a need to develop the City Waste Collection Management Strategy which will address both collection and the 3R's initiative (reduce, re-use, re-cycle) as well as community incentives and public education on waste management.Solar should be tapped as an important source of energy through the implementation of the objectives of the Renewable Energy Strategy and the Off-Grid Solar Action Plan.

Equity and Social Inclusion:

Francistown is doing fairly well in terms of equity and social inclusion as evidenced by low level of slums, youth unemployment, gender balance in access to secondary school and relatively high levels of women's representation in decision-making processes. It is however paramount to enhance policies and programmes geared towards poverty eradication and equal distribution of wealth given the relatively high levels of inequalities and poverty. Also, intensifying the implementation of the Plan of Action of the recently adopted Gender Equality Statement of Commitment will contribute to achieving gender equality in many spheres in the city.

Francistown lags behind in terms of protection of its environment with poor air quality, and inexistent or inefficient waste management systems.

Urban Governance & Legislation:

Engagement and participation of residents in the management of Francistown is limited due to voter apathy, limited access to public information and civic participation in the city's development including the planning and budgeting processes. This calls for increased participatory urban governance, use of non-conventional public participation channels like social media to improve communication and feedback with residents. While land use efficiency is relatively good in the city, effective implementation of the Francistown Revitalization Plan will contribute to reducing incidences of urban sprawl, strains on urban services and infrastructure provision and reduced economies of agglomeration through compact developments and densification.

Conclusion

In summary, the adaptation of the CPI in Francistown provides data and evidence that can serve as a baseline for the monitoring of progress towards sustainable urban development but also enable the city authorities as well as local and national stakeholders to gauge their performance and formulate inter-sectoral policy interventions.Together with the Ministry of Infrastructure and Housing Development and other relevant agencies, city authorities will be able - through a cross-sectoral and integrated approach - to identify and address the multi-dimensional nature of urban development, and collectively monitor planning investments as well as the urban transformations in the country.

However, access to data and information is unsatisfactory and needs to be greatly improved. In the long run, it is paramount to put in place the necessary mechanisms to enable access and use of relevant, timely, accurate and disaggregated data to inform the design and implementation of programmes and policies in Francistown.

Recommendations to enable access and use of relevant, timely, accurate and disaggregated data

Streamline data collection tools to CPI requirements and develop a data sharing strategy on urban indicators.

Set up a **clear institutional and regulatory framework** that will promote data sharing across sectors.

Set up a research and/or data unit within the Council that is in-charge of collecting relevant data and generating evidence to help in decision-making in Francistown, acting as a local urban observatory.

Establish a National Urban Observatory to pursue the monitoring of the urban transformation and support evidence-based policies and actions and formulate transformative actions in cities and urban centres.

Implement the National Spatial plan in terms of harmonisation of administrative boundaries.

Reinforce capacitation and skills transfer through additional capacity building activities at the local level.

Population Growth and Projection in Francistown

2001

2017

2050

City Prosperity Initiative
Indicators

🙂 Quality of Life
Equity & Social Inclusion

☹️ Productivity
Infrastructure
Environmental Sustainability &
Urban Governance

Chapter 1: Introduction

1.1 Overview

Despite their recognized importance in fostering sustainable development, cities and urban areas in both developing and developed countries are suffering from an acute crisis of accurate, timely, and useful information, hindering their capacity to develop sound and informed policies and actions to help them provide adequate services to their residents. Most of city and local authorities recognize that they do not have appropriate means and tools to understand urban dynamics and challenges with accurate data and information. In many parts of the world especially in least developed countries, lack of good quality, relevant, accessible and timely data on cities is a key element impeding progress not only in monitoring and reporting on global frameworks such as the 2030 Agenda for Sustainable Development and the New Urban Agenda (NUA), but also in formulating policies and designing programmes that respond to urban dynamics and challenges. This suggests that in many cities around the world, planners and decision-makers are operating in an environment of uncertainty, allocating resources to immediate and pressing issues rather than investing in progressive change over the long term. Yet, as recognized by the UN Sustainable Development Solutions Network (SDSN) 'data and metrics are essential for development goals to be met either at national or subnational level' (European Commission, 2019).

Cities require monitoring systems to support their vision and long-term plan for sustainable development, through periodic assessments on their state of development and evaluation of policy outcomes and impact of specific plans and actions. Through generation of reliable, timely, disaggregated, and accessible urban data, these systems can not only help track progress towards achieving development goals and identify setbacks and impediments to such progress, but also support the formulation of evidence-based policies.

To help address the challenges related to access and use of urban data worldwide, UN-Habitat has, over the past two decades, developed tools and methodologies for urban data collection and analysis. This has been achieved through partnerships with countries, cities around the world, as well as with other development agencies and institutions. One of the major tools developed by UN-Habitat in 2012, and which has been tested and adopted by various local, national governments and international organisations is the City Prosperity Initiative and its related index, the City Prosperity Index (CPI). CPI is a composite index which not only allows countries and cities to collect data on their performance against 62 indicators across six urban dimensions[1], but also acts as a practical framework for the formulation, implementation and monitoring of policies and practices on sustainable development and increased urban prosperity. By 2019, CPI has been applied to evaluate urban performance in 539 cities in 54 countries spread across all world regions, with most of these cities using the information generated for data-driven and informed decision-making processes.

This report presents results from an application of the CPI in the City of Francistown, Botswana. In addition to presenting data and performance across each indicator and dimension, the report also summarises the prevailing opportunities and challenges to sustainable development in Francistown and in Botswana at large, and makes recommendations which, if implemented would promote prosperous growth of the city.

[1] The six dimensions of the CPI include productivity, infrastructure development, quality of life, equity and social inclusion, environmental sustainability, and urban governance and legislation. The most elaborated version of the CPI is based on 72 indicators

The report is part of a project titled "**SDG 11: Monitoring and reporting on human settlement indicators in Africa and Latin America**", whose implementation in Botswana started in 2017, through a collaboration between UN-Habitat, the Ministry of Infrastructure and Housing Development, Statistics Botswana, and the cities of Gaborone and Francistown. The main objective of the project is to strengthen the capacities of national governments and support the design of monitoring tools to improve the availability of and access to data and statistics at city and urban national level for the formulation of evidence-based policies. As such, the project is in line with Botswana's efforts to strengthen urban data collection, analysis and dissemination capacities, effective science-policy links and relevance to monitoring urban SDGs and the NUA as well as for tracking the progress made across several urban development and transformation pathways in Botswana.

It is estimated that 64% Botswana's population live in urban areas (Statistics Botswana, 2017). Based on UN projections, it is expected that this share of urban population will increase to 84% by 2050 (UN DESA, 2019). In light of this increasing urbanization, the Government of Botswana and its development partners have been making concerted efforts to put in place mechanisms to ensure the urbanisation process contributes to national socio-economic development and poverty reduction, and does not lead to slum explosions and urban poverty or other negative effects of unplanned urbanisation. Indeed, the increasing number of urban dwellers provides a great opportunity to ensure sustained economic growth and development, if the government designs and implements programmes and policies in order to maximise the dispersed energies and potential of cities for the common good of all.

In line with these efforts, the country has started domesticating the implementation of the 2030 Agenda and its related Sustainable Development Goals (SDGs) and the NUA, with the first output being the development of a national implementation plan. While the government remains committed to leaving no one and no place behind, Botswana, like many other African countries faces challenges such as the lack of a proper monitoring and reporting mechanism to support national and subnational actions and frameworks; lack of, or undeveloped systems; limitations in specialised skills; and poor institutional coordination; all of which are key for tracking progress and informing actions that result in successful implementation of the development agendas. The country's efforts to create clean, sanitised, liveable, economically vibrant, responsive and inclusive cities require a strong monitoring framework, which would not only guide the collection of data and information for better understanding of urban trends and contribution of cities to national development and transformation, but also ensure decision making processes which affect majority of the urban population are informed by accurate and up to date data.

This report is a first step in setting up the required urban monitoring framework for Botswana, not only because it produces and presents disaggregated city level data, but because it also illustrates overall city performance across multiple dimensions and indicators. Through this analysis, the report showcases how multiple actors and institutions can work synergistically to promote sustainable development, where no one and no place is left behind. The adoption of the CPI as a standard and holistic urban monitoring framework will allow the Ministry of Infrastructure and Housing Development and other relevant agencies through a cross-sectoral and integrated approach to identify and address the multi-dimensional nature of urban development, and collectively monitor planning investments as well as the urban transformations in the country.

The report is structured into six main sections. The introductory section lays out the context and purpose of the report; Sections 1-4 provides an overview of the socio-economic, demographic and cultural contexts of Francistown city; and

64%
Botswana population living
in urban areas in 2017

Sections 5-6 focuses on the CPI, the data used and findings and their interpretation. The conclusion section summarizes the key findings and recommendations for the production and use of urban and city-level data for Francistown, which can also be applied in other urban settings in Botswana.

1.2 Urbanization, Development in Botswana

Botswana is one of the fastest growing and most successful economies in sub-Saharan Africa, with its economic growth averaging 5% per annum over the past decade (The World Bank Group, 2015). Since gaining independence in 1966, the country has experienced remarkable economic growth fuelled particularly by considerable mineral wealth (diamonds), good governance, and careful fiscal and sound economic management. The discovery and exploitation of these precious stones resulted in tremendous growth which in conjunction with a relatively small population of approximately two million, has turned Botswana into an upper middle-income country, with a GDP per capita of about $18,100 in 2017 (The World Bank Group, 2015). The economy grew at a rate of 4.4% in 2018 and is expected to remain at around 4% until 2021 (The World Bank Group, 2015).

Botswana is also known to be one of the least corrupt and best destinations to do business in Africa. However, the country remains vulnerable to structural changes and short-term external shocks such as market fluctuations due to its reliance on diamonds and an economy driven by the public sector. For example, the country's GDP shrunk by 5.2% (negative growth) in 2009 when the values of diamonds plummeted by 72% during the global financial crisis in the second half of 2008 (Kent & Ikgopoleng, 2011).

In addition, it is often suggested that the economic growth has not been pro-poor with income inequality being one of the highest of the world with a Gini coefficient of 0.52 (Statistics Botswana, 2018). At the same time, unemployment rate in general and youth unemployment in particular are high at about 18% and 37% in 2018 respectively (Statistics Botswana, 2018).

The sustained economic growth that Botswana experienced during the 40 years following its independence was accompanied by an increase in number and size of its urban centres[1], which together with rural-to-urban migration has led to a considerable rise in its urban population (Oucho, Campbell, & Makamaamb, 2014). In fact, the number of urban centres has increased more than 10-fold, from only 5 settlements in 1971 to 53 in 2017 (Department of Town and Country Planning, 2018). On the other hand, from a predominantly rural country after independence with only 9.1% of this population living in urban centres in 1971, the country rose rapidly to become predominantly urban by 2001, with half of its population being urban residents (54%). This translates into an increase of its urban population from a little more than 50,000 in 1971 to about 1 million in 2001. In fact, the annual growth rate of the urban population was 11.2% during the period 1971-81, 12.8% during the period 1981-91 although it declined to 4.2% and 3.5% during the periods 1991-2001 and 2001-2011 respectively. In 2017, about two-thirds of Botswana population lives in urban areas (64%), i.e. about 1.6 million urban residents.

$18,100
Botswana GDP per Capita
(in 2017)

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[1] In Botswana, urban areas are defined as any settlement with at least 5 000 people of which 75% of the workforce is engaged in non-agricultural activities.

Rural populations move to urban areas mainly in search of better economic opportunities in the secondary and tertiary sectors or better living standards; they are pushed to leave by poor living conditions and lack of basic services in their rural settings. The mining industry resulted in rural to urban migration as there were large income disparities between urban industrial and rural agrarian sectors. More significantly, low agricultural commodity prices, weak policies, climatic changes – droughts and desertification, presented a push factor for populations and forced rural populations towards urban centres (Oucho et al., 2014).

Data from the latest Botswana Multi-Topic Household Survey indicates that poverty incidence in 2016 was much higher in rural areas (24%) than in cities/towns (9%) and urban villages (13%) (Statistics Botswana, 2018). In 2016, 93% of the urban population in cities/towns and 86% in urban villages had access to potable piped water (either indoors or outdoors) compared to only 43% of their counterparts in Rural Areas. Also, whereas the majority of households had access to electricity in cities/towns (82%) and urban villages (79%), only 35% of their rural counterparts were provided with this basic social service. However, there are strong rural-urban linkages as most urban households maintain strong ties with their rural homes where they own land and cattle posts, which are often used as safety net for difficult economic times (Kruger, 1998). Also, recent data show that out-migration from major urban centres (Gaborone, Francistown, Lobatse, Selebi Phikwe, Orapa and Jwaneng) exceeds in-migration, suggesting that major urban centres may be less attractive to other residents (Statistic Botswana 2017).

