

BETTER GROWTH, BETTER CITIES

Achieving Uganda's Development Ambition



A paper by the Government of Uganda and the New Climate Economy Partnership

November 2016



THE REPUBLIC OF UGANDA



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About this paper

The analysis in this paper was produced for the New Climate Partnership in Uganda research project, culminating in the report, *Achieving Uganda's Development Ambition: The Economic Impact of Green Growth – An Agenda for Action*. This National Urban Transition paper is published as a supporting working paper and provides a fuller elaboration of the urbanisation elements in the broader report.

Partners

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About the Partners

Economic Policy Research Centre

The Economic Policy Research Centre (EPRC) is an autonomous not-for-profit organisation, established in 1993 with a mission to foster sustainable growth and development in Uganda through advancement of research based knowledge and policy analysis. Since its inception, the EPRC has made significant contributions to national and regional policy formulation and implementation in the Republic of Uganda and throughout East Africa.

New Climate Economy

The Global Commission on the Economy and Climate, and its flagship project The New Climate Economy, were set up to help governments, businesses and society make better-informed decisions on how to achieve economic prosperity and development while also addressing climate change. It has been supporting a number of country governments including Columbia, China, Ethiopia and India.

Global Green Growth Institute

The Global Green Growth Institute is an international organization dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies. Established in 2012, at the Rio+20 United Nations Conference on Sustainable Development, GGGI is accelerating the transition toward a new model of economic growth – green growth – founded on principles of social inclusivity and environmental sustainability.

GGGI is an interdisciplinary, multi-stakeholder organization that believes economic growth and environmental sustainability are not merely compatible objectives; their integration is essential for the future of humankind.

Coalition for Urban Transitions

The Coalition for Urban Transitions is a special initiative of the New Climate Economy, made up of over 20 leading institutions across five continents who share a common purpose: delivering a better urban future for all. This includes leaders from think-tanks, research institutions, city networks, international organizations, major investors, infrastructure providers, and strategic advisory companies. The work of the coalition supports decision makers to unlock the power of cities for enhanced national economic, social, and environmental performance, including reducing the risk of climate change. The initiative is hosted by the WRI Ross Center for Sustainable Cities, and jointly managed with the C40 Climate Leadership Group.

Executive Summary

Uganda's urban population is currently just over 6 million, and growing at 5% a year. By 2040, the country's total urban population could reach 20 million.

Successfully managing the ongoing process of urbanisation will be a required condition for Uganda to become an upper middle-income country, as part of achieving its Vision 2040 agenda. However, as the country looks to deliver on its development commitments in the National Development Plan II (NDPII) by 2020, Uganda faces a number of immediate urban challenges. Historically, as high-income countries have developed, economic development has happened simultaneously with urbanisation. Yet in Uganda, like elsewhere in Africa, this relationship has largely broken down – “urbanisation without growth”. In addressing this imbalance, our analysis suggests that improved urban policy is not enough – correcting ongoing issues in the economy will be just as important for a successful urban transition.

Uganda's leaders understand that they will need to reconsider their growth model to deliver economic and social outcomes, at the same time as protecting natural capital, managing the impacts of climate change and using environmental policy to actually drive growth: a “green growth” model. At the request of the Government of Uganda, the New Climate Economy Partnership in Uganda was asked to improve understanding around the challenges and opportunities for green growth. The findings of this study are published in *Achieving Uganda's Development Ambition: The Economic Impact of Green Growth – An Agenda for Action*.

This paper now supplements the findings in that broader report, to provide a fuller elaboration of the urbanisation elements that will support Uganda's green growth. Global evidence demonstrates that a national urban transition can support better urban growth through compact urban growth, *connected* urban infrastructure and *coordinated* urban governance. Applying this focus to the national transition in Uganda, this report explores four questions:

- What are the challenge and opportunities for unlocking better urban growth in Uganda?
- What are the elements of a model of better urban growth which can support improved national development outcomes and long-term economic transformation?
- What are the potential net economic benefits of better urban growth?
- What urban infrastructure investments and national policy levers are necessary to support better urban growth in Uganda?

Main findings

Ongoing constraints are holding back Uganda's urban development potential in both the short and long term.

The next 15 years will be critical for Uganda in reaching Vision 2040 through harnessing the opportunities from a young and increasingly urbanised workforce. Relative to 2040, at least three quarters of the country's infrastructure, industry and urban areas are unbuilt, offering a “once only” opportunity to invest in the right kind of urban infrastructure now to avoid costly lock-ins.

However, challenges to making the most of this opportunity are prevalent. To date, growth in urban areas has been characterised by low-density, informal sprawl that challenges underserved urban centres with congestion, overcrowding and pollution, creating legacy costs. The rapid speed of urban change presents further challenges to urban authorities' ability to acquire land for much needed infrastructure investment in transport and housing, while also encouraging informality in the economy. Effective urban planning is also challenged by a lack of clear property rights, fiscal constraints, and the need for enhanced capacity in urban institutions.

A new urban growth model will encourage a more compact, connected national transition by 2040. It could increase access to basic services by over 33%, reduce aggregate infrastructure investment requirement by 11%, and reduce greenhouse gases by 27%.

Overcoming the current challenges to urban development could generate significant economic, social, and environmental benefits. This paper has compared business as usual urbanisation – an urban growth scenario which continues to be characterised by urban sprawl and under-investment in transport infrastructure – with a better urban growth scenario to promote green growth (see Figure ES1).

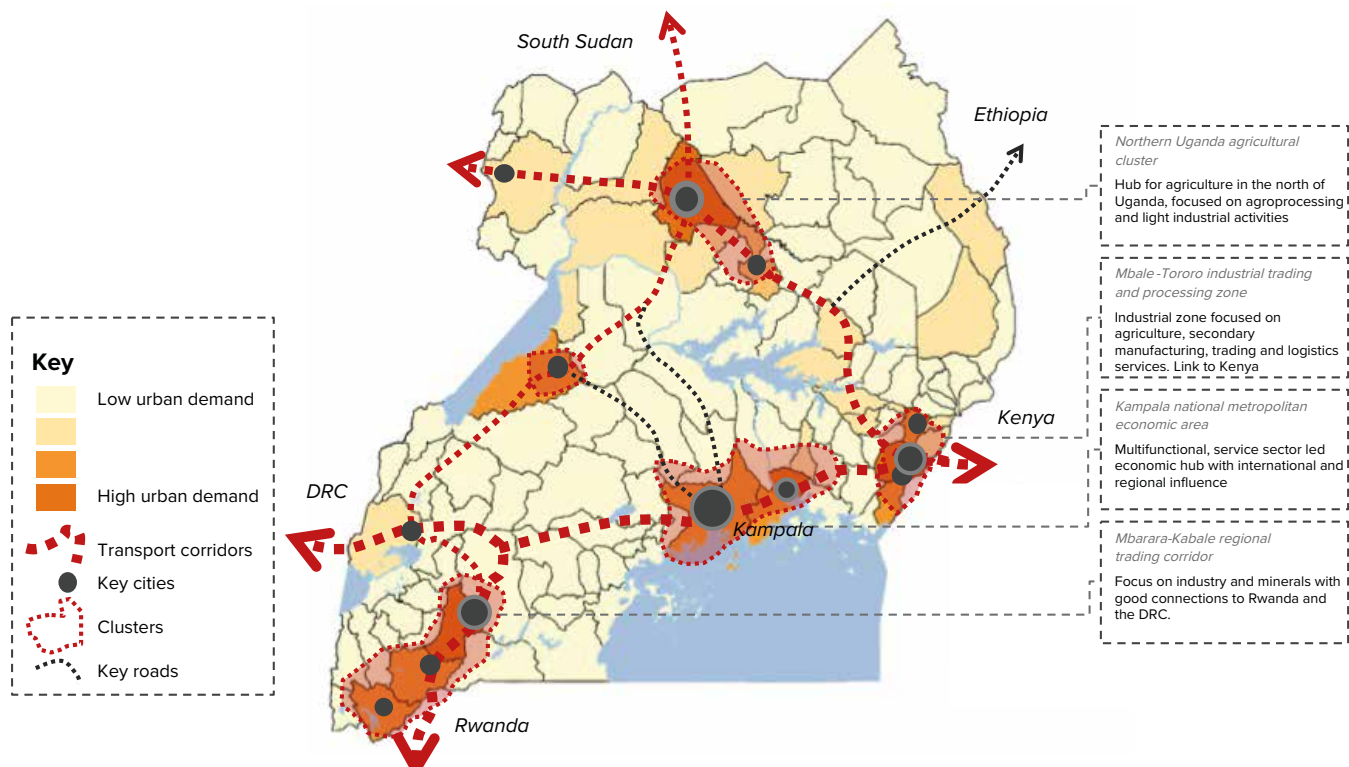
The government has recognised the urban opportunity and the need for reform. The Ministry of Lands, Housing and Urban Development launched the draft National Urban Policy in 2013. The plan is currently awaiting approval by Parliament, and a detailed implementation framework will then be developed. In addition, the government has developed, among others, the National Land Use Policy and The Local Government Act to set out the approach to city-level and broader land-use planning. Reform measures should also build on positive steps made by municipal authorities across the country, including further leadership by the Kampala Capital City Authority.