> Net out-migration from urban centres such as Gaborone and Francistown could be due to increase in land prices that cause residents to move out to the suburban fringe of neighbouring districts or return to their home places

Figure 1: Urbanization Trends in Botswana
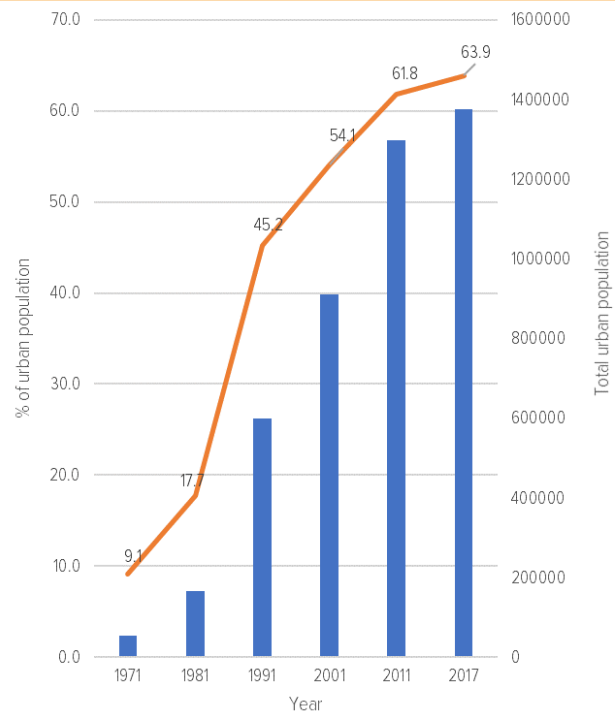
The net out-migration from urban centres such as Gaborone and Francistown could be due to increase in land prices that cause residents to move out to the suburban fringe of neighbouring districts or return to their home places (Navaneetham & Dwivedi, 2014), with high net in-migration experienced in Kweneng East, Central Palapye and North East District (Statistics Botswana, 2017).

It is expected that the share of urban population will reach 84% by 2050, culminating in about 2.8 million urban residents (UN DESA, 2018). The effects of this urban growth shall be experienced mainly by the country's two (2) major cities of Gaborone and Francistown. In addition to the reclassification of rural settlements to urban spaces, most of the existing urban centres, particularly Gaborone and Francistown are continuing to grow outwards and are rapidly sprawling to their neighbouring rural areas. This has resulted in a symbiotic relationship between the cities and their hinterland as they depend on each other for manpower, agricultural produce and accommodation (Ministry of Lands and Housing, 2015).

1.3 Overview of the City of Francistown

This section provides a brief overview of the historical, geographical, demographic and socio-economic backgrounds of the City of Francistown.

1.3.1 Historical Background

Francistown is Botswana's second city and is located in the North Eastern part of the country. Unlike most of the urban settlements in Botswana, the history of Francistown is unique. In the late 1867, Southern Africa's first gold rush was ignited when German Karl Mauch discovered gold along the Tati River. A group of Australian miners showed up to the small town in search of their stake two (2) years later, along with Englishman Daniel Francis. Although Francis headed for the newly discovered Kimberley diamond fields in 1870, he returned 10 years later to negotiate local mining rights with the Ndebele king Lobengula and laid out the town that now bears his name. However, there is a school of thought that the city should have been called Nyangabwe, after the name of the hill that is a unique landmark in the city (Eriksson, Altermann, & Fortsch, 1995; Morton, Ramsay, & Mgadla, 2008; Republic of Botswana, 2009).

Prior to independence, Francistown was Botswana's largest commercial centre. The city started as a gold mining town, with gold sustaining its economy from the late 1800s until the 1930s. The discovery of gold in 1869 sparked the first gold rush in Africa fifteen years before the gold boom at Witwatersrand in South Africa. But the industry was hard hit by the global recession of the 1930s. Between 1936 and 1980, the economy of Francistown was largely supported or dependent on the Witwatersrand Native Labour Association, a company that recruited labour force for South African mines.

The miners were recruited from many African countries and transported to South Africa through Francistown by air or railway.

Since 1966, the city has grown significantly mainly due to active cross-border trading with Rhodesia/Zimbabwe, becoming in 1997 Botswana's second city after Gaborone (Eriksson et al., 1995; Morton et al., 2008; Republic of Botswana, 2009). At its creation, the town comprised one street east of, and parallel to the railway line - the Haskins Street - the first tarred road in Botswana (named after a prominent family in the town prior to independence).

The city is governed by Francistown City Council, which is composed of a political and an administrative wing. The Council has 24 Councillors representing the different wards of the city, a Mayor who is head of the political wing, and a Town Clerk who heads the Administrative wing.

1.3.2 Geography and Location

The City of Francistown is located precisely on latitude 210 11' South of the equator and longitude 270 32' East of the Greenwich Meridian. The City lies within the Eastern Planning Region of Botswana, which has a concentration of mining activities and is the largest in the Region in terms of both population and area (Department of Town and Country Planning, 2018). It is the main urban centre within North East District and is the hub of Greater Francistown Planning Area. Its role is recognized by the National Settlement Policy (1998), which has ranked it as a Primary Centre in the settlement hierarchy in the country. It occupies a total land area of 19,657 hectares of which 3,862.3 hectares is made of undeveloped land.

The City is situated around the confluence of the Tati and Ntshe rivers and lies about 80 km from the Zimbabwean border on the main North-South trunk road. The trunk road to Maun meets the North – South road within the City. The Botswana Railways line, which runs North-South of the country passes through the centre of the City while the Sowa rail line runs westwards from the City.

Location of Francistown
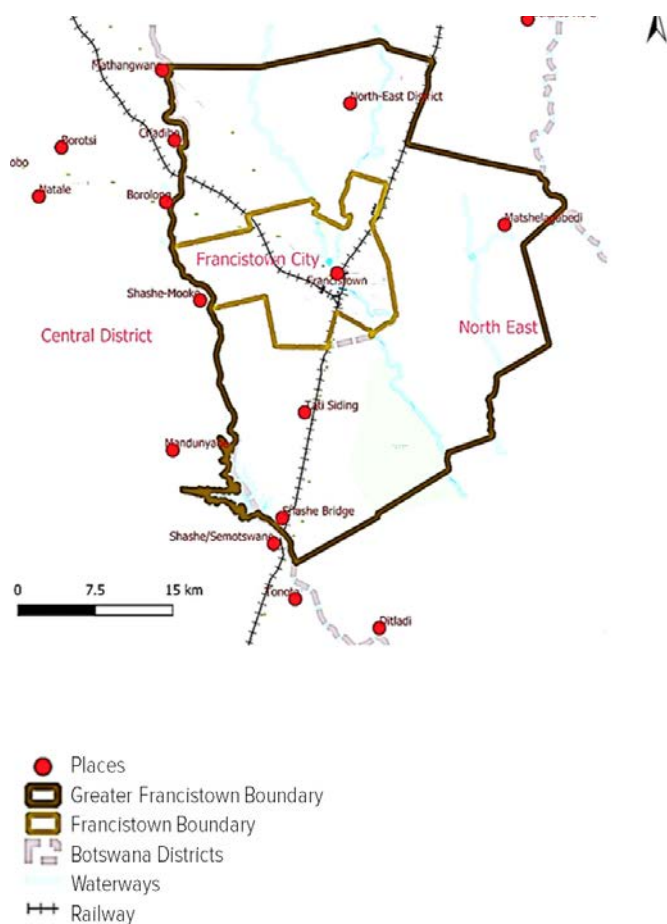
The City of Francistown is strategically positioned to be a gateway to countries in Botswana's northern border (e.g. Zimbabwe, Zambia, etc.), and to many unearthed economic possibilities in the northern part of the country, all the way to the Chobe area, Okavango, Makgadikgadi and the eastern part of the country, which boast the biggest dams with tourism potential and beyond.

Over 70 percent of Botswana's mining activity takes place in northern Botswana, with Francistown being a dominant administrative and commercial hub in the North.

The city maintains strong links with the entire northern part of the country and beyond; and serves as a major hub of transportation communication for northern Botswana and indeed for the whole country (City of Francistown Council & Francistown Urban Development Commitee, 2017).

The City has excellent road links to southern part of Botswana as well as Zimbabwe and Zambia to the north via North-South road. From Francistown, there are also road connections to Orapa/Letlhakane (and the Boteti area), Maun (and the Okavango), Kasane (and Chobe) Zambia and the Caprivi Strip of Namibia. The mining towns of Sowa and Selebi-Phikwe and hence to South Africa are well connected by road and rail to Francistown. In addition, there are regular connecting flights to Johannesburg, Maun and to other parts of the world via Gaborone from Phillip Gaonwe Matante International Airport (formerly Francistown International Airport).

These linkages have also presented a suitable platform for twinning arrangements with other cities such as the City of Genk in Belgium, Livingstone in Zambia, and Buffalos in South Africa.These arrangements aim at benchmarking good practices that could assist the city in improving strategies for implementing successful development projects and programs (City of Francistown Council & Francistown Urban Development Commitee, 2017).

1.3.3 Demographic Background

Compared to most countries in sub-Saharan Africa, Botswana is at an advanced stage of the demographic transition, with significant decline of its fertility and mortality rates. In 2018, Botswana's population was estimated at just over 2.2 million people (Statistics Botswana, 2017) and is projected to reach 3.4 million by 2050. Its total fertility has gone down from about 6 children on average per woman in the 1960s to about 3 children in 2017 (Statistics Botswana, 2017), which is also much lower than the average of about 5 children for sub-Saharan Africa.

Figure 2: Evolution of Francistown Population
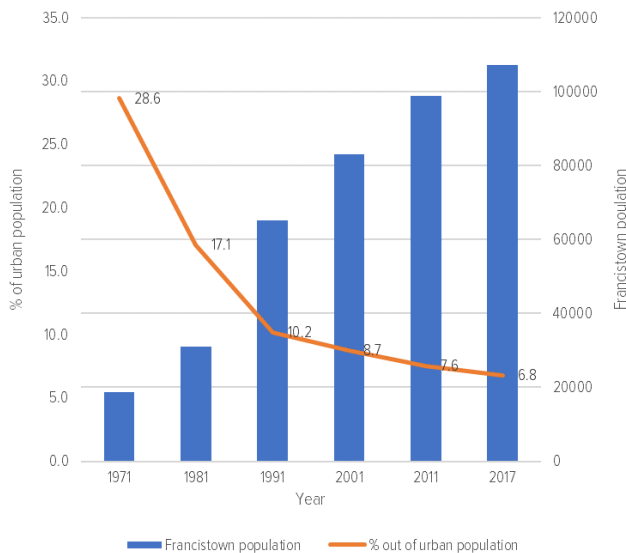
Source: Botswana Demographic survey, 2017

In addition, under-5 mortality has considerably declined from as high as 152 deaths per 1000 in 1971 to 48 deaths per 1000 live births in 2017 (Statistics Botswana, 2017). This is reflected in the evolution of the population of its second city, Francistown.

Census data indicates that the total population of the city has tremendously increased between 1971 and 1991, going from 18,613 inhabitants in 1971 to 31,065 in 1981 to about 65,244 in 1991 (Figure 2). The huge increase between 1981 and 1991 can be accounted for by the obvious growth of the commercial and industrial sectors in the city at the time, fuelled by the city's engagement in cross border trading with Rhodesia/Zimbabwe, the stabilization of Selebi-Phikwe and Orapa population and the rapid growth of squatter areas in the city by then (Republic of Botswana, 1997). The growth slowed down during the period 2001-2011, reaching 83,023 and 98,961 inhabitants in 2001 and 2011, respectively.

According to Francistown Development Plan 4, the city services an excess population of approximately 90,800 from the neighbouring villages or northeast district which fall within the Greater Francistown Area (Republic of Botswana, 1997).

This rapid population growth if unchecked could outstrip the authorities' capacity to provide basic services and infrastructure to the city's residents. The rapid growth was mainly due to rural-urban migration during those years, which was fuelled by drought in rural areas forcing people who were unable to make a livelihood from agriculture in rural areas to relocate to the City. Population changes in Francistown may have also been affected by high death rates due to HIV/AIDS prevalence by then as well as the existence of the Orapa-Letlhakane and Selibe Phikwe mines, which drove skilled and semi-skilled manpower away from Francistown (City of Francistown Council & Francistown Urban Development Commitee, 2017). The low economic growth that the City is currently experiencing with closure of major economic activities like the mines, Botswana Meat Commission and other textile industries has also affected population growth.

Overall, in 2017, Francistown was home to 5% of the Botswana's national population and 7% of the urban population in the country. In general, while the Francistown population has been growing steadily over time, its importance in the total urban population has been reducing from 1971. In 1971, about 30% of urban dwellers in Botswana were living in Francistown; this percentage declined to 7% in 2017 (Statistics Botswana, 2017) .This could be attributed to net-out migration to the hinterlands (greater Francistown) and

in 2017, Francistown was home to 5% of the Botswana's national population and 7% of the urban population in the country.