As policy-makers in Uganda look to shape and manage urban development, unlocking better urban growth will require a focus on four issues. First, *regional integration* to enhance Uganda’s major national and regional trade and transport infrastructure linkages. Second, *economic densification* to foster regional clusters of economic activity that generate agglomeration effects and improved infrastructure provision. Third, focused secondary city development to provide regionally balanced economic opportunities, and release the pressure on Kampala and its surrounding areas (half the urban population currently reside in Kampala). Lastly, as the major city in the country, there is a need for *continued attention on the challenges facing Kampala*, to continue building the capital’s competitiveness, develop its core national economic functions, and continue focus on its urban planning and governance.

There is a package of 8 priority interventions to catalyse better urban growth. Collectively, these could boost GDP by \$4.3 billion by 2040, as well as provide new jobs and positive environmental benefits. Many of these investments are already planned but should be prioritised.

Figure ES1

The compact and connected urban growth scenario



Source: NCE modelling.

These include a bus network, bus rapid transit (BRT), light rail transit, a standard gauge railway (SGR), flood risk management, biomethane fuel, developing urban waste management facilities in larger cities and vehicle emissions standards. The required investments in 2040 will be around \$0.7 billion, but in addition to supporting growth, these investments will also support infrastructure development that will reduce emissions by 7.3 MtCO₂ (metric tonnes of carbon dioxide) and directly create around 300,000 jobs (as well as supporting job creation in other sectors of the economy more broadly).

Investing in better strategic land-use planning and zoning to reduce sprawl must be at the heart of the strategy, and is a highly cost-effective intervention. This should be complemented by a range of large scale sustainable transport-related investments within cities, such as a bus network for Kampala, and a BRT for Kampala, Mbarara, Mbale, and Gulu.

Other investments to unlock a well-functioning national system of cities include the SGR which will link Uganda to its neighbouring countries. Planned under NDPII, this will enhance imports and exports, and regional trade competitiveness, while also boosting jobs and reducing GHG emissions by displacing freight cargo from roads. Our analysis shows this would support an increase of \$1.6 billion in GDP by 2040.

Recommendations

Our analysis and findings demonstrate the range of benefits to Uganda from supporting a national urban transition based on a better model of urban growth. That is not to say the path ahead will be easy – the country will need to grapple with ongoing urban challenges, which cannot be solved overnight. Policy experimentation will be important. Inevitably, there will be trade-offs in terms of which investments to prioritise, and value judgments over which outcomes are most desirable.

Urban policy does not exist in a vacuum. Broader policy reforms will impact the country's national urban transition. In its wider work in Uganda, the NCE partnership has highlighted that to move from high-level aspirations to implementation around green growth will require a focus on getting the fundamentals right: both to support Uganda's core development, and for green growth. This will include attention on "horizontal" policy areas which will directly impact urban issues – macroeconomic stability, governance, financing, skills development, and improving voice and accountability. It will also require accelerating shifts in the major economic systems: agriculture, industry, energy and cities.

Related to cities, this report suggests three broad areas of focus:

Recommendation 1: Invest in nation-wide integrated economic and spatial planning

Integrated urban planning at a national level, is central to any approach. The issues related to cities do not fit neatly into one government agency, and therefore requires cross-sector coordination.

Therefore, the government should ensure integrated planning by creating a cross-sector urban development group to coordinate urban and spatial issues. This would include all the major ministries covering transport, finance, energy and environment. This group could be a new coordination mechanism or build on existing ones e.g. through the National Planning Authority.

This group should be established immediately, and look to coordinate the activities of the NDPII, Vision 2040, Strategic Sector Investment Plans, the ongoing National Physical Development Plan, and other urban policy. It should also focus on issues such as land tenure, incorporating green growth considerations, and on identifying priority urban infrastructure needs.

Recommendation 2: Invest in city-wide development and infrastructure plans.

There is also a need at the city level to supplement national level planning efforts. The government should review existing metropolitan governance structures to ensure coordinated and enhanced urban planning at the city-level. Again, this should be undertaken as an immediate priority to assist in the preparation of integrated land use and transport plans and investment for all major cities. This will aid the proactive management of existing challenges, but also help in raising investment, particularly for sustainable public transport.

Recommendation 3: Enhance the technical and financial capacity of all urban institutions.

Having the requisite capacity to deliver on urban strategy will be essential. This should involve the deployment of multi-disciplinary teams in each major city to aid with physical and local economic development planning coordinated by the National Planning Authority, but with a focus on the devolution of relevant powers and responsibilities, where possible, to municipalities. Efforts to improve financing flows to cities should also be considered through greater local fiscal autonomy (e.g. through tax collection), increasing the creditworthiness of cities to enhance their borrowing and debt raising potential for sustainable urban infrastructure, and working closely with the private sector to develop public-private partnerships for infrastructure investment.

Table of Contents



Chapter 1
Urbanisation and
Development



1 Chapter 2
Uganda's Urban
Challenge



8 Chapter 3
Uganda's Urban
Opportunity 16



Chapter 4
Transformational
Investments for Better
Urban Growth



28 Chapter 5
Making it Happen 36

List of boxes, tables and figures

Boxes

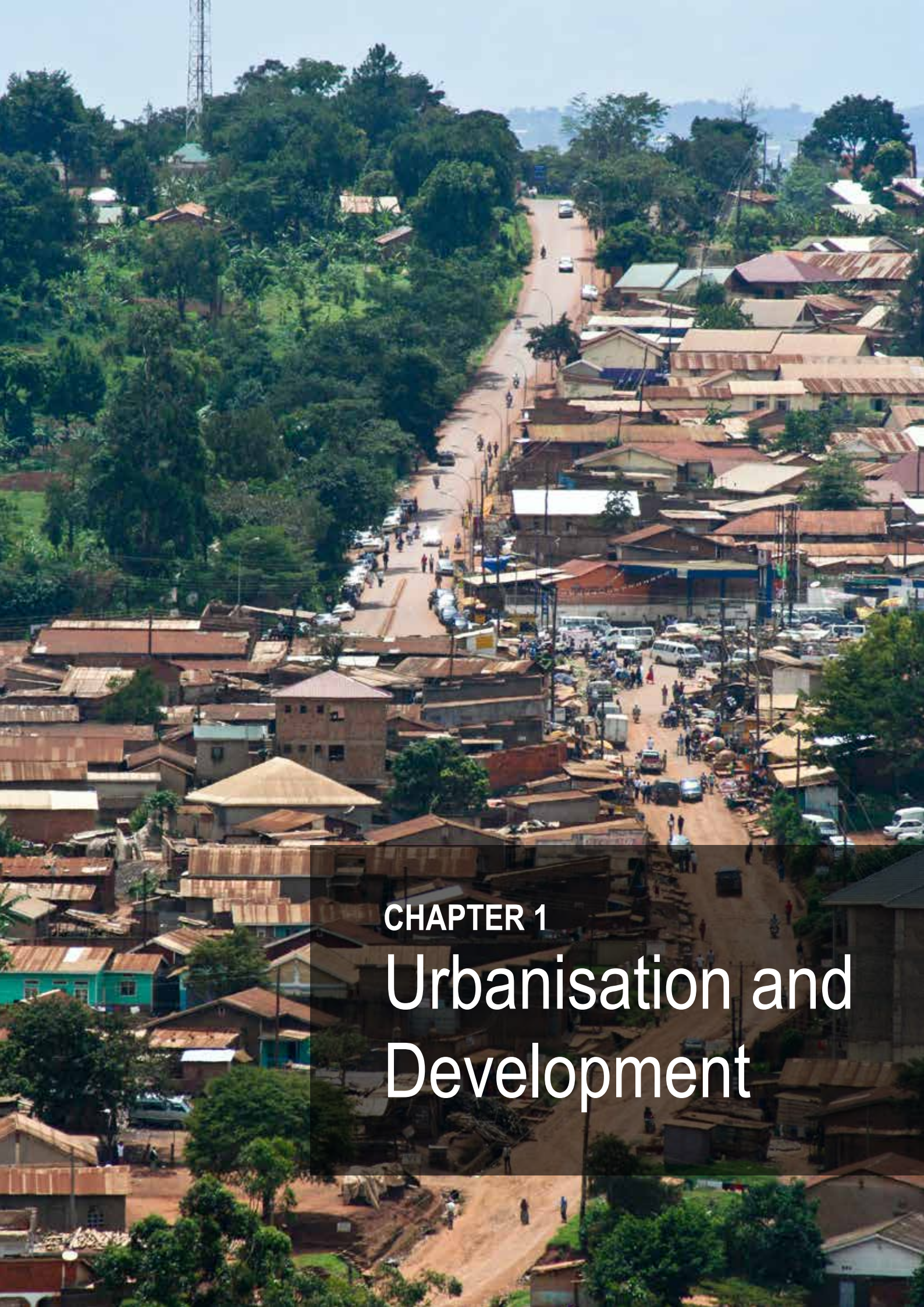
Box 1 Turkey's approach to managing urbanisation	5
Box 2 Constraints to growth in Uganda	9
Box 3 Vulnerability of urban areas to climate impacts	11
Box 4 Method for urban growth analysis	18
Box 5 Potential regional clusters	24
Box 6 India's Delhi-Mumbai industrial corridor	27
Box 7 Case study: Urban development in Lagos – BRT Lite, Nigeria	31
Box 8 Waste management	32

Tables

Table 1 Population growth and future projections for Uganda's major urban centres	17
Table 2 Longlist of urban sector opportunities	30
Table 3 Quantifying green growth interventions in cities	33
Table 4 Policy recommendations to support green growth implementation in urban areas	38

Figures

Figure ES1 The compact and connected urban growth scenario	vi
Figure 1 Major cities and towns in Uganda	10
Figure 2 Results of dispersed urban demand	20
Figure 3 Better urban growth scenario: results of the urban demand model showing the compact, connected demand response	22
Figure 4 Comparison of access to services in a dispersed versus compact growth scenario for Uganda in 2040	26
Figure 5 Analytical framework	29
Figure 6 Summary of long-term green growth opportunity: annualised net benefit in 2040 (US\$ millions)	35



CHAPTER 1

Urbanisation and Development

The importance of urbanisation for development

Africa's "growth miracle" in the 21st century has started to reverse a long-standing negative narrative about the continent. Between 2001-2014, average GDP growth reached around 5%, and rates of extreme poverty have fallen substantially.¹

Yet big challenges remain. Growth slumped in 2015 and 2016, and countries on the continent lags far behind on most measures of human development. Growth has not happened alongside significant job creation, while the structure of economies have also remained broadly constant over the last few decades. Climate change is taking an increasing toll on many countries: sub-Saharan Africa is warming faster than the rest of the world, and many areas in Africa will experience more frequent and intense droughts and floods. The economic impacts of climate change are expected to be severe, with agriculture and poor people especially at risk.

Against this backdrop, policy-makers in African countries and Pan-African institutions – the African Union (in its "Agenda 2063"), the African Development Bank, United Nations Economic Commission for Africa – have identified *economic transformation* as a critical strategy to help boost the pace of inclusive growth. Economic transformation refers to increases in the economy's productivity through the movement of workers from low-productivity sectors like agriculture to higher-productivity sectors like industry and services, as well as through productivity growth within sectors.

Although the relationship between urbanisation and economic development is complex, a stylised fact is that urbanisation and per capita GDP are highly correlated – with important two-way causal forces between urbanisation and development. Importantly, no country has ever reached middle-income status without a large shift of its population into cities.²

Typically, the growth of services and industry encourages urbanisation, because these sectors are less dependent on land as a factor of production, relative to agriculture. They are also better positioned to benefit from "agglomeration economies" that arrive from clustering together firms and workers in urban areas.³ City, size and urban density facilitate benefits such as spillovers, diffusion of knowledge across firms, specialised inputs and labour pools, better risk sharing, and a greater feasibility of infrastructure projects. Indeed, urban density can explain over half

of the variation in labour productivity across US states, making the case for encouraging more *compact* urban development.⁴

While urbanisation is likely to be a *necessary* condition for economic transformation, it is not *sufficient*. Substantial structural shifts in population from rural areas to urban areas without the accompanying economic activity and jobs to support urban residents elsewhere is not sustainable. Moreover, urbanisation needs to be well managed and well planned. For example, the failure to provide public goods to match growing urban populations contributes to unmanaged sprawl, promoting the growth of the informal economy and informal settlements and exacerbating issues such as congestion, local air pollution and inefficient energy use.⁵ Studies on the impacts of sprawl has shown that it can increase land consumption by 60-80% and private motorised vehicle travel by 20-60%.⁶

Urbanisation trends across Africa

So how is the African continent faring in its urbanisation and economic transformation?