Figure 3: Evolution of Francistown Population
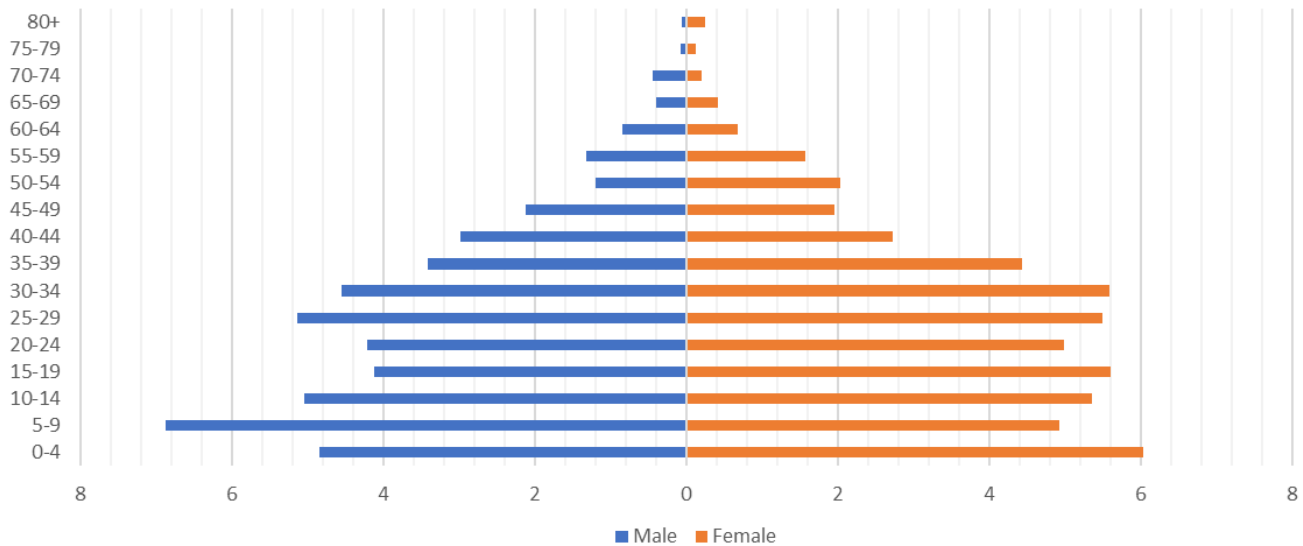
Source: Botswana Demographic survey, 2017

Figure 3 shows the distribution of population by age and sex in 2017 .In 2017, the city had a sex ratio of sex ratio of 91 men for 100 women and over the years it has been observed that the city has a higher number of females than males (Statistics Botswana, 2017). The population distribution of Francistown in 2017 depicts a youthful population, with a third aged less than 15 years (33%), and 2 out of 5 residents aged 15-34 years (40%). Overall, about 2 out of 3 people in the city of Francistown (65%) are within the working age population (15-64 years old), hence posing an opportunity for economic growth if the right investments are made in the social, health and economic sectors. However, it is worth noting that high un-employment rates experienced more especially by the youth has posed as a challenge to this opportunity.

100:91
(male to female)
Botswana Sex Ratio in 2017

1.3.4 Socio-Economic Background

Mining, commerce and agriculture have been essential parts of Francistown mainly due to its location along Botswana's main road and rail transport routes, mining. Tourism related accommodation; Textile, the Dumela Industrial Complex and Botswana Meat Commission are the main economic drivers in the city.

The advantages enjoyed by the City of Francistown due to its well-developed transportation and communication links have encouraged the growth of a large wholesale sector serving a large part of northern Botswana, plus parts of Caprivi Strip (Namibia), Zambia and Zimbabwe. This has made the phenomenon of urbanization, mostly due to rural-urban migration in search of greener pastures, an everyday experience for the City. Shopping tours operate from Bulawayo as far as Lusaka to the city of Francistown several times a week, thus boosting the economic base of the city. In the process, some traders end up choosing to settle in the city for better opportunities.

Map 2: Interlinkages between Francistown and other towns and major villages

Major Urban Centres and Linkages in Botswana

Legend

District boundary
—— Main roads
Secondary roads
—— Railway line
● City
· Major towns

Anything that happens to the fragile economy of the City will always have ripple effects across the entire North East District.

This effectively means a retail customer population of 300,000, which may account for the high level of retail floor space North East District villages of Matshelagabedi, Matsiloje, Shashe Bridge, and Tati Siding are some of the villages that largely benefit from the City (City of Francistown Council & Francistown Urban Development Commitee, 2017). Below is a map that shows the interlinkages of the City with other towns and major villages. Urbanization in Francistown can be traced back to rural –urban migration and natural increase. The city experienced the influx of the rural immigrants who came to look for greener pastures in the mines; and subsequently in various industries that continued to emerge back then. Amongst the industries, Francistown experienced the peak in the textile sector between the 1970s and 1980s. For instance, Zimbabwean firms in the textile sector (Everest Textiles, Nortex Textiles) relocated to Francistown as they fled the political unrest in Zimbabwe (Desiree, Serah, Kunal, & Jumaane, 2007).

It is also worth noting the Botswana Meat Commission (BMC) was set up in Francistown in 1989, after having been established by Government in 1965. The City stands a chance to further enjoy the benefits of economic growth once the planned privatization of this company is completed. The city is also home to almost all of the high-level educational facilities in the northern side of the country, some of which include University of Botswana, Botswana Accountancy College, Gaborone Institute of Business Studies, Gaborone University College of Law, Ba Isago University, Francistown Training & Vocational Centre, Botswana Open University and Botho University. This has to a large extent contributed to high literacy rate of 94.4% in 2017 and human resource skills development of a youthful population which represents about 7% of the city population in 2017.

In the hinterlands, Francistown serves as a retail centre, for communities as far as 500 km away due to the regular bus services. in food, clothes and household goods in Francistown (City of Francistown Council & Francistown Urban Development Commitee, 2017). In the entire North-Eastern part of Botswana, Francistown carries the burden of single handedly supporting major villages and rural economies with services.

Map 3: Urban Expansion trends for Francistown

Francistown Urban Expansion Trends

2001   2011   2017

☐ Boundary   ■ Urban Cluster

The presence of these institutions contributes to the influx of young population to the city. This therefore means increased demand for provision of accommodation, creation of employment, recreation and sports facilities.

1.3.5 The trend of Urban Growth and Existing Spatial Plans

The City of Francistown is the oldest town in Botswana, having been initially developed as a small mining settlement in 1866 following the discovery of gold deposits. In 1911, the first major subdivision of land was carried out for the establishment of a township in what is today the City of Francistown, and this still comprises the city's central residential and business area.The residential and business area is about 60 hectares in extent and is laid out on a grid street pattern immediately to the east of the rail line. The subsequent growth of the City in the period up to the time of independence in 1966 was characterized by the establishment of the Government Camp between the rail lines and the Ntshe River.
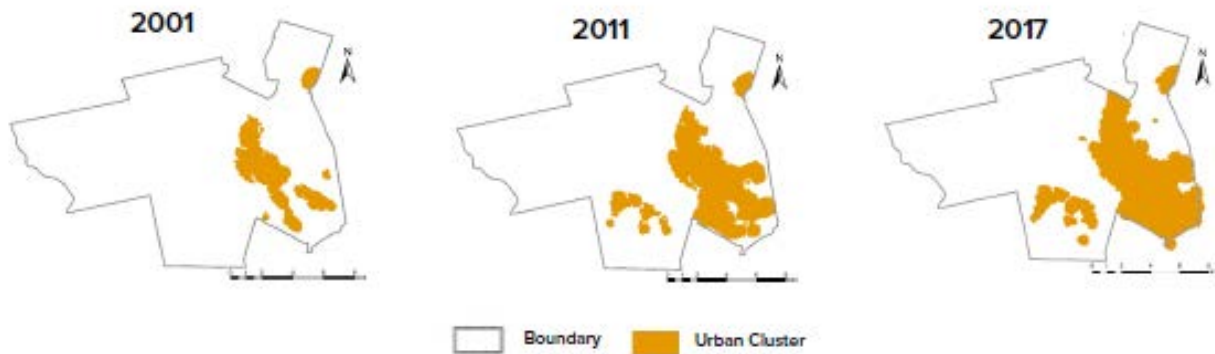
The growth of the traditional housing area on the west bank of Riverside and Tati West was laid out on a grid system by Tati Company, mainly in response to the migration to the town which took place in the 1950s and 1960s (Republic of Botswana, 1997). The City has since grown both spatially and economically to become the major commercial, administrative and communication centre for the Northern part of the country and consequently a major migration destination in the region. However, the City has experienced a shortage of land due to fact that most of the land in and around it belonged to Tati Company and is mostly freehold land. The Government of Botswana however took an initiative to buy some land from Tati Company and converted it to state land for the development of the City.A spatial development plan addressing issues of rapid population growth, housing shortage, inadequate infrastructure, transportation and related services was then developed in 1997.

Since then, the plan has guided sustained orderly development in the city from a land use perspective hence creating an environment that promotes a good quality life for residents, with a vibrant economic base and capable of attracting investment. Between 1992 and 1997, development pressures influenced by the thriving mining sector resulted in the need for more land and Gerald Estate (Farm 35 NQ, freehold land) was therefore purchased in order to accommodate new expansion areas of the city (Republic of Botswana, 1997).

However, this contiguous spatial expansion of the city has been observed to broadly outpace the growth of population resulting into a sprawling low-density development. This could be attributed to the lower economic growth that the City experienced with the closure of the mining sector and some economic activities (beef industry, textile, and mining) that have been the backbone of the City. By the year 2003, only 15,794 out of 19,657 ha of land within the urban boundary accounting for 80% was developed, leaving about 3,860ha of vacant land.

The main explanatory factors for this sluggish development may be low economic growth of the city, the traditional way of planning the City, which is exacerbated by limited capacity of the Urban Planning Department to devise and impose urban regulations that promote compact development as opposed to horizontal expansion as articulated by spatial urban plans.

The contiguous spatial expansion of Francistown has broadly outpace the growth of population resulting into a sprawling low-density development.

Urban Governance and Legislation Dimension- Demonstrates the role of good urban governance in catalysing local action towards prosperity

6

Environmental Sustainability Dimension- Measures the average achievement of cities in protecting the urban environment and its natural assets.

5

Equity and Social Inclusion Dimension - measures the average achievements in ensuring equitable distribution of and access to the benefits of prosperity,

4

Infrastructure Development Dimension -measures the average achievement of a city in providing adequate infrastructure for accessing clean water, sanitation, good roads, and information and communication technology.

Quality of Life Dimension - measures the average achievement in ensuring general wellbeing and satisfaction of the citizens.

2

3

Productivity dimension Measures the the average achievement of the cities in terms of creating wealth and how it is shared.

1

Chapter 2: Applying The City Prosperity Index In Francistown

2.1 Overview of the City Prosperity Index (CPI)

The City Prosperity Index (CPI) is a composite index used to measure the overall performance of cities based on six key dimensions: a) productivity, b) infrastructure development, c) quality of life, d) equity and social inclusion, e) environmental sustainability and f) governance and legislation. The index, which is computed using city level data measures how cities create and distribute socio-economic benefits and prosperity. The level of prosperity of a city is measured through the extent to which the city has achieved all these six dimensions of prosperity.

CPI offers a platform for urban data collection and evidence-based decision making. As a data platform, CPI has 72 indicators which helps in identifying dimensions that are performing well or poorly so that appropriate corrective measures can be put in place. The Index not only builds on the use of existing data and information from various sources such as household surveys, censuses, policy documents, and other databases, but also contributes to the development of local and national databases with new sets of information from sources such as geospatial analysis and community generated data (UN-HABITAT, 2012).

Given that the indicators have different measurement units and scales, they must be standardized using various approaches in order to enable the computation of the composite index. This standardisation transforms a variable from its original measurement unit into a dimensionless measure that ranges between 0 and 100, but also considers the fact that there is a direct relationship between each indicator and the CPI (UN-HABITAT, 2012).

Below is a summary of what is measured in each dimension.

Productivity dimension measures the average achievements of the cities in terms of creating wealth and how it is shared. It also measures cities' contribution to economic growth and development, generation of income, provision of decent jobs and equal opportunities for all.

Infrastructure Development Dimension measures the average achievement of a city in providing adequate infrastructure for accessing clean water, sanitation, good roads, and information and communication technology. These are essential in improving living standards and enhancing productivity, mobility and connectivity.

Quality of Life Dimension measures the cities' average achievement in ensuring general wellbeing and satisfaction of the citizens.

Equity and Social Inclusion Dimension measures the cities' average achievements in ensuring equitable distribution of the benefits of prosperity, reduction of poverty and the incidence of slums, protection of rights of minority and vulnerable groups, gender equality, and equal participation in the social, economic, political and cultural spheres.

Environmental Sustainability Dimension measures the average achievement of cities in protecting the urban environment and its natural assets. This should be done simultaneously while ensuring growth, pursuing energy efficiency, reducing pressure on natural resources and reducing environmental losses through creative and environment-enhancing solutions.

Urban Governance and Legislation Dimension has the purpose of demonstrating the role of good urban governance in catalysing local action towards prosperity, including the capacity to regulate the urbanisation process.

The CPI is constructed incrementally as follows:

The Basic City Prosperity Index which is useful for cities that want to compare their level of development and overall performance with other cities in the regional and global arena. The Basic City Prosperity Index uses a set of commonly available indicators that exist amongst all cities, acting as a platform for regional/global benchmarking and for comparison purposes.

The Extended City Prosperity Index: This index is a more advanced version of the basic model. Its main function is the integration of more indicators that are not commonly available in all cities, but which are of specific contextual relevance to them. Cross-city comparability is thus not the primary objective of the extended CPI. This Index allows for a detailed political and technical dialogue that is essential for the development of evidence-informed public policies (UN-HABITAT, 2019).

The Contextual City Prosperity Index: This index represents the most advanced and complete stage of the process. In addition to the basic and extended indicators, a certain number of indicators capturing the policies and actions implemented in the city are measured. As such, the contextual index contributes to assessing the performance of the city, through monitoring the impact of local initiatives and projects that are needed to implement the city's vision in order to achieve shared prosperity and sustainable development.

In practical terms, for the calculation of the CPI, each dimension is made up of a series of sub-dimensions, which in turn include many variables/indicators that contribute to the calculation of the specific index.

> Each CPI dimension is made up of a series of sub-dimensions, which in turn include many variables/indicators that contribute to the calculation of the specific index.