Sub-Saharan Africa is among the least urbanised regions in the world, with only about 37% of the population living in cities in 2014 (up from 22% in 1980).⁷ The regional average masks a wide range of urbanisation experiences: while only 12% of people in land-locked, low-income, non-resource-rich Burundi lived in urban areas in 2014, the share was 87% in resource-rich, upper-middle-income Gabon. The overall pace of urbanisation in sub-Saharan Africa, while substantial, has been less than half the pace in East Asia and about the same as in Latin America at similar levels of development. Where sub-Saharan Africa is exceptional, however, is in how quickly the absolute numbers living in its cities are rising: an increase of 4.4% a year between 1980-2014 – much faster than any other region.⁸

Looking ahead, 55% of sub-Saharan Africa's population is expected to live in urban areas by 2050 – an increase of almost 800 million, or almost half the projected rise in urban dwellers worldwide.⁹ How this urbanisation occurs will have profound implications for the region's economic transformation, energy consumption, greenhouse gas (GHG) emissions and ability to adapt to climate change.¹⁰

Urbanisation in Africa has been a missed opportunity so far. Urban growth has not, for the most part, been accompanied by economic transformation – a phenomenon sometimes called "urbanisation without growth".¹¹ This appears to be a result of policy and institutional weaknesses that failed to provide an

enabling environment for rapid economic growth in cities, even as other factors encouraged rapid growth in urban population.

In particular, the rapid growth in sub-Saharan Africa's urban population is linked to a sharp decline in mortality rates in cities, particularly infant mortality, without an accompanying decline in fertility rates. As a result, urban youth dependency is large, while the urban working age population remains relatively small. Natural population increase contributed close to 75% of overall urban population growth in a sample of African countries between 1960–2010.¹²

The result is that many cities now have large numbers of unemployed youth. And with limited structural change, around 60% of urban employment and over 90% of new jobs are in informal activities.¹³ Analysts also note that primary commodity booms and government policies have channelled the spending of natural resources revenues to urban areas, creating “consumption cities” rather than “production cities”.

Cities in Africa also have features that hinder agglomeration effects and economic transformation. For example, many have low population densities and a large amount of sprawl, due in part to lack of governance and urban planning capacity, as well as rapid urban population growth itself. Population density in a sample of 12 African cities is only around half that in South-East Asian cities. In many cases, cities' physical footprint (in terms of the area covered) is growing faster than their population. The footprint of Kampala, for instance, has been growing by more than 10% a year, while population has grown by only 4.3%.¹⁴ While densification is not a panacea for better economic, social, and environmental outcomes, encouraging “good” or “liveable” density is an important contributor to these outcomes.¹⁵

Haphazard land regulation, insecure land tenure arrangements and weak housing finance institutions lead to dysfunctional housing markets and a lack of affordable, multi-storey housing. More than 60% of Africa's urban population lives in informal settlements or slums, often far away from city centres.¹⁶ Although car ownership is low, public transit options are limited so people commonly rely on private minibus services for transport. Many cities already suffer from severe congestion, long travel times, high road fatality rates, low energy efficiency, rising outdoor air pollution, and rising GHG emissions. The WHO notes that urban air pollution data for the region remains sparse, covering only about 20% of countries. However, the available data reveals particulate matter (PM) pollution is already higher than the world median. Premature deaths attributable to outdoor air pollution are still

relatively low in Africa – around 176,000 in 2012, or 20 per 100,000 population, compared with around 100 per 100,000 in the developing countries of East Asia – but they are rising.¹⁷

Urban sprawl also magnifies the cost of providing urban infrastructure, which has to be built over larger areas per inhabitant served. Weak city governments lack the fiscal resources to tackle deficits in urban infrastructure and public services. Even capitals such as Nairobi and Dakar have only \$10–15 per year per inhabitant for capital expenditures, and most cities have much less.¹⁸ Given the very limited budgets available to cities, sprawl means some areas will get only inadequate basic services, or none at all. Across the region, 60% of urban populations lack access to improved sanitation services, and 28% lack access to electricity; even those with power connections experience frequent outages. In many African countries, urban structures are dominated by a single prime city which puts pressure on the provision of urban services in just one part of the country, putting highly concentrated demands on infrastructure expansion.¹⁹

With climate change, more intense and variable rainfall is also increasing the threat of flooding in cities – a problem exacerbated by the growing number of people living in slums in peri-urban areas. Poorly planned coastal cities are also particularly vulnerable to sea-level rise. Migration from rural areas to cities will increase as climate stresses increase in agriculture and rural areas, increasing pressure on inadequate services and stimulating more slums and urban sprawl.²⁰

The benefits of compact, connected and coordinated urban development

So what is the answer to this complex set of challenges? Cities will continue to play a central role in economic development and a crucial task will be to unlock Africa's “urban dividend”. “Urban dividend” describes the economic benefits that arise from an alignment of talented job-seekers, livelihood opportunities and services in cities.²¹ The pattern of economic transformation, and successful social and environmental outcomes are inextricably linked. To be effective, these systemic changes have to be underpinned by an urban transition that is well planned.²² No country has climbed from low-income to middle-income status without a significant population shift into cities. Growth is supported by urban agglomeration and internal migration is a driver of long-term growth and poverty reduction induced by growth linkages and foreign trade.²³

The infrastructure deficit in sub-Saharan Africa is huge, and estimated at \$90 billion per year (split roughly a third between national, urban and rural infrastructure).²⁴ This includes investment in transport, water and sanitation, waste management and energy as well as “softer” investments such as education, health and housing.

Well-designed urban policies can yield benefits across multiple areas – economic, social or environmental. There is growing evidence that in addition to policies to promote “good” density (appropriate compactness), connectivity within and between cities – particularly in transport – and well-coordinated urban governance and planning can act as a good model to unlock better urban development.

In the 2014 report *Better Growth, Better Climate*, NCE sets out a model for sustainable urban growth at the global level.²⁵ This was anchored in evidence which demonstrates that cities will perform best – economically, socially and environmentally – when they follow a “3Cs” model,²⁶ defined as follows:

- **Compact urban growth:** through managed expansion and/or urban retrofitting that encourages higher densities, contiguous development, functionally and socially mixed neighbourhoods, walkable and human-scale local urban environments, redevelopment of existing brownfield sites, and provision of green spaces.
- **Connected infrastructure:** through investment in innovative urban infrastructure and technology such as BRT, cycle superhighways, electric vehicles, smart grids, energy efficient buildings and essential water, sanitation and waste services.
- **Coordinated governance:** through effective and accountable institutions to support the coordinated planning and implementation of programmes of activity and investment across public and private sectors and civil society, particularly for land use change and transport.

However, the benefits from such a model are not automatic. They require thoughtful planning, targeted investment and good governance. No single policy or initiative is the solution – multiple reforms, investments, and multiple levels of governance will be required. Furthermore, the challenges in cities are such that careful management of ongoing issues mean that an “idealised” form of urban development cannot be achieved overnight.

At the global level, the Global Commission on the Economy and Climate set out a number of recommendations for a better model of urban development. These include encouraging:

- **All countries** to develop national urbanisation strategies in conjunction with city governments, with cross-departmental representation and assigned budgets, overseen by the centre of government and/or Ministry of Finance.
- **Governments** to prioritise strengthening strategic planning at the city, regional and national levels, with a focus on improved land use and integrated multi-modal transport infrastructure, to drive the broader structural transformation of cities.
- **Governments** to reform fuel subsidies and introduce new pricing mechanisms such as road user charges to reduce and eventually eliminate incentives to fossil-fuelled vehicle use.
- **Governments and city administrations** develop strategies to improve their “own source” revenues and, where sovereign governments allow it, increase their access to private capital markets.
- **Multilateral development banks** to rapidly phase out the financing of investments that lock-in unstructured, unconnected urban expansion.

Building on this, at the recent Habitat III conference in Quito, a “New Urban Agenda” was agreed and adopted, which set the global vision for a shared view of how different actors can coordinate and cooperate around urban development that includes many of these features.²⁷ Given the deep linkages to other parts of the economy, a focus on the broad macroeconomic fundamentals to create an “enabling environment” is an essential foundation on which better urbanisation can be built.²⁸

Other areas of focus should be around greatly expanding urban infrastructure provision and exploiting new emerging technologies and institutions to provide decentralised, agile, low-cost and low-carbon modes of infrastructure provision. Most important though is the need to clarify land rights and strengthen land regulation to support economic growth and crucial formal, urban housing markets.