Figure 4: Scale of prosperity
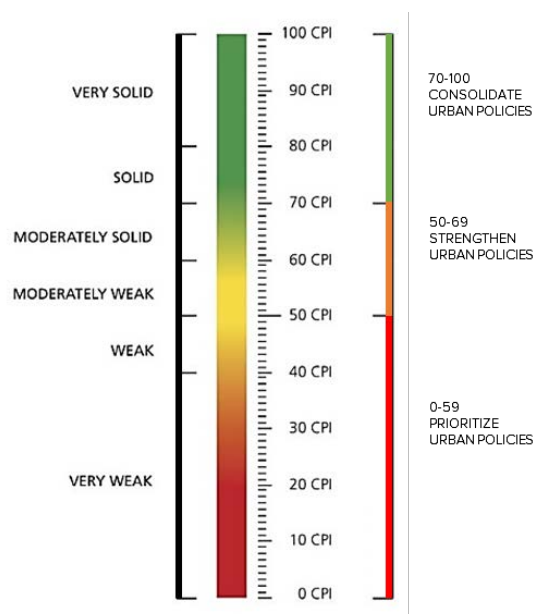
As such, sub-indices are computed for all the sub-dimensions, which are aggregated to produce six indices for all the six dimensions. The overall CPI value is then calculated as an average of the indices for the six dimensions. Figure 4 shows how the overall CPI value -which ranges from 0 to 100 - can be interpreted based on the different categories defined to assess the status of prosperity in a given city.

2.2. Linkage between CPI and SDGs

The City Prosperity Index can be used to monitor and report on progress made by cities on the 2030 Agenda for Sustainable Development as it is based on indicators that are strongly linked to the SDGs. In total, 1 in 4 of all SDG targets that can be measured at local level are covered by the CPI. Specifically, all 10 targets and indicators of Goal 11 are integrated in the CPI. Overall, the CPI measures progress on city/urban goals in a comprehensive and integrated manner, bringing together urban SDG indicators in a single framework that covers the environmental, social and economic components of city prosperity and sustainability (see figure 5).

Figure 5: Linkages between CPI and SDG 11 targets

2.3 Applying CPI in Francistown

2.3.1 Data and data sources

CPI indicators are comprised of spatial and non- spatial indicators as presented in Table 1 below. In Francistown, data used for non-spatial indicators was derived from socio-economic and demographic reports, particularly the Botswana Multi-Topic Household Survey of 2017, the Botswana Demographic Survey (BDS) of 2017, economic surveys as well as administrative data. In instances where data was unavailable, proxies were used.

On the other hand, spatial data was derived from maps from the Department of Surveys and Mapping and the Department of Town and Country Planning, as well as from satellite imagery and other open source geospatial data platforms. In some instances, such as collection of data on public transport stops and open spaces, ground truthing was also done to verify and update information on the existing maps and/or information extracted from satellite imagery.

Table 1 summarizes the indicators adopted for the computation of CPI in Francistown, as well as the sources of data for each indicator.

As shown in Table 1 below, some indicators were not computed due to lack of data from the relevant ministries/offices, and/or lack of baseline inputs required for their computation. Despite a diversity of challenges on data availability at the city level, 87% of the required data was collected at the city level, as national aggregates or as proxies where the direct indicator information was unavailable. Out of 72 indicators, 57 had the required information, with 1 was captured through proxies, 3 were captured through national level data.

CPI indicators are comprised of spatial and non- spatial indicators

Table 1: Data Sources

DIMENSION	SUB-DIMENSION	INDICATORS	BASIC CPI	EXTENDED CPI	DATA	SOURCE YEAR
INFRASTRUCTURE	Social Infrastructure	Physicians Density	X	X	Available	Nyangabgwe Hospital, Greater Francistown DHMT, Private GP practices and Riverside Hospital Establishment Registers.
		Number of public libraries		X	Available	MYSC,2018
	ICT	Internet Access	X	X	Available	BMTHS,2016
		Home computer access		X	Available	BMTHS,2016
		Average broadband speed		X	Available	ICT report, 2014
	Urban mobility	Use of public transport	X	X	No data	
		Average daily travel time	X	X	No data	
		Length of mass transport network		X	No data	
		Traffic fatalities		X	Available	Botswana police report, 2018
		Affordability of transport		X	No data	
	Street connectivity	Street intersection density	X	X	Available	Open source Data, 2017
		Street density	X	X	Available	Open source Data, 2017
		Land allocated to streets	X	X	Available	Open source Data, 2017
QUALITY OF LIFE	Health	Life expectancy at birth	X	X	Available	BDS, 2017
		Under five mortality rate	X	X	Available (National level)	BDS, 2017
		Vaccination coverage		X	Available	Greater Francistown DHMT, Annual Performance Results 2018
		Maternal mortality		X	Available (National level)	BDS, 2017

DIMENSION	SUB-DIMENSION	INDICATORS	BASIC CPI	EXTENDED CPI	DATA	SOURCE YEAR
QUALITY OF LIFE	Education	Literacy rate	X	X	Available	BMTHS,2016
		Mean years of schooling	X	X	Available	Statistics Botswana
		Early childhood education		X	Available	BMTHS,2016
		Net enrolment in higher education		X	Available	BMTHS,2016
	Safety and Security	Homicide rate	X	X	Available	Botswana Police Report ,2017
		Theft rate	X	X	Available	Botswana Police report, 2018
	Public Space	Accessibility to public open spaces		X	Available	Francistown Land use map, 2014, Landsat Images, 2017.
		Green area per capita	X	X	Available	Landsat Image 2017
EQUITY & SOCIAL INCLUSION	Economic Equity	Gini Coefficient	X	X	Available (Urban level)	BMTHS, 2016
		Poverty rate	X	X	Available	BMTHS, 2016
	Social Inclusion	Slum households	X	X	Available	BMTHS,2016
		Youth unemployment	X	X	Available	BMTHS,2016
	Gender Inclusion	Equitable secondary school enrolment	X	X	Available	BMTHS,2016
		Women in local government		X	Available	City Administrative data, 2018
		Women in the workforce		X	Available	BMTHS,2016
	Urban diversity	Land use mix		X	Available	Land use Map, 2014.Landsat Image 2017
ENVIRONMENTAL SUSTAINABILITY	Air Quality	Number of monitoring stations	X	X	Available	DWMPC, 2018
		PM 2.5 Concentration	X	X	Not data	
		CO_2 emissions		X	Available (National level)	Botswana National Greenhouse Gas (GHG) Inventories Report 2014/15
	Waste management	Waste collection	X	X	Available (Proxy)	BMTHS,2016
		Wastewater treatment	X	X	No data	

DIMENSION	SUB-DIMENSION	INDICATORS	BASIC CPI	EXTENDED CPI	DATA	SOURCE YEAR
ENVIRONMENTAL SUSTAINABILITY	Air Quality	CO2 emissions		X	Available (National level)	Botswana National Greenhouse Gas (GHG) Inventories Report 2014/15
	Waste management	Waste collection	X	X	Available (Proxy)	BMTHS,2016
		Wastewater treatment	X	X	No data	
		Solid waste recycling share		X	Available	Department Environmental Health, City of Francistown Council, 2017
	Sustainable energy	Share of renewable energy consumption	X	X	No data	
URBAN GOVERNANCE AND LEGISLATION INDEX	Participation	Voter turnout	X	X	Available	Independent Electoral Commission, 2014
		Access to public information		X	Available	City of Francistown Council administrative data, 2018
		Civic participation		X	Available	SDG 11 Project Team Survey, 2019
	Governance of urbanization	Land-use efficiency	X	X	Available	Francistown Satellite images, 2011 & 2017
		Days to start a business	X	X	Available	World Bank Group Flagship Report, Doing Business 2019, Economy Profile, Botswana
		Subnational debt		X	Available	City of Francistown Council administrative data, 2018
		Local expenditure efficiency		X	Available	City of Francistown Council administrative data, 2018
		Land-use efficiency	X	X	Available	Francistown Satellite images, 2011 & 2017

2.3.2 Data challenges

The following challenges were encountered during data collection:

a) **Unavailability of data** on some indicators which include use of public transport, average daily travel time, and affordability of transport.

b) Some indicators have **partial or no data** at all and proxies had to be used in their computation. These include solid waste collection where data on households with regular access to solid waste collection was used and wastewater treatment where an assumption that the total water distributed equals the total water discharged as waste. In some instances, there was no data at the city level hence national or data or for urban areas was used, e.g. Gini coefficient and carbon dioxide emissions.

e) **Lack of Spatial Analyst and Network Analyst licenses** which are integral to the computation hence part of the analyses was conducted with the assistance of spatial data team at UN-Habitat, Nairobi.

f) **Difficulties in accessing public data** from various stakeholders.

2.4 Findings and Interpretation of the CPI for Francistown

This section assesses the prosperity of Francistown using and interpreting the CPI results.

Data Challenges:
- Unavailability of Data at city level
- Inaccessibility of Data
- Inappropriate data storage methods

Figure 6: Francistown City Prosperity Index (CPI)
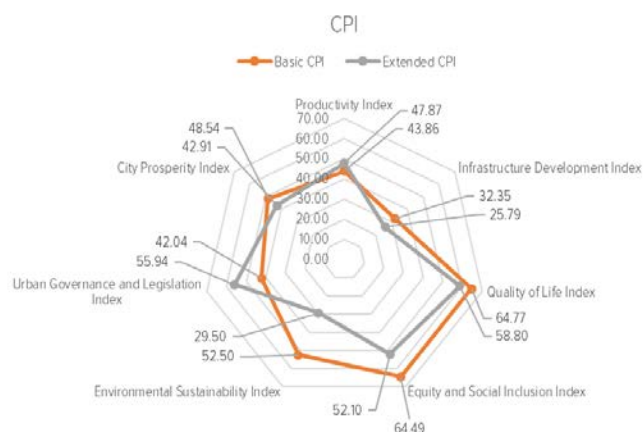
2.4.1 Overall CPI for Francistown

The City of Francistown has an overall score of 48.54 under basic CPI and 42.91 for extended CPI, indicating that the City is rated as having a weak prosperity for both basic and extended CPI (Figure 6). There is therefore a need to examine and address the causes of such low prosperity.

Table 2 shows a summary of the CPI dimensions for Francistown in 2018. Generally, data shows that the City performed well in the basic CPI as opposed to the extended CPI. Looking at the basic CPI, the main strengths lie with Quality of Life, and Equity and Social Inclusion dimensions, which are both moderately solid. These factors are important areas of opportunity for Francistown and should be strengthened further to ensure they contribute better to the city's prosperity.

The weakest link both for basic and extended CPI is the Infrastructure Development dimension, which according to the scale of prosperity is on the lowest range measuring "very weak". It is worth noting that Productivity, Environmental sustainability and Urban and Legislation dimensions have also performed poorly under both basic and extended CPI.

Table 2: A summary of Francistown CPI Indices

CITY PROSPERITY INDEX	BASIC	PROSPERITY SCALE	EXTENDED	PROSPERITY SCALE
Productivity Index (P)	43.86	Weak	47.87	Weak
Infrastructure Development Index (ID)	32.35	Very Weak	25.79	Very weak
Quality of Life Index (QOL)	64.77	Moderately Solid	58.80	Moderately Weak
Equity and Social Inclusion Index (ESI)	64.49	Moderately Solid	52.10	Moderately weak
Environmental Sustainability Index (ES)	52.50	Moderately weak	29.50	Very weak
Urban Governance and Legislation Index (UGL)	42.04	Weak	55.94	Moderately weak
Overall City Prosperity Index	48.54	Weak	42.91	Weak

Source: as in table 1 / Calculations from authors.

The Wheel of Prosperity calls for a good balance in the performance of all dimensions in order to achieve prosperity hence the need for a holistic approach in addressing the weak performance of Francistown.

The analysis in the next sections will dissect all the six dimensions of prosperity and identify areas of strengths and weaknesses for appropriate interventions.

2.4.2. Productivity Dimension

This section discusses the city's ability to contribute to its economic growth and development, creation of income generating opportunities, creation of employment and equal opportunities that further provide adequate living standards for the entire population. Three sub-dimensions which are: economic strength, economic agglomeration and employment were measured under this dimension.

In terms of productivity, Francistown has a weak score of 43.86 for the basic CPI and 47.87 for the extended CPI, which is mainly driven by poor performance under economic strength and economic agglomeration.

Figure 7: Productivity Indexes for Francistown, 2018
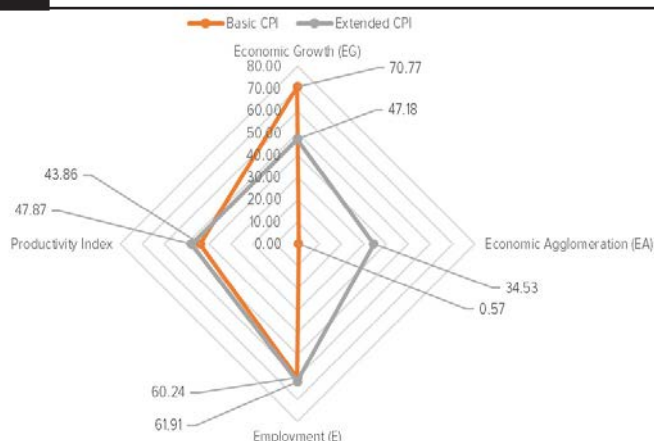
There are some weak areas under these sub-dimensions, which need to be addressed to make the city's productivity structure balanced (Figure 7).

Francistown performs well on economic strength due to low dependency ratio and relatively low city product per capita.

Table 3: Productivity Index- Indicator Performance

SUB-DIMENSION	INDICATOR	UNIT	VALUE	SCALE INTERPRETATION	
				BASIC	EXTENDED
Economic strength	City product per capita	US$ Per Capita	10,555.97	Solid	Weak
	Old age dependency ratio	# per 100 active population	4.0		
	Mean household income *	US$ Per Household (PPP)	644.2		
Economic agglomeration	Economic density	US$ /km2	4,888,083.6	Very weak	Very Weak
	Economic Specialization	Dimensionless (value between 0 and 1)	0.125		
Employment	Unemployment rate	%	15.90	Moderately solid	Moderately solid
	Employment to Population ratio	%	58.90		
	Informal employment	%	33.23		
*This indicator is not used in the basic CPI					

Source: as in table 1/ Calculations from authors.

Table 3 below shows the performance of Francistown in the productivity dimension, with data suggesting that Francistown scores well on employment but poorly on economic strength and economic agglomeration. In fact, using the basic CPI, the city performs well on economic strength due to low dependency ratio and relatively low city product per capita. However, due to a very low mean household income - the city eventually scores poorly when using the extended CPI.

In 2017, there were 4 people aged 65 years + per 100 people aged 15-64 in Francistown. This shows that the economic burden on the working age-group is low, which is favorable for strong economic growth.

This could be attributed to lack of diverse economic activities in the city and closure of some economic activities (beef industries, mining sector, and textile industries). There is need for robust and diverse initiatives to improve the weak links in this dimension. Action plans and deliberate efforts that promote industrialisation and clustering of economic activities should be adopted. In addition, the city has very poor mean household income and weak economic specialization. However, the City has a low old age dependency ratio of 4, which means there are 4 people aged 65+ for every 100 people aged 15-64. The economic burden on the working age group is therefore low, which is favourable for strong economic growth. On the other hand, the lower old age dependency could be attributed to the fact that culturally when people reach old age, they usually prefer staying in the rural areas, cattle posts and lands instead of staying in towns and cities.

The weak economic agglomeration is mainly driven by low spatial distribution of productivity (economic density) and low economic specialization. The widespread urban sprawl in the city may have the effect of lowering productivity per unit area of a city. As the dominant administrative and commercial hub in the North, Francistown is the pivot of markets, commercial enterprises, large scale industries and innovation.

Data from Statistics Botswana suggest that main economic activities in the city include: Transport and Storage which contributes 11.3% to the country's GDP, Electricity, Gas, and Air Conditioning Supply contributing 15.6% to country's GDP, Wholesale Trade contributing 8.5 % of the country's GDP amongst others. Improving the economic density and specialization will contribute towards high city product per capita and enhance household income.

In general, it is acknowledged that Botswana's relative success in spurring relatively strong economic growth has been pegged to high public investments and its diamond reserves that may not last forever. Efforts already undertaken by the national authorities to diversify its economic base to achieve sustainable development and prosperity for all should be strengthened. A diversification strategy that ensures the economy is less dependent on government spending but boosts the private sector to take on a more dominant role in the economy will benefit the city. This means improving economic infrastructure as well as augmenting skilled manpower in the country. In addition, job creation strategies should be intensified to secure livelihoods.

Overall, the employment sub-dimension scores moderately well under both basic and extended CPI, which is mainly driven by relatively low unemployment rate and informal employment and relatively high employment to population ratio. The low informal employment (33 in informal employment for 100 adult population)means that the city's economy is mainly formal, which is favourable to productivity, adequate incomes and working conditions for its labour force.The Employment to Population Ratio (EPR) is an indicator that reflects the ability of the economy to provide employment to its population.

For Francistown, the EPR is average (59 employed for 100 adult population) i.e. the city has a moderate ability to create jobs for its population.

However, this alone is not enough to assess the level of decent work in the city or its deficit. It may be useful to examine earnings, hours of work (full or part-time jobs), and quality of jobs to have a better idea of labour market conditions in city.

2.4.3 Infrastructure Dimension

Infrastructure development is core to the development of a prosperous city. The infrastructure dimension measures how cities use available resources to deploy a functional and efficient infrastructure. Infrastructure assets and services such as road networks, piped water, housing, sanitation, electricity, health facilities and ICT are essential in supporting people's livelihoods, the economy and bettering the overall quality of life.

Overall, under the infrastructure dimension, Francistown scores 42.19 under basic CPI and 29.73 under extended CPI (Figure 8). This is mainly driven by poor performance under all sub-dimensions except housing infrastructure which performs very well, suggesting that housing conditions are generally good in Francistown.

11.3%
Contribution by Transport and Storage activities to the Botswana's GDP

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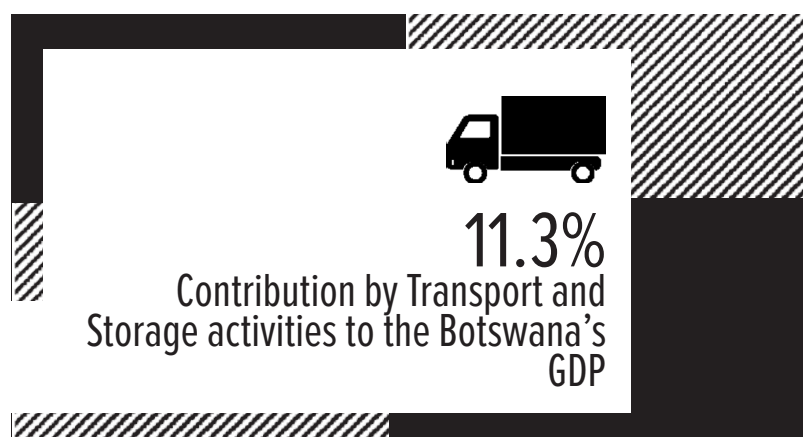
[2]Economic agglomeration –or agglomeration economies are the benefits, savings or (average) cost reductions that come when firms and people locate near one another together in cities and industrial clusters (UN-HABITAT, 2012).
[3]Economic Specialization-the indicator shows the level (high or low) at which a city concentrates its economic activities on certain goods and services (UN-HABITAT, 2012).

There are therefore weak indicators, which need to be improved as a matter of priority and the strong factors, which need to be maintained to attain some balance as well as achieve higher levels of prosperity. Some of the indicators, which need urgent attention include the following: population density, number of public libraries, physician density, access to internet and home computers, internet speed, mass transport system, affordability of public transport, use of public transport and land allocated to streets. (Table 4) This calls for prioritization of urban policies that support infrastructure developments.

Housing infrastructure index is the strongest link in this dimension; however, this is offset by social infrastructure, ICT, urban mobility and street connectivity that performed very low, all rating very weak in the scale of prosperity. Housing Infrastructure is performing well as evidenced by high levels of improved shelter (93.2 out of 100 households live in durable houses), very good access to improved water, sanitation and sufficient living area. This is mainly attributed to housing programmes targeting the low-income households and upgrading of low-cost neighbourhoods. However, there is still a challenge of non-connection of water and sewer in some areas.

93.2%
Percentage of households in Francistown living in durable housing which is a result of low-cost housing and upgrading programmes

Figure 8: Infrastructure Indexes for Francistown, 2018
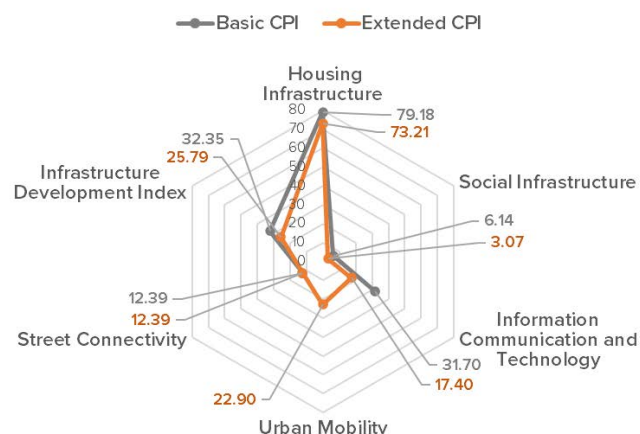
The continued use of pit latrines in urban areas is undesirable as it contravenes the urban development standards. Most of the indicators under housing infrastructure are very strong except low population density in residential areas, which may also be associated with urban sprawl in the city; hence the need for compact developments.

Urban mobility, ICT, street connectivity and social infrastructure performance are a cause of concern for the City. Social infrastructure indicators are the weakest; the city has got only one (1) public library compared to its large population and very low physician density (2 physicians per 1,000 people). The city has inadequate ICT infrastructure, with very low access to the internet (31.7%), low ownership of home computers (20.5%), and weak internet speed making internet usage costly to the public.Urban mobility performs poorly but the performance is only based on data on traffic fatalities due to lack of data for the other indicators. It is hence necessary to incorporate the urban mobility indicators in surveys and data management systems. The city scores poorly on street connectivity due to low levels of share of land allocated to streets, and poor street density.

Table 4: Infrastructure Development Index

SUB-DIMENSION	INDICATOR	UNIT	VALUE	SCALE INTERPRETATION	
				BASIC	EXTENDED
Housing	Improved shelter	%	93.20	Solid	Solid
	Access to improved water	%	98.30		
	Access to improved sanitation	%	99.30		
	Access to electricity	%	79.40		
	Sufficient living area	%	91.50		
	Population density (inhabitants/km²)	# / Km²	577.00		
Social Infrastructure	Physician density	# / 1,000	0.07	Weak	Very weak
	Number of public libraries	# / 100,000 people	0.91		
ICT	Internet access	%	31.70	Very weak	Very weak
	Home computer access	%	20.50		
	Average broadband speed	Kbps (Kilobytes per second)	0.26		
Urban Mobility	Traffic fatalities*	# / 100,000 people	24.13	-	Very weak
Street Connectivity	Street intersection density	# / Km²	18.94	Very weak	Very weak
	Street density	Km / Km²	3.48		
	Land allocated to streets	%	6.25		

*This indicator is not used in the basic index

Source: as in table 1 / Calculations from authors.

2.4.4 Quality of Life Dimension

Quality of Life dimension is an important determinant of a city's prosperity as it measures its achievement in terms of provision of important amenities such as social services, education, health, recreation, and safety and security. These are key elements of a high standard of living that enable citizens to maximize their individual potential and lead long fulfilling lives.The Quality of Life index is 64.77 as per the basic CPI and 57.81 for the extended CPI, which is rated moderately solid and moderately weak respectively, according to the scale of prosperity.
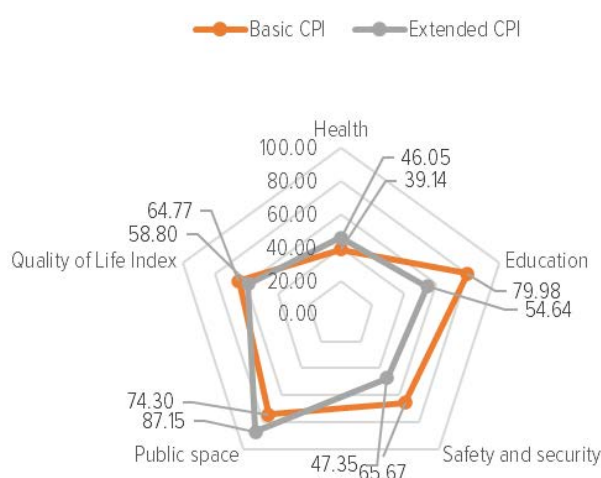
Figure 9: Quality of Life Indexes-for Francistown, 2018

Table 5: Quality of Life Index

SUB-DIMENSION	INDICATOR	UNIT	VALUE	SCALE INTERPRETATION BASIC	SCALE INTERPRETATION EXTENDED
Health	Life expectancy at birth	Years	66.80	Very Weak	Weak
	Under-5 mortality rate	# / 1,000 live births	56.00		
	Vaccination coverage*	%	76.80		
	Maternal mortality ratio*	# / 100,000 live births	143.2		
Education	Literacy rate	%	94.40	Solid	Moderately weak
	Mean years of schooling	Years	9.3		
	Early childhood education*	%	43.50		
	Net enrolment rate in higher education*	%	15.1		
Safety and security	Homicide rate	# / 100,000 inhabitants	12.73	Moderately solid	Weak
	Theft rate*	# / 100,000 inhabitants	2,318.48		
Public space	Accessibility to open public areas	%	74.3	Solid	Very solid
	Green area per capita m²/inhabitant*	m² per inhabitant	84.33		

*This indicator is not used in the basic index

Source: as in table 1 / Calculations from authors.

Good performance in terms of quality of life is mainly driven by good achievements under education, safety and security and relatively high access to public spaces

The high rating on the basic CPI is driven by good performances under education (high literacy rate and means years of schooling), safety and security (low homicide rate) and relatively high access to public spaces (Table 5). The overall score was weakened under the extended scale due to poor performance under the health (relatively high under5 and maternal mortality[4] and moderate vaccination coverage), education (low access to early childhood education and low enrolment in higher education) and safety (relatively high theft rate) sub-dimensions. It is worth noting that the sub-dimension on public spaces was improved by a very good performance of the city in terms of green area per capita.

[4]Note that these are national figures. Using administrative data from the City level may be biased as the City houses the Nyangabgwe hospital which is the only referral hospital serving the whole northern region hence recording most under-five and maternal deaths both referred to and those originating from the City.