The good news is that some progress is being made in a range of cities to foster better urban growth across parts of the region, supported through initiatives such as the Compact of Mayors, C40 Cities Climate Leadership Group, Cities Alliance, and the Africa Urban Agenda Programme, among others. For example, in Tanzania,

the city of Dar es Salaam have implemented a BRT system, and in Addis Ababa the implementation of the continent's first light railway has recently been completed. There are many examples from across the world where this has been done well (see Box 1).

However, given the importance of better urbanisation to national economic, social, and environmental, outcomes, a step change in leadership is required across the region by national leaders, finance ministries, urban development, and other line ministries to complement city-level action. This was the rationale for the creation of the Coalition for Urban Transitions, to support with national level policy and investment for better urban growth.²⁹

Urbanisation and the development context in Uganda

In 2010, Uganda's President Yoweri Museveni announced Vision 2040, an ambitious long-term development strategy to transform Uganda from a low-income country to a competitive upper middle-income country within 25 years. The five-year NDPII sets out the detailed medium-term implementation plan that will guide the first steps towards realising this vision between 2016-2020.

Box 1

Turkey's approach to managing urbanisation³⁰

Since the 1950s, Turkey has undergone rapid population growth and urbanisation, with the urban population of Turkey doubling in the last 30 years. The management of mass urbanisation has led to Turkey becoming a middle-income country, with a number of thriving large cities and urban metropolitan areas.

Successful urban management has happened in parallel with a fundamental change in economic structure. Since 1960, industry has grown from 18% to 27% of the country's economy, and the service sector from 26.4% to 64%. Alongside this, GDP per capita rose from \$5,986 in 1980 to \$13,737 in 2012. Around 92% of Turkey's gross value added is produced in cities, and there has been a large decline in poverty. Today, Turkey's urban population is at 76% of a 76 million total population.

By developing strong urban planning and management policies early, Turkey has been able to avoid the problems that can arise with rapid urbanisation. As a result of planning, urbanisation in Turkey has been distributed across the country, with the three large urban agglomerations being Istanbul, Ankara and Izmir – cities distributed across the country. By encouraging urbanisation in different municipalities and building strong transport and connectivity between them, Turkey's cities have developed specialised economies which can trade with each other, offering their own specialised employment pools.

Planning interventions made by the Turkish government include:

- Establishing a Metropolitan Municipality Regime, which enabled local authorities to develop their urban areas and manage urbanisation to facilitate local needs and economies.
- Developing strong connective infrastructure and transport links, to enable domestic trade between different cities and the surrounding areas, as well as link Turkey to international markets, encouraging foreign trade.
- Investing equally in health, sanitation and education across the country to avoid national inequality and to strengthen the labour pool.
- Allowing the private sector to provide most of the employment opportunities, and investing in creating public sector jobs where less private employment is available.
- In the 1960s, the government brokered partnerships with private housing providers, which encouraged rapid building of human settlements that were available for low- and middle-income people. This prevented urban sprawl, allowing municipalities to ensure adequate infrastructure and services.

The choices that Uganda makes in the next few years will have major implications for economic growth, human well-being and resilience in the decades ahead. To build on the development progress so far, Uganda will need to place even greater emphasis on overcoming the issues that are holding back the country's ability to unlock urbanisation for development. This is important as the country strives to reach upper middle-income status by 2040, realise the Sustainable Development Goals, and deliver on its international commitment to low carbon economic growth as part of the Paris climate change agreement.

Vision 2040 has acknowledged the need to diversify the economy. Vision 2040 expects the industrial share of the economy to reach 31%, with services rising to 58% and agriculture reduced to 10%.³¹ Prioritising structural transformation will drive future growth, accommodate a rapidly expanding workforce and improve productivity. Currently, the achievement of the NDPII ambition is challenged by a number of persistent economic, social, environmental and spatial constraints that are restricting private sector development and overall investment, and hampering development progress.³²

Uganda's leaders understand that to deliver on their development objectives they will need to reconsider the country's growth model. This alternative growth model would deliver economic and social outcomes at the same time as protecting natural capital, managing the impacts of climate change, and also using environmental policy to actually drive growth: a "green growth" model. This will require a continued focus on getting the fundamentals right through macroeconomic stability, improving the investment climate, and investing in health and education. But it will also need to include an enhanced focus on improving the productivity of agriculture, developing high value services and industry, providing access to modern energy, and making the most of the opportunities from urbanisation.

Within this context, this paper is concerned with realising the benefits of better urbanisation. Uganda currently has a low urbanisation rate even though the pace of urbanisation is rapid. According to the country's latest census in 2014, approximately 6.6 million Ugandans (18%) live in urban areas,³³ which is below that of middle-income countries and relatively low compared to its East African neighbours. Between 2002-2014, urban population in Uganda grew by an average rate of 5.4%, making it the most rapidly urbanising country in Africa.³⁴ The United Nations projects that the total urban population will be 20 million by 2040 and 32 million by 2050, accounting for almost one-third of the country's population.³⁵

Much of the urbanisation has not been driven by productivity in labour intensive sectors. Like many countries in Africa, Uganda has experienced strong economic and social gains over the last 15 years. However, there is still large unemployment in urban areas as the growth has not happened simultaneously with large job and productivity growth in the industry and service sectors. This has been compounded by a large informal economy and the "growing pains" from rapid urban sprawl, including notorious congestion in Kampala.³⁶

Looking to the future, Uganda is attempting to overcome its urbanisation challenges and successfully shape its future urban development transition. Yet without concerted action and early intervention, the country's urban challenges will prevail, intensify and become very costly to resolve. Given the long lifetime of cities and their related infrastructure, a small number of decisions over the next five to 10 years will shape and lock-in Uganda's urban future.

Purpose of this report

At the request of the Government of Uganda, to improve its understanding of the challenges and opportunities related to green growth, the NCE Partnership in Uganda has sought to address four questions:

1. Is green growth an economic opportunity for Uganda?
2. Given the range of urgent development priorities, is green growth affordable?
3. What are the key policy shifts required for green growth to support the aims of the NDPII and Vision 2040?
4. What are the immediate actions required to drive implementation?