BOX 1

Contribution of Open spaces and green areas to the quality of life in Francistown

Despite its typically semi-arid weather, Francistown City has a considerable proportion of its area as open spaces. The green area per capita for the city is 84.33 m²/inhabitant which surpasses the CPI threshold of 15 m²/inhabitant. Additionally, there are numerous green areas that are open for public use. As a result, a high proportion (84%) of its population has access to open spaces within 400 meters walking distance. This provides a huge boost to the Quality of Life (QoL) dimension of the city's CPI.

The performance of this indicator is however threatened by urban expansion, which is solely happening at the expense of green areas. The analysis of urban expansion shows that a sustained trend will eliminate much of the green areas in the near future, particularly in the sub-urban areas around Francistown. To effectively caution against reduction of open spaces and green areas, there is need for deliberate efforts towards ecosystem conservation and public spaces protection.

*Map 4 Contribution of Open spaces and green areas to the quality of life in Francistown*
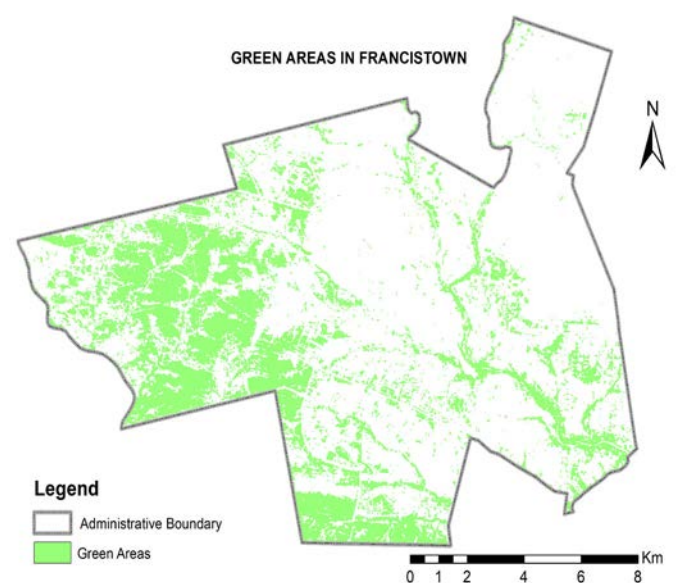
The map above shows the distribution of open public spaces and other green areas in Francistown city.

Sustained decrease in the cover of open spaces attributed to urban expansion will eliminate much of the green areas in the near future, particularly in the sub-urban areas around Francistown.

Figure 10: Equity and Social Inclusion Indexes for Francistown, 2018
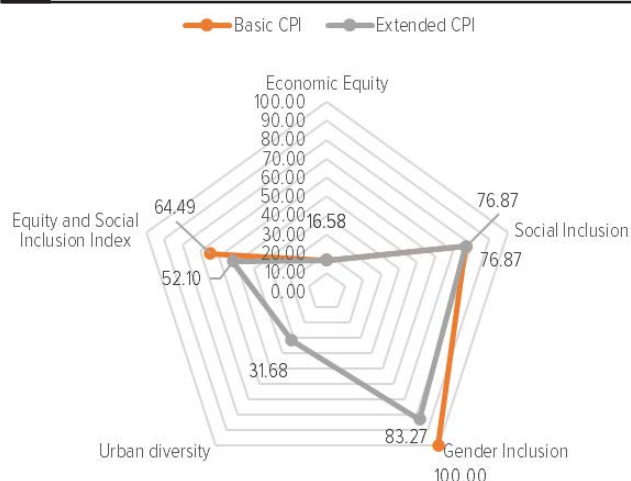
2.4.5 Equity and Social Inclusion Dimension

Equity and inclusion are crucial in leaving no one behind. A city is prosperous if income inequality, slum households and gender inequality are low. Overall, the equity and social inclusion is the second-best performing dimension of the City's prosperity. The City has a moderately solid performance under basic CPI (64.47) but moderately weak under extended CPI (52.10). The highest scores are in the Gender and Social inclusion sub-dimensions, which are solid, both for basic and extended CPI. These achievements should be strengthened as efforts are made to improve the low economic equity sub-dimension, which scored very weak.

The high level of economic inequity in Francistown is mainly attributed to high levels of income and expenditure disparities (high Gini coefficient) and relatively high poverty levels. On the positive side, Francistown performs well in terms of social inclusion due to low slum households despite a relatively high youth unemployment rate. This calls for intensification of job creation and youth economic empowerment programs and effective poverty eradication strategies.

The gender inclusion sub-dimension performed well in both the basic and extended CPI at 100 and 83.27 respectively, The gender inclusion sub-dimension performed well in both the basic and extended CPI at 100 and 83.27 respectively, due to equitable access to secondary school between boys and girls, and relatively high presence of women in local workforce. The lower extended CPI rating is attributed to the low representation of women in local government. Therefore, there is need for policies that will enhance equitable and fair representation of both men and women. The City in its Full Council of 30th August 2018 signed a Gender Equality Statement of Commitment as a way of facilitating achievement of this indicator. The land use mix also has performed poorly, standing at 0.51 which means that the mixing of land uses within a square kilometre is not optimal. It is therefore necessary to put in place planning reforms that will encourage both horizontal and vertical mixing of land uses in an area.

Table 6: Equity and Social Inclusion Index

SUB-DIMENSION	INDICATOR	UNIT	VALUE	SCALE OF INTERPRETATION	
				BASIC	EXTENDED
Economic equity	Gini Coefficient	Dimensionless (value between 0 and 1)	0.67	Very weak	Very weak
	Poverty rate	%	9.40		
Social Inclusion	Slum households	%	9.20	Solid	Solid
	Youth unemployment	%	28.2		
Gender Inclusion	Equitable secondary school enrolment (ratio)	Dimensionless	1.00	Very solid	Very Solid
	Women in local government*	%	26.00		
	Women in local workforce*	%	48.90		
Urban diversity	Land use mix*	Dimensionless	0.51	Very weak	Very weak

*This indicator is not used in the basic index

Source: as in table 1 / Calculations from authors.

Figure 11: Environmental Sustainability Indexes, 2018
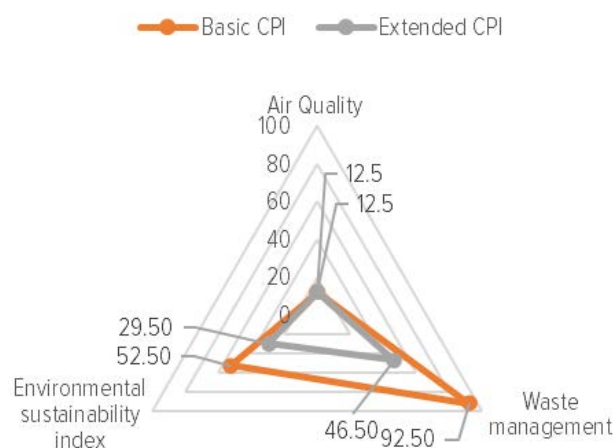
The very-poor score under extended CPI is mainly due to a weakened score under waste management once the indicator on share of waste recycled is included in the calculations. This shows that the city generally performs poorly in keeping a balanced and sustainable environment; which gives it a weak rating as the second weakest link over all other dimensions.

The City is doing well in terms of access to collection of solid waste as 92.5% of the city's households enjoy this service, however it is worth noting that there is need to establish the total volume of waste generated by the city. Although waste collection is very well managed, waste recycling needs to be emphasized to improve environmental sustainability. The City has an opportunity to implement the 3R's initiative (reduce, reuse, recycle) with assistance of their twinning partners from the Municipality of Genk which is doing well on this aspect.

2.4.6. Environmental Sustainability Dimension

Environmental sustainability is a key component of sustainable development. Prosperous cities ensure that as they grow and develop economically, their environment is not degraded but remains healthy and liveable; and natural assets and resources are preserved for future generations. The Environmental Sustainability index has a moderately weak score of 52.50 under basic CPI and very weak score (29.50) under extended CPI (Figure 11).

The city currently has six (6) companies which are engaged in recycling of which three (3) are recycling cardboard, tin and plastic, while three (3) are recycling scrap metal.The city also performed poorly in monitoring air quality. The city only two monitoring stations, which only measure availability of Sulphur dioxide and nitrogen in the air. Deliberate efforts should be made to install measuring equipment that will capture level of particulate matter and carbon dioxide emissions as the City is already facing challenges with its air quality (even disturbing visibility for easy movement of aircrafts).

Table 7: Environmental Sustainability

SUB DIMENSION	INDICATOR	UNIT	VALUE	SCALE OF INTERPRETATION	
				BASIC	EXTENDED
Air quality	Number of monitoring stations	#	2.0	Very weak	Very weak
	CO_2 emissions* (national)	Metric tons of CO_2 per capita	43.42		
Waste management	Solid waste collection	%	92.5	Very solid	Weak
	Solid waste recycling share *	%	0.25		
*This indicator is not used in the **basic** index					

Source: as in table 1 / Calculations from authors.

2.4.7 Governance and Legislation Dimension

Governance and legislation are key elements of orderly and prosperous cities and sustainable urbanization. Citizens are empowered when structures are put in place for effective participation in decision-making and planning. Finance is also important in ensuring that local authorities have autonomy. A prosperous city seeks to increase civic participation to foster democracy and align policy and government actions with the needs and the will of all its residents (UN-HABITAT, 2012).It is characterised by i) high level of public participation, ii) robust municipal financing, efficient and effective institutional capacity and iii) and iv) orderly urban expansion.

The urban governance and legislation dimension is one of the averagely performing dimensions. As shown in Figure 12, it is the only dimension where the extended CPI (55.94) is greater than the basic CPI (42.04). The low ranking of the basic CPI is attributed to low financial capacity of local authorities, voter apathy and poor access to information by the city residents which impedes community participation and engagement in the development of the City. The improvement in the extended CPI is mainly driven by better scores in municipal finance and institutional capacity, notably a low subnational debt and high local expenditure efficiency.

As indicated in Table 8, the city has low scores for all almost all the indicators except sub-national debt and local expenditure efficiency, and land use efficiency which is rather fair. It is therefore necessary to intensify developments as advocated for by the Francistown Revitalization Plan which seeks to ensure a more balanced, compact and sustainable city with emphasis on densification, re-development of existing areas and greater mixing of compatible land uses.

While 92.5% of household waste in Francistown is collected, more interventions are needed in waste recycling

Figure 12: Governance and legislation Indexes for Francistown, 2018
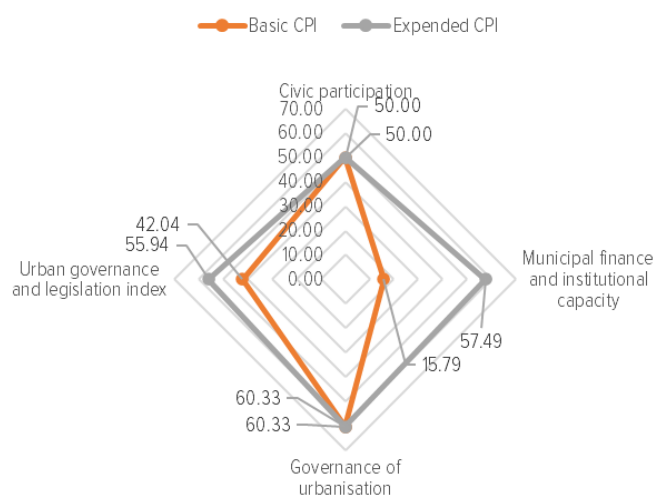
The City is surrounded by freehold farms and has been observed to be expanding into them. There is need to ensure that the expansion of the city is controlled for efficient land use, as currently the city's land use efficiency ratio stands at 1.19, which may not be optimal. Revenue collection is poor probably because Councils depend on central government for funding. The number of days needed to start a business (48 days) is extremely high and needs to be reduced.

Public participation is the weakest link as evidenced by low voter turnout which according to Professor Zibani Maundeni, in his analysis paper on "Voter Education and Some Electoral Issues in Botswana – 2004 and 2014 compared"; is attributed to lack of sensitization and education on the importance of voting. However, on a positive side, it has been observed that while urban centres used to register more men than women, the trend was reversing. For instance, Francistown had registered 11685 men to 11017 women in 1999, increasing to 12,510 men compared to 13,662 women in 2004, and 17,094 women to 15,819 men in 2009 (Maundeni, 2015), and subsequently to 18,085 women compared to 16,827 men in the last elections of 2014 (Independent Electoral Commission, 2014). This presents an opportunity for inclusion of women in the local government and decision-making processes.

Table 8: Governance and Legislation index

| SUB-DIMENSION	INDICATOR	UNIT	VALUE	SCALE INTERPRETATION	
				BASIC	EXTENDED
Civic Participation	Voter turnout	%	50.00	Moderately weak	Moderately weak
	Access to public information*	%	50.00		
Municipal finance & Institutional capacity	Own revenue collection	%	15.44	Very weak	Moderately weak
	Days to start a business	Days	48.00		
	Subnational debt*	%	1.20		
	Local expenditure efficiency*	%	101.6		
Governance of urbanization	Land use efficiency	Dimensionless	1.19	Moderately solid	Moderately solid

*This indicator is not used in the basic index

Source: as in table 1 / Calculations from authors.

Access to public information and ineffective public consultation processes and structures also contribute to low public participation. This can be attributed to the fact that citizen engagement process in Botswana is rooted in the consultative framework of the traditional 'kgotla[5]' democratic system of governance (Obasi & Lekorwe, 2014). This conventional method of public consultation and engagement has been seen to be unattractive to the youths and inconvenient in Cities. There is need to ensure that the City has an online platform that will promote active communication and feedback from the public. However, it is worth noting that the City currently has a Facebook page which keeps the community on board about services offered by the Council/municipality i.e. tenders running, decisions made on tenders, proposed local development plans, "kgotla" meetings, community service days and any other events held by Council.

Uploading of the most critical information on budgeting, spending, statistics etc., still needs to be improved. There is also the need to improve availability of public information on the City's website. Furthermore, there is need for paradigm shift so that planning is with the people, not for the people.

Good governance and legislation are vital to the success of any city. Increasing space for more citizen participation in electoral processes, access to information and strengthening public institutions to have proper accountability, checks, and balances can go a long way in making a city more and more prosperous.

[5]Traditional community meeting place presided by the Chief

BOX 2 | Urban Expansion in Francistown

Map 5: Built Up Area Trends in Francistown
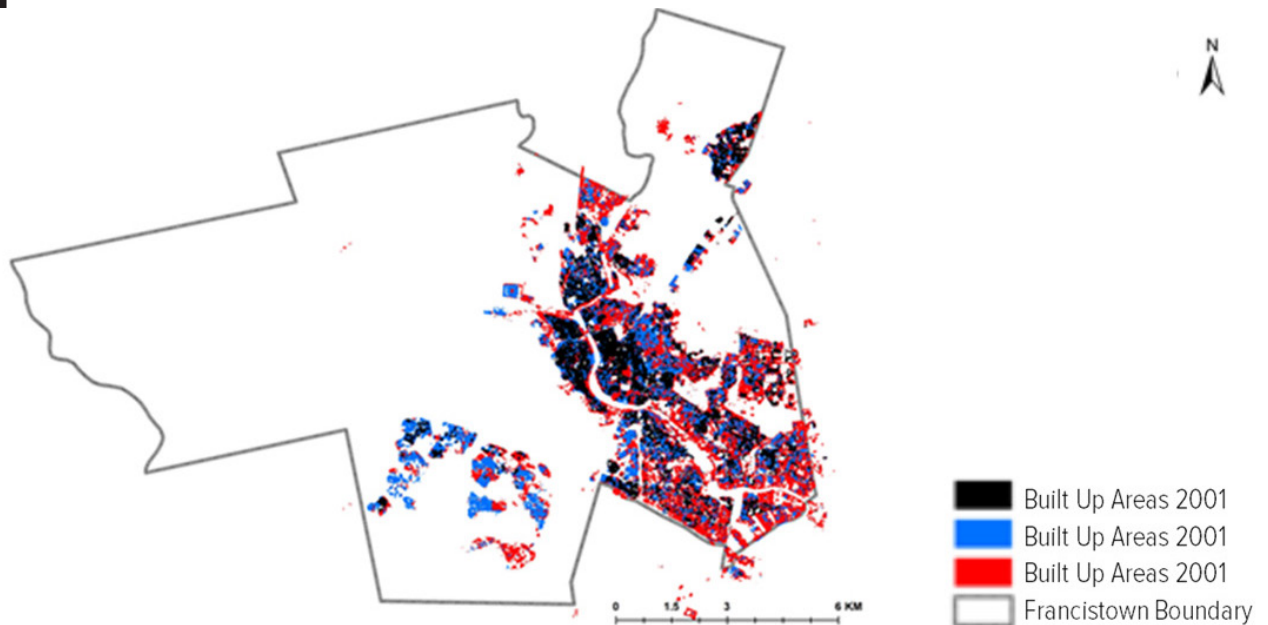
Built Up Areas 2001
Built Up Areas 2001
Built Up Areas 2001
Francistown Boundary

The map above shows the distribution of open public spaces and other green areas in Francistown city.

The City of Francistown has continually expanded with an outward sprawl. From 2001, the city grew east and southwards at an annual rate of 13.7%. A leapfrog development is observed on the Western part of the city (Gerald Estate) between 2001 and 2011. The city gained 21.44 km² and 15.75 km² between the years 2001-2011 and 2011-2017 respectively. It is notable that the city has been characterized by low urban densities and unrestricted sprawl. Spatial trends analysis show that while the city keeps sprawling, settlement density has been increasing, making the city more compact. While densities come with challenges such as traffic congestions in cities without mass rapid transit systems, it has for Francistown been desirable for economical provision of services.

At present, the urban cluster, as defined by the urban extents approach – a Global urban definition approach that defines the city based on the densities and proximity of built up areas – had expanded outside the administrative city boundaries. Based on experts' local knowledge, the city's suburbs are more attractive for new settlements because rents and cost of living are relatively lower. As such, it is expected that the city will sprawl further outward while the densities at the core could remain unchanged or gradually reduce. This calls for city suburban planning, particularly with emphasis to density management, provision of amenities, open spaces and trunk infrastructure.

Chapter 3: Conclusions And Recommendations

The application of the CPI in Francistown reveals prevailing conditions using about 57 indicators, which constitute invaluable data to planners, policy makers and any stakeholders involved in decision-making, both for Francistown local authority and the national government. In general, different trends were observed with the city performing well in some dimensions and poorly in others.

Overall, the city of Francistown has moderately weak prosperity that needs to be strengthened, with large discrepancies among the six dimensions of Urban Prosperity and therefore an unbalanced urban development process, probably due to institutional and structural weaknesses. Quality of Life and Equity & Social Inclusion are moderately solid for basic CPI; however, it is important to strengthen these dimensions as they are moderately weak for extended CPI. On the other hand, there is need to rethink policies on infrastructure, environmental sustainability and urban governance. To effectively manage the urbanization process and bring change in all sectors, there is need to develop a National Urban Policy to harness opportunities created by cities. In addition, there is need to develop local monitoring with national reporting systems, including governance mechanisms of data production, use, and dissemination. There is an urgent need to establish the national urban observatory.

> *The city of Francistown has moderately weak prosperity that needs to be strengthened, with large discrepancies among the six dimensions of Urban Prosperity*

The key findings and recommendations under each dimension are as follows:

3.1 Productivity

The productivity dimension has low average value due to weak economic agglomeration as evidenced by low economic density and specialization. This can be attributed to low industrialization and low production of goods and services. There is need to strengthen implementation of the available economic diversification strategies. Improving productivity is a critical starting point to provide residents with decent income for their basic needs and adequate living standards. The implementation of the Francistown investment strategy called Vision 2022: An Investment Centre of Vibrancy, which is aimed at diversifying economic activities in the city should be strengthened. The Strategy recognizes the value proposition for Francistown to be transformed into a Mining,

Transport and Logistical Hub and it took into consideration the strategic location of Francistown as a gateway to other African Countries (Zimbabwe, Zambia, Angola, Namibia, Democratic Republic of Congo, etc.) in its northern border and the northern side of the country. The Strategy further took into consideration the existing and planned infrastructure which includes the airport, the road linking to the Kazungula Bridge and the railway connecting to Mosestse-Kazungula rail project.This will open opportunities to other economic activities hence reduce reliance on minerals extraction, textile and beef industries, which have proven not to be sustainable in the long run as some ended closing up due to insufficient market and economic instability.

Over and above that, the City has been a pilot for the Local Economic Development (LED) project, harnessing the opportunities for implementation of this model will contribute to economic diversification.

Francistown, being a dominant administrative and commercial hub in the northern region, is a base for most of higher institutions of learning and specialized health facilities in the northern side of the country. This presents an opportunity for higher levels of education and lower incidences of chronic illness which in turn would contribute to higher labour productivity. The City also has a youthful population which can be leveraged for development of innovation centres.

3.2 Infrastructure Development

Infrastructure is crucial for the development, functioning and prosperity of cities. It provides the underlying foundation for cities to thrive. Physical infrastructure such as road network, power and communication facilities all enhance urban mobility, which is essential for economic growth and poverty reduction. Good infrastructure is vital in making firms more productive and competitive internationally, and critical to the ability of countries and cities to reap the benefits of globalization as it is central to the behind the border agenda, enhances the investment climate in the city, improves the productivity of workers, and contributes to the overall attractiveness of the city. Conversely, poor infrastructure is a major impediment to growth, poverty reduction and improved standards of living. Inadequate water and sanitation facilities will lead to deterioration of the urban environment (Arimah, 2007). As such, the fact that Francistown performs poorly on this dimension is a major impediment to prosperity for the city and the country at large.

Francistown has both low street connectivity and poor internet access, which is a deterrent to increased productivity and economic growth Given that Francistown is relatively a small city, improving internet access can open the city to wide opportunities for investment both locally and internationally. This will hugely contribute to making Francistown a smart city, with associated benefits such as high employment opportunities for the youthful population, improvement of efficiency in production and trading (e-commerce), and increased connectivity. Francistown should fully implement the objectives of the Francistown Revitalization Plan which advocates for improved street connectivity, permeability and pedestrian movement through interlinked open spaces. The plan presents a great opportunity for densification through compact developments.

Although the dimension has performed poorly, it has one of the strongest factors of prosperity in terms of the Housing infrastructure which needs to be strengthened and maintained. There is need to strengthen implementation of housing policies particularly in low-income areas to achieve durable housing units with access to clean water and improved sanitation.

There is an urgent need to formulate and implement policies that promote urban mobility. The implementation of the Botswana Integrated Transport Plan which seeks to promote access and utilization of convenient and reliable public should be fast tracked.

Francistown performs poorly in terms of the infrastructure dimension which is a major impediment to prosperity for the city and the country at large.

objectives of the Renewable Energy Strategy and the Off-Grid Solar Action Plan to ensure uptake of the renewable to the energy mix meets the targeted 15% country target by 2030.

3.3 Environmental Sustainability

A prosperous city is one that demonstrates the ability of its biosphere and human civilization to coexist; engaging in economic activities and city growth without degrading the environment. . While Francistown is a green city, it has been observed to be lacking in terms of its reactiveness in preserving its environmental quality. The city has inadequate air quality monitoring station; the City should therefore provide monitoring stations for PM 2.5 concentration and carbon dioxide emissions. The city is known to have poor air quality; according to the Department of Waste Management & Pollution Control in its May 2019 report; the air is observed to be smoky and cloudy even disturbing air transportation movement in the City. It is recommended to upgrade the existing monitoring stations to measure all criteria pollutants and establish new stations in the city's outskirts.

The city is also performing poorly in solid waste recycling share and there is a need to develop the City Waste Collection Management Strategy which will address both collection and the 3R's initiative (reduce, re-use, re-cycle). The City of Francistown could leverage on its twinning opportunities with the City of Genk in Belgium which is well ahead in terms of solid waste management and recycling initiatives. It is recommended that the City introduces reclaiming of some waste but also community incentives for recycling of waste, and public education on waste management. Despite the City experiencing sunny weather almost throughout the year, it has not adequately exploited the opportunity of using solar as a source of energy.

It is therefore of paramount importance to implement the

3.4 Quality of Life

A prosperous city provides social services for enhanced living standards and provides the things that are needed for a good quality of life like safety and security, education, health, and recreation, enabling the population to live healthier, productive and fulfilling lives. The quality of life dimension is the best performing dimension in the city compared to the other dimensions. However, it has potential health care and educational issues since the Under-Five Mortality Rate and Maternal Mortality Ratio are relatively high. In general, compared to countries with similar level of development such as Mauritius and Thailand, Botswana is not doing well in terms of survival of children and their mothers.

However, there is hope in addressing maternal health as Botswana at the ICPD25[6] Summit in Nairobi, made a commitment to reduce preventable maternal deaths to less than 70/100 000 by 2030. Another commitment made was with regards to strengthening access to family planning information and services, quality, affordable and safe modern contraceptives at all service delivery points through capacity building for health care workers on integration of family planning services from 350 to 1000 by 2030. To achieve this, there is need to rethink interventions and strategies to improve maternal and child health including South-to-South learning.

Although literacy rate is high, access to Early Childhood Education and net enrolment in higher education is very low.

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[6] 2019 marked the 25th anniversary of the International Conference on Population and Development where UN member states made commitments to addressing various population and development challenges at the Nairobi Summit in Kenya,

The low ECE rate is mainly attributed to unaffordability of the programme as it is mainly offered by private institutions. To increase access to early childhood education, there is need to intensify the implementation of the early childhood enrolment programme which was introduced in public schools in 2017. In addition, net enrolment in higher education needs to be improved.

Safety and security significantly contribute to a city's economy including promotion of a 24-hour economy. The city is still experiencing high rates of theft (2318 thefts per 100,000 inhabitants in the year 2017/18), which is a concern both for investors and the city's inhabitants. Data from UNODC show that in 2014, the rate of thefts for the whole country was 1336 per 100,000 population which is much lower that what is observed in Francistown in 2017 (UNODC, 2019). The introduction of the safer city concept whereby the city is under 24-hour surveillance through cameras could assist in containing theft incidences. There is need to ensure that safety considerations are integrated from planning stage through implementation of the UN-Habitat Safer Cities Programme. Furthermore, the review and implementation of the economic empowerment and poverty eradication strategies are important prerequisites of improved urban safety.

There is also need to improve health systems so as to improve physician density, which is undermined by relocation of physicians to other areas, especially outside the country in pursuit of better opportunities. This could be done through introduction of competitive remuneration packages to attract and retain the physicians in the city. It is also recommended that public libraries be increased to promote the culture of reading and hence contribute to the vision of a knowledge-based society. In addition, there is need to improve connectivity and permeability of the city's urban space to promote safe pedestrian movement and reduce traffic congestion. In addition, there is need to improve connectivity and permeability of the city's urban space to promote safe pedestrian movement and reduce traffic congestion.

This can be done as part of the ongoing process of redevelopment and revitalization of the city's urban form.