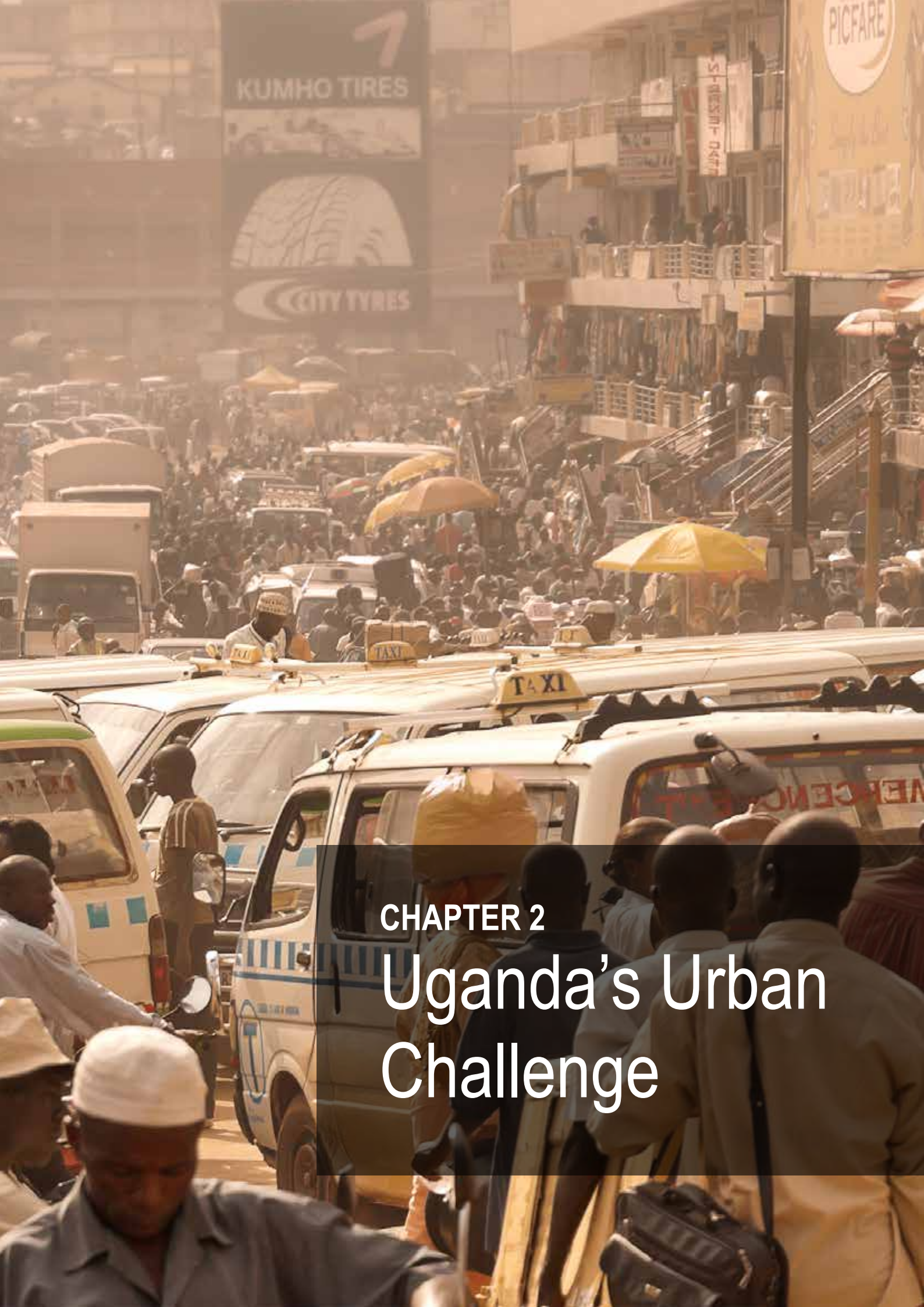
The analysis of these questions are answered in the report, *Achieving Uganda's Development Ambition – The Economic Impact of Green Growth: An Agenda for Action*. This work aimed to take an integrated approach, focusing on the interdependencies between core development objectives and environmental outcomes. As part of this work for the paper, it has sought to understand the implications of better planning and management of both infrastructure and cities and its relationship to growth. This working paper summarises the analytical work that underpins the findings in the main report.

Building on the global evidence, this paper explore the following questions linked directly to urbanisation:

1. What are the challenge and opportunities for unlocking better urbanisation in Uganda?
2. What are the elements of a better model of urban growth, supporting improved national development outcomes and long-term economic transformation?
3. What are the potential net economic benefits of better urban growth?
4. What urban infrastructure investments and national policy levers are necessary to support better urban growth in Uganda?

The rest of the paper is structured as follows:

- Section 2 presents the major constraints and challenges relating Uganda’s urban transition.
- Section 3 looks at the potential scale of the nation-wide costs of a continuation of current trends compared with the benefits of an alternative urban growth scenario.
- Section 4 sets out the transformational urban infrastructure investments that could unlock this transition in the short-term.
- Section 5 concludes and sets out an action plan for the way forward.



CHAPTER 2

Uganda's Urban Challenge

A framework for diagnosing Uganda's urban challenges and constraints

The process of urbanisation at the national level in Uganda is influenced by a number of what are often considered “non-urban” policies i.e. nation-wide “urban influencing” policies and barriers which indirectly impact urban development. Therefore, the starting point for understanding urbanisation challenges must be with these cross-cutting (and potentially binding) constraints holding back development in Uganda, and in considering how these then play out in an urban context (see Box 2).

Many of the cross-cutting constraints have historically impacted and led to the current picture of urbanisation in Uganda today. Unless confronted, these constraints

will also impact the pattern and shape of urbanisation in Uganda in the future, particularly the infrastructure deficit and the complex land tenure systems. To explore the challenges facing urban development in Uganda today, we have analysed four areas:

Area 1: Uganda's cities and their contribution to economic development, including the hierarchy of urban areas, location of economic activity, and levels of informality;

Area 2: Markets for urban land;

Area 3: Urban infrastructure within and between cities, including transport, basic services, and housing; and

Area 4: Urban governance and finance.

We now explore each in turn.

Box 2

Constraints to growth in Uganda³⁷

For the wider work of the NCE partnership in Uganda, a growth diagnostic assessing the constraints to inclusive and sustainable growth has been used to summarise existing analysis on constraints to-date and why constraints persist.³⁸ This approach recognises that countries tend to experience episodes of high growth which continue until the economy runs into barriers or constraints brought about by a particular set of factors, so-called “binding constraints”. The findings indicate the following major cross-cutting constraints impacting urban development in Uganda:³⁹

- **Access to land:** Conflicting land tenure systems, overlapping rights, a lack of registration and a high amount of conflict over land. This prevents consolidation and allocation of land for economic activity and urban infrastructure, including transport and housing in urban areas.
- **Access to finance:** Limited access due to high interest rates, low access to collateral for business and households, high reliance on informal networks for credit, and limited capacity to provide credit through mobile banking. This limits the ability for productive investment, while barriers to accessing credit impede SME and firm creation. The lack of land rights will also continue to restrict the use of land as collateral.
- **Disconnected urban infrastructure:** High costs for transporting goods across Uganda due to a poorly developed national transport network within and between cities. Even in Kampala, congestion and commuting costs lower productivity and reduce investment and trade. Future growth and population growth will put further pressure on the need for improved market access and is heavily interlinked with the urban development story.
- **Government and institutional capacity:** Low levels of institutional capacity resulting in a lack of power to enforce regulation, including at the local government level. This lowers business confidence and impedes Uganda's ability to execute and implement policies and major urban infrastructure projects.
- **Human capital and skills:** Slow growth in skill-intensive sectors due to a low skilled labour force and a shortage of technical and management skills.
- **Access to electricity and other basic services:** Low levels of access to electricity and other basic services, with high connection costs, and low quality and reliability of supply. This constrains business growth and productivity.
- **Tax and business regulations:** The complexity of process for business registrations and the wider taxation system hinders formal SME creation, and again, leads to high levels of informality. There are also cross border trading difficulties, particularly from import tariffs.

Area 1: Uganda's cities and their contribution to economic development

Urbanisation trends

Urbanisation has been occurring at a relatively steady pace in Uganda. Although Uganda has a low urbanisation rate of around 19% (the level of people who live in urban centres),⁴⁰ its urban population growth rate is one of the highest in the world at 5.4% over the last two decades, with a current urban population of 6 million.⁴¹ Projections anticipate that urbanisation at the current pace would result in an urban population of more than 20 million by 2040, and 32 million by 2050.⁴²

Uganda has a number of emerging urban areas but only one large city, the capital: Kampala. More than 45% of people living in central Uganda were born in other

parts of the country, a percentage that rises to 74% for Kampala.⁴³ Today, up to 40% of Uganda's urban population live in Kampala, and the primacy of Kampala presents issues for future urban development.⁴⁴ Based on current trends, Kampala will be a "megacity" of over 10 million people by 2040.

Other secondary, urban areas are also beginning to attract rural migrants to cities. Mbale, Jinja, Gulu, Mbarara particularly display swollen daytime populations with rural commuters traveling significant distances to access work or jobs in the city. Typically, secondary cities are trading and services centres, with some agri-processing activity. Uganda's second largest city, Jinja, is cited to have a population of about 70,000 inhabitants. However, the municipality reports that the daytime peak population is between 200,000-300,000 – a typical trend for Uganda's cities.⁴⁵ Uganda's largest cities are shown in Figure 1.

Figure 1

Major cities and towns in Uganda



Urbanisation and economic activity

Cities are economically important. Urban areas account for 70% of non-agricultural GDP and provided 36% of overall job growth between 2001-2010.⁴⁶ However, cities in Uganda have shown relatively low levels of productivity. At a national level, the current national economic activity in Uganda is dominated by the “northern corridor”. This links Kampala in the west to Rwanda and the Democratic Republic of Congo, and in the east to Kenya and international trade routes.⁴⁷ Most economic activity – including high-productivity economic activity – is also concentrated in the northern corridor and around Lake Victoria, where over 70% of the country’s manufacturing sector is located.⁴⁸

Analysis of Ugandan industries has shown that the strongest agglomeration effects are driven by manufacturing diversity, skilled human capital and access to infrastructure, particularly electricity. Ugandan manufacturing is dominated by production activities that are standardised, requiring low technology by global standards. These sectors include food processing; and the production of basic construction materials, garments and textiles, clay products, and furniture.⁴⁹

There are challenges though. Despite roughly 65% of new jobs being created in urban centres, Uganda’s urban areas have not been effective at inducing formal wage growth and job creation, where nearly half of employment is informal,⁵⁰ in non-tradable services, and from very small firms.⁵¹ If this continues, it could have a large impact on the quality of urban and economic development in Uganda.⁵²

A lack of good quality national and regional transport infrastructure is also a challenge. It means many cities – including Kampala – are poorly connected to external markets nationally and internationally, limiting the growth of urban industries and associated

employment opportunities. Uganda’s northern region, and to a lesser extent the eastern and western regions have lower levels of asset ownership (other than land), infrastructure provision, market access and access to services.⁵³

Area 2: Markets for urban land

A complex land tenure system currently poses a major barrier to sustainable urban growth. In urban areas, where land acquisition is essential for growth and investment in urban infrastructure, land is difficult and expensive to acquire for public projects due to a lack of clear ownership and a lack of valuation techniques for appropriate, market-level compensation arrangements.⁵⁴ Current land patterns are also prone to climate risk (see Box 3).

Uganda’s land tenure system is complex. Uganda’s 1998 Land Act recognises four classes of land tenure: freehold, leasehold, mailo, and customary. The majority of land in Uganda is held with customary tenure.⁵⁵ Freehold tenure is less common and mainly exists in urban areas. Leasehold land tends to be granted by the state for urban holdings of, typically, 49- or 99-year terms, and also to non-citizens. Mailo land is a form of freehold tenure that was granted by the British to individuals in the Baganda Kingdom (the Central Region today) and in Bunyoro.⁵⁶ Mailo land is similar to freehold land, except that land ownership is highly concentrated, and land-holders may not evict customary tenants.⁵⁷ These restrictions make it difficult to establish a smoothly functioning market for land held under mailo tenure – a particular challenge as this overlaps with the areas which are suitable for urban investment (there is around 9,000 m² of mailo land).⁵⁸

Lack of clear property rights impedes productivity and development. Data from the Uganda National Household Survey from 2010, showed that of all

Box 3

Vulnerability of urban areas to climate impacts

Many of these climate risks will occur in urban areas. For example, within the greater metropolitan area, an estimated 45% of residential buildings are currently located in flood prone areas.⁶⁶ Uganda is likely to experience changes in the frequency and severity of extreme climate events, such as droughts and floods. Urban areas will also need to consider these changing future risks.⁶⁷

A recent study indicated that the cost of not acting to boost climate resilience would have a total economic cost in the range of \$3.1 to \$5.9 billion by 2025. The biggest impacts will be on the water, energy, agriculture and infrastructure sectors.⁶⁸

land in Uganda 37% could not be sold, 34% could not be rented, and 44% of land could not be used as security for a loan.⁵⁹ This is partly attributed to the predominance of the mailo land tenure system, which is beset by overlapping land rights between those who are registered owners and the lawful or other occupants. Overlapping property rights on mailo land has created investment disincentives and reduced levels of productivity by almost 25%.⁶⁰

There are also complex administration structures related to land. Outside of the mailo areas, land markets in Uganda do exist. However, they are not sufficiently robust or integrated to drive efficient land use and development. Kampala itself has not only four separate land tenure systems but also multiple land administration entities including, the Kampala Capital Council Land Board, Uganda Land Commission, Buganda Land Board amongst others. These organisations need a harmonised approach to land and urban development.⁶¹

The current functioning of land markets prevents efficient consolidation and allocation of land for new economic activity and infrastructure. Further still, development projects such as the planned BRT and the Kampala-Entebbe Expressway encounter very high transaction costs due to compensation for incumbents and a lack of transparency surrounding land transactions, particularly in the urban areas. As a result, urban centres are not developing efficiently and are experiencing costly sprawl,⁶² which is often unplanned.⁶³ Furthermore, a lack of access to finance and credit in Uganda means that formal purchase of land is more common in the developed central region (59% of land transfers) than in the undeveloped north (9% of land transfers), causing regional disparity in infrastructure development.⁶⁴

Progress is being made to develop more effective land management systems. The Government of Uganda has already begun the process of rehabilitating land institutions and digitising land information systems. There are also initiatives to organise communal landowners in northern Uganda into legal entities and to register their land. Today, approximately 20% of Uganda's land is registered, which is higher than the average level of 10% in sub-Saharan Africa.⁶⁵

Basic and social service provision can also be negatively impacted by climate change. Health service provision can be vulnerable to climate variability, particularly health infrastructure that provides support for responding to epidemics and emergency situations in urban areas. An estimated 45% of the health units are located in flood prone areas in Kampala.⁶⁹

Area 3: Urban infrastructure within and between cities

Intercity transport connectivity

Uganda's cities are dominated by private transport. Private vehicle use continues to be an attractive mode of transport due to a weak public transport system. Matatu (14 person minibuses), taxis and boda bodas (motorbikes) are the main forms of affordable transport but they are dangerous and inefficient, where taxis often follow unplanned routes and make many stops to maximise their utilisation rates. Currently, the majority of urban dwellers walk to work, but as Ugandan cities grow in size, labour market opportunities could become more restricted for those who have limited access to motorised transport.