3.5 Equity and Social Inclusion

A prosperous city is one that ensures equitable (re)distribution of the benefits of prosperity, reduces poverty and the incidence of slums, protects the rights of minority and vulnerable groups, enhances gender equality, and ensures equal participation in the social, economic, political and cultural spheres. Although this is one of the dimensions where the City of Francistown is performing well, there are still inequalities in the distribution of income as evidenced by high Gini-coefficient (0.67) as well as high poverty rates. This calls for robust implementation of policies and programs geared towards poverty eradication and equal distribution of wealth for the benefit of all inhabitants. It is also necessary to achieve gender equality in the local government. The Gender Equality Statement of Commitment Plan of Action signed in August 2018 should be aggressively implemented.

The quality of life dimension is the best performing dimension in the city compared to the other dimensions despite the challenges of under-five and maternal mortality, low higher education net enrollment and high rates of theft.

3.6 Urban Governance and Legislation

A city that is characterized by effective urban governance, transformational leadership, effective policies, laws and regulation, adequate institutional frameworks which drive own revenue generation and actively engages its citizens and private sector in all decision making and city development is said to be sustainable and prosperous. Despite Botswana being recognized as a leading democracy in Africa; voter apathy, limited access to public information and civic participation in the city's development including in the planning and budgeting processes constrains effective engagement and participation. City managers need to be more responsive to the voices of their communities and civil society groups. They need to engage in more participatory urban governance by involving those likely to be affected by changes in policy or planning.

There is need to improve communication and feedback channels to adopt non-conventional public participation channels like social media which have been seen to be the "in thing" in improving public participation, particularly by the youth, as compared to the conventional public participation channels like the kgotla.
This calls for investment in efficient and effective internet connectivity which will always support unlimited public

participation, therefore fostering alignment of policy and government actions with the needs and the will of all residents.

Strengthening of local authorities to be autonomous through the adoption of the Decentralization Policy will also improve the ability of cities in terms of municipal finance and institutional capacity. The City is doing fairly well when it comes to land use efficiency, however there is need to promote the objectives of the Francistown Revitalization Plan which calls for compact developments and densification to reduce incidences of urban sprawl, unnecessary strains on urban service and infrastructure provision and reduced economies of agglomeration. There is also a need to intensify implementation of the newly adopted interventions for reducing time taken for doing business like the introduction of the online registration by Companies and Intellectual Property Authority (CIPA).

In summary, the increasing number of urban dwellers in Botswana provides a great opportunity to achieve sustainable economic growth and development, if authorities at local and national levels have access to relevant, timely, accurate and disaggregated data to inform the design and implementation of programmes and policies in order to maximize the dispersed energies and potential of urban centres for the common good of all. As such, data generated through the application of the CPI for the city of Francistown is useful to planners, policy makers and everyone involved in decision-making, both at national and local Governments. It will enable the city authorities as well as local and national stakeholders to gauge their performance and formulate inter-sectoral policy interventions.

However, the availability of data that is aligned to CPI indicators is a huge challenge. It may be necessary to include all CPI indicators in the National Monitoring and Evaluation System (NMES) for continuous monitoring.In addition, there is need to streamline data collection tools to CPI requirements and develop a data sharing strategy on urban indicators. In the interim, the CPI reports will need to be regularly updated, while modalities on the establishment of the National Urban Observatory are being finalized.

> There are still inequalities in the distribution of income in Francistown as evidenced by high Gini-coefficient (0.67) as well as high poverty rates. This calls for robust implementation of policies and programs geared towards poverty eradication and equal distribution of wealth for the benefit of all inhabitants.

These developments require a clear institutional and regulatory framework that will promote data sharing across sectors. Implementation of the National Spatial plan in terms of harmonization of administrative boundaries will contribute tremendously to collection of data on uniform areas of jurisdiction.

Furthermore, although the pilot project has helped improve the capacity in terms of generating city-level data in the two cities, there is need to reinforce capacitation and skills transfer through additional capacity building activities. It is also paramount to set up a research and/or data unit within the Council that is in-charge of collecting relevant data and generating evidence to help in decision-making in Francistown. Finally, the implementation of these recommendations requires dedicated budget that needs to be provided for by the relevant authorities.

Francistown is doing fairly well when it comes to land use efficiency, however there is need to promote the objectives of the Francistown Revitalization Plan which calls for compact developments and densification to reduce incidences of urban sprawl, unnecessary strains on urban service and infrastructure provision and reduced economies of agglomeration.

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Annexes

ANNEX 1

SDG 11 Indicators Update

Table 9: SDG Indicators Update

IDICATORS		Gaborone	Francistown	Cities/ Towns	Urban Villages	Rural Areas	National
4.1 Proportion of households ith access to basic services ater, sanitation, hygiene, ectricity, clean fuels, mobility, aste collection, healthcare, ducation, broadband internet) 017)	Water	95.5	98.3	96.5	98.2	91.0	95.0
	Sanitation	84.7	79.7	84.3	72.5	40.8	64.9
	Electricity	87.1	80.2	81.6	79.1	34.6	65.5
	Waste collection	98.7	92.5	96.6	48.3	22.1	50.9
	Internet Broadband	0.26	0.26				
1.1 Proportion of urban opulation living in slums, formal settlements or adequate housing (2017)	Durable floor material	96.6	98.4	97.5	96.5	71.3	88.1
	Durable wall materials	94.5	93.2	93.7	92.9	63.5	83.0
	Durable roof materials	96.3	98.4	95.5	98.9	98.0	97.8
	Durable structures	93.8	93.2	91.7	92.5	61.4	81.6
	Sufficient living area	93.1	92.4	92.2	86.0	82.4	86.3
	One shelter deprivation	5.7	5.7	6.1	9.3		8.1
	Two shelter deprivation	4.6	3.5	0.1	0.3		6.0
	Slum households	10.3	9.2	10.4	16.4		14.1
2.1 Proportion of population at has convenient access to ublic transport, by sex, age and ersons with disabilities (2017)		43.4					
3.1 Ratio of land consumption te to population growth rate 011 – 2017)		1.88	1.19				
7.1 Average share of the built- area of cities that is open ace for public use for all, by x, age and persons with sabilities (2017)	Share of the built-up area that is open space for public use for all (%) - 2018	22.4	10.0				
	% of population with access to open public space (within 400m walking distance to OPS) - 2018	66.5	74.3				

ANNEX 2   A summary of Francistown CPI Indices

Table 10: A summary of Francistown CPI Indices

	Basic	Rating	Extended	Rating
CITY PROSPERITY INDEX	48.54	Weak	42.91	Weak
Productivity Sub Index (P)	43.86	Weak	47.87	Weak
Economic Growth (EG)	70.77	Solid	47.18	Weak
Economic Agglomeration (EA)	0.57	Very weak	34.53	Very Weak
Employment (E)	60.24	Moderately solid	61.91	Moderately solid
Infrastructure Development Sub Index (ID)	32.35	Weak	25.79	Very weak
Housing Infrastructure (HI)	79.18	Solid	73.21	Solid
Social Infrastructure (SI)	6.14	Weak	3.07	Very weak
ICT Sub Index (ICT)	31.70	Very weak	17.40	Very weak
Urban Mobility (UM)	-	N/A	22.90	Very weak
Street Connectivity (SC)	12.39	Very weak	12.39	Very weak
Quality of Life Sub Index (QOL)	64.77	Moderately Solid	58.80	Moderately Weak
Health Sub Index (H)	39.14	Very weak	46.05	Weak
Education Sub Index (E)	79.98	Solid	54.64	Moderately Weak
Safety and Security (SS)	65.67	Moderately Solid	47.35	Weak
Public Space (PS)	74.30	Solid	87.15	Very Solid
Equity and Social Inclusion Sub Index (ESI)	64.49	Moderately weak	52.10	Moderately weak
Economic Equity (EE)	16.58	Very weak	16.58	Very weak
Social Inclusion (SI)	76.87	Solid	76.87	Solid
Gender Inclusion (GI)	100	Very solid	83.27	Very Solid
Urban diversity (UD)	-	N/A	31.68	Very weak
Environmental Sustainability Sub Index (ES)	52.50	Moderately weak	29.50	Very weak
Air Quality	12.50	Very weak	12.50	Very weak
Waste Management (WM)	92.50	Very solid	46.50	Moderately solid
Sustainable Energy	-	-	-	-
Urban Governance and Legislation Sub Index (UGL)	42.04	Weak	55.94	Moderately weak
Participation (P)	50.00	Moderately weak	50.00	Moderately weak
Municipal Finance and institutional Capacity	15.79	Very weak	57.49	Moderately Weak
Governance of Urbanization (GU)	60.33	Moderately solid	60.33	Moderately solid

ANNEX 3   Technical Working Team Members

Table 11: Technical Working Team Members

	NAME	ORGANISATION	EMAIL
01.	Grace Mphetolang	Statistics Botswana	gracempheto@gmail.com
02.	Gaokgakala Rabalone	DOH	grabalone@gov.bw
03.	Tirafalo Jongi'lizwe	COFC	tgabantebe@gov.bw
04.	Amutshilani Setoboli	DOH	asetoboli@gov.bw
05	Emmanuel Otukile	Statistics Botswana	eotukile@statsbots.org.bw
06.	Boago Mashadi	Statistics Botswana	boagomashadi@gmail.com
07.	Ditshupo Gaobotse	Statistics Botswana	Dgaobotse@statsbots.org.bw
08.	Kentse Raphukula	MFED	kraphukula@gov.bw
09.	Tshwaragano Mothibi	DTCP	tshbonang@gov.bw
10.	Boikhutso Tumisang	DTCP	btumisang@gov.bw
11	Bonolo P. Basebi	DOH	bbasebi@gov.bw
12	Kefilwe A. Selepe	DOH	angelaselepe@gmail.com
13	Bigboy Lefhoko	COFC	biglefh@gmail.com
14	Gabobofane Mbwe	COFCNO.	gmbwe@gov.bw
15	Abraham Malale	COFC	amalale@wuc.bw
16	Unami Moanga	COFC	umoanga@gov.bw
17	Auseuamo Ndjarakana	DRTS	andjarakana@gov.bw
18	Boitumelo Simane	DTCP	bsimane@gov.bw
19	Queenster Appiah	DTCP	qappiah@gov.bw
20	Boipuso Marope	DTCP	bmarope@gov.bw
21	Keemenao. Ketlogetswe	Botswana Police-Francistown	luckyketlogetswe@gmail.com
22	Luke Tekanyo	DNMM	Ltekanyo76@gmail.com
23	Nattash Maphane	COFC	nmaphane@gov.bw
24	Aone Phiri	DTCP	aomogonono@gov.bw
	Kaelo Khumo Masara	GCC	kramasara@gov.bw
26	Gofamodimo Gopolang	COFC	ggopolang@yahoo.com
27	Mark Batisani	Botswana Homeless & Poor People's Federation	uzielly1@gmail.com
28	Churchill Moruakgomo	COFC	cmoruakgomo@gov.bw
29	Kgalalelo Segwagwa	Deeds Registry	ksegwagwa@gov.bw
30	Donatien Beguy	UN-Habitat	donatien.beguy@un.org
31	Robert Ndugwa	UN-Habitat25	Robert.ndugwa@un.org
32	Thomas Chiramba	UN-Habitat	Thomas.chiramba@un.org
32	Dennis Mwaniki	UN-Habitat	dennis.mwaniki@un.org
33	Daniel Githira	UN-Habitat	Daniel.githira@un.org
34	Julius Majale	UN-Habitat	Julius.majale@un.org
35	Leandre Foster Ngogang Wandji	ECA	ngogangwandji@un.org
36	Thomas Sinmegn	ECA	sinmegn@un.org
37	Khogali Khogali	ECA	khogali@un.org

ANNEX 4

Definition of terms

City product per capita

The City Product Per Capita is the sum of the gross value added (wages plus business plus taxes less imports), or the total final demand (consumption plus investment plus exports), relative to the city's total population. The City Product Per Capita is calculated as the sum of the products of the national Gross Domestic Product (GDP) of each economic sector (primary, industrial and service) and the city's share of that sector's total employment, divided by total city population

Economic specialization

Refers to the agglomeration effects resulting from the clustering of industrial activities giving rise to an "industrial climate". It is usually as a way to gain greater degrees of productivity efficiency and take advantage of increasing returns of scale.

Improved housing

Proportion of households living in a durable housing unit, i.e. built on a non-hazardous location, and has a permanent structure adequate enough to protect its inhabitants from extreme climatic conditions such as rain, heat, cold, humidity.

Economic Agglomeration

This is the clustering of industries which results in efficiency due to reduction of costs of production and economies of scale.

Sufficient living area

Proportion of households with three or fewer people sharing a room. A room is defined as a space in a housing unit or other living quarters enclosed by walls reaching the floor to the ceiling or roof covering, or to a height of at least two meters, of an area large enough to hold a bed for an adult, that is at least four square meters.

Physicians Density

Number of physicians per 1,000 people, relative to the total city population.

Street Intersection Density

Number of street intersections per one square kilometer of urban area.

Women in local workforce

The share of women in the labor force is the share of female workers in the non-agricultural sector expressed as a percentage of total employment of the city (African Health Observatory, 2008).

Land use mix

Diversity of land use per square kilometer, within a city or urban area.

PM2.5

Annual mean concentration of particulate matter of less than 2.5 microns (PM2.5) in cities. PM 2.5 is used because of its greater health impacts. The estimates represent the average annual exposure level of the average urban resident to outdoor particulate matter.