Kampala has a rapidly increasing number of private motorists, causing congestion problems as well as high incidence of traffic accidents and pollution. Currently, transport costs in Kampala are significant with 24,000 productive hours lost to congestion each day.⁷⁰ In 2012, the average travel time for the greater Kampala metropolitan area is 2.5 m/km (minutes per kilometre) (average speed 25 km/h) with routes ranging from 3.1 m/km down to 1.7 m/km.⁷¹

Traffic management systems including traffic lights and junction controls are also limited. Main roads are narrow currently preventing bus lanes or BRT systems from operating. Single lane bottlenecks and junction layouts are also a challenge. Some new roads are being constructed but often without the connective slip roads and junctions to connect to the city. Car ownership is set to rise in the city both as an impact of growth, and due to the low development of the public transport system. The lack of public transport is particularly acute in connections and accessibility to slums, hindering opportunities to employment.⁷²

Locking-in the primacy of car based transit in Uganda's cities is likely to result in long-term costs. These costs will relate to the provision of a huge quantity of new roads, requiring a second wave of new investment in public transport to relieve the congestion. Developing an early, integrated urban transport strategy underpinned by affordable mass transport can enhance mobility and reduce congestion, and reduce costs to users from the outset.

Intra-city transport connectivity and regional integration

Intra-city transport connectivity also needs to improve to better facilitate economic activity. Typically found within individual urban centres, intra-city transport can help to form a network of connected cities that promotes trade.

Uganda's trade potential is currently held back by the lack of available inter-city transport infrastructure, particularly in the north.⁷³ Currently, Uganda's distance from an international port, quality of infrastructure and non-tariff transport costs associated with trade along this corridor act as barriers to international competitiveness. Currently, 80% of international exports transit through the Port of Mombasa in Kenya.⁷⁴ There is an overreliance on road transport for trade, and these roads are often in poor condition. The cost of transport is considerably higher along the Kampala-Mombasa corridor compared to transportation costs between major cities in other countries – transport prices are \$0.08 per km between Mombasa and Kampala, compared with \$0.06 between Durban and Lusaka, \$0.05 in China and \$0.04 in the US.⁷⁵

Despite the need for improvement in connectivity between cities, regional trade has increased markedly in recent years, showing signs of a natural competitive advantage for trading with its neighbours, with 80% of these exports going to Kenya, South Sudan, DRC and Rwanda. This growing regional market offers a unique opportunity for Uganda to provide a trade-brokering, transit, and value-add role. It can also focus on backfilling providing services to regional economies which are more focused on export markets, or those that are unable to service their own basic needs.

Aligning inter-city and regional investments in road and rail transport with neighbouring countries is therefore important. A planned standard gauge railway (SGR) set to improve trade logistics. Uganda is a member of several regional agreements including the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA). The EAC integration provides Uganda with an opportunity to pool resources with other partner states to develop regional transport infrastructure projects to increase connectivity within the region. These include regional road networks, regional railway networks, regional water ways, ports and other facilities.

Efforts are already underway for Uganda, Kenya and Rwanda to jointly improve the quality of the road connecting Informal development of slums, overcrowding, pollution, sprawl, combined with

overwhelmed water and sanitation characterise the urban context of Uganda's cities. Other cities show similar characteristics, but Kampala alone has 62 different slums accommodating an estimated 60% of the city's population.⁷⁶

the three countries and linking them to the sea at Mombasa. The Export-Import Bank of China and the three governments are also jointly financing the construction of the regional SGR from Mombasa to Tororo and further to Kampala and Kigali, with a branch to Juba.

Access to basic public services

There is a significant difference in level of access to basic services between Kampala and other smaller urban areas in Uganda. Kampala has witnessed progress in access to water, sanitation and health, but smaller urban areas still have very limited access to these basic services. In 2013, 46% of Kampala's population had access to piped water, compared to 24% in other big cities and around 10% in small towns.⁷⁷

Despite this large variation, living standards have generally improved at a faster rate in urban areas. Urban areas in Uganda have lower rates of poverty and higher average consumption when compared to rural areas. Average monthly per capita expenditure is UGX 163,000 (around USD\$45) in Kampala compared to only UGX 55,000 (around USD \$15) in rural areas,⁷⁸ demonstrating a much higher level of living standards in urban areas. Access to basic services is also higher in urban areas, with 38% of urban population connected to the electricity grid by 2013, while less than 2% of rural residents had electricity connection.⁷⁹

Housing shortages are prevalent across Uganda, with a deficit of around 1.6 million homes.⁸⁰ Rapid growth of the greater Kampala metropolitan area has resulted in the proliferation of slums and unplanned settlements, mirroring growth in the informal economy. Due to the high cost of transport, there is a preference for living in slums rather than be cut off from the urban labour market in more formal settlements. Low-income dwellings in informal settlements are of low quality with informal settlements are characterised by poor living conditions, with limited water and sanitation services and inadequate social services.⁸¹

There is severe under-provision of sanitation infrastructure across Uganda's urban areas. This is especially prevalent in urban settlements, with less than 10% of Kampala served by sewerage infrastructure. Provision of waste management is also an issue in

Uganda's cities. Solid waste collection, transportation and disposal is not generally available in Uganda's urban areas.⁸²

Area 4: Urban governance and finance

Urban governance

The major institutional bodies playing roles in urbanisation and urban infrastructure projects in Uganda are:

- The Office of the President: for general coordination around government policy
- The Kampala Capital City Authority: an agency of government with designated powers for Kampala
- The Ministry of Finance, Planning and Economic Development: operates within its mandate of public financial management and development planning (including the National Planning Authority)
- The Ministry of Lands, Housing and Urban Development (MLHUD): tasked with physical planning, the urbanisation agenda and land administration
- The Ministry of Local Government: its mandate extends to promoting decentralisation and building capacity of the local government.

Since 1980, Uganda has pursued a decentralisation programme aimed at achieving economic development from the grassroots. Centralised decision-making still has a major influence on the designation of and support from secondary cities and towns (for example, economic infrastructure such as rail, dams and airports), but also designation of and support for secondary cities and towns.

Furthermore, there is a need to strengthen the current institutional landscape. Although Uganda's legal framework creates provisions for urban administration and governance structures both at the national and local government levels, these structures could benefit from enhanced coordination. Land issues are also important: there is a need for a link and coordination between the land commission, land registry and district land boards. They all have limited capacity and independently, have not been able to drive improvement to centralise the process of land transactions to overcome the issues discussed earlier in this chapter.⁸³

To address these challenges, the Government through the MLHUD launched the draft National Urban Policy in 2013. The plan is yet to be approved by parliament, and a detailed implementation framework is still being developed. Policies and regulations influencing the urban agenda are:

- The Uganda National Land Policy – to ensure efficient utilisation and management of Uganda's land across different uses and sectors
- The National Land Policy Implementation Action Plan – to implement land reforms for optimal utilisation of land and land-based resources
- The Physical Planning Act – to establish district and urban physical planning committees and provide for development of physical development plans
- The Uganda Land Act – to provide a base framework for land holding, land boards and land committees
- The Local Government Act – to provide a governance framework for local government
- The Kampala Capital City Authority (KCCA) Strategic Plan – to outline Kampala's strategic agenda over the short to medium term
- The KCCA Act – to outline the governance structure of the Kampala Capital City Authority
- The Kampala Climate Change Action Plan – to outline the city's mitigation and adaptation actions to combat climate change.

Urban finance

Urban development will be financed by a combination of public and private investment. Related to public finance, it is important to distinguish between national level urban financial mechanisms, and regional and city level. Here we focus on the city level.

Cities in Uganda manage their finances according to the local regulatory framework and government structure, which also determines the level of authority delegated to them. However, the variable type of decentralisation arrangements in financial decision-making is one of the primary challenges to urban finance. Fiscal effectiveness at a local level has four components:

1. Tax revenue: income gained by local governments through the collection of taxes
2. Borrowing and debt: funds from repayable sources e.g. loans and debts (public/private)

3. Other revenues: including social contributions, grants, property income and land value capture
4. Spending: all expenditures related to provision of goods and services.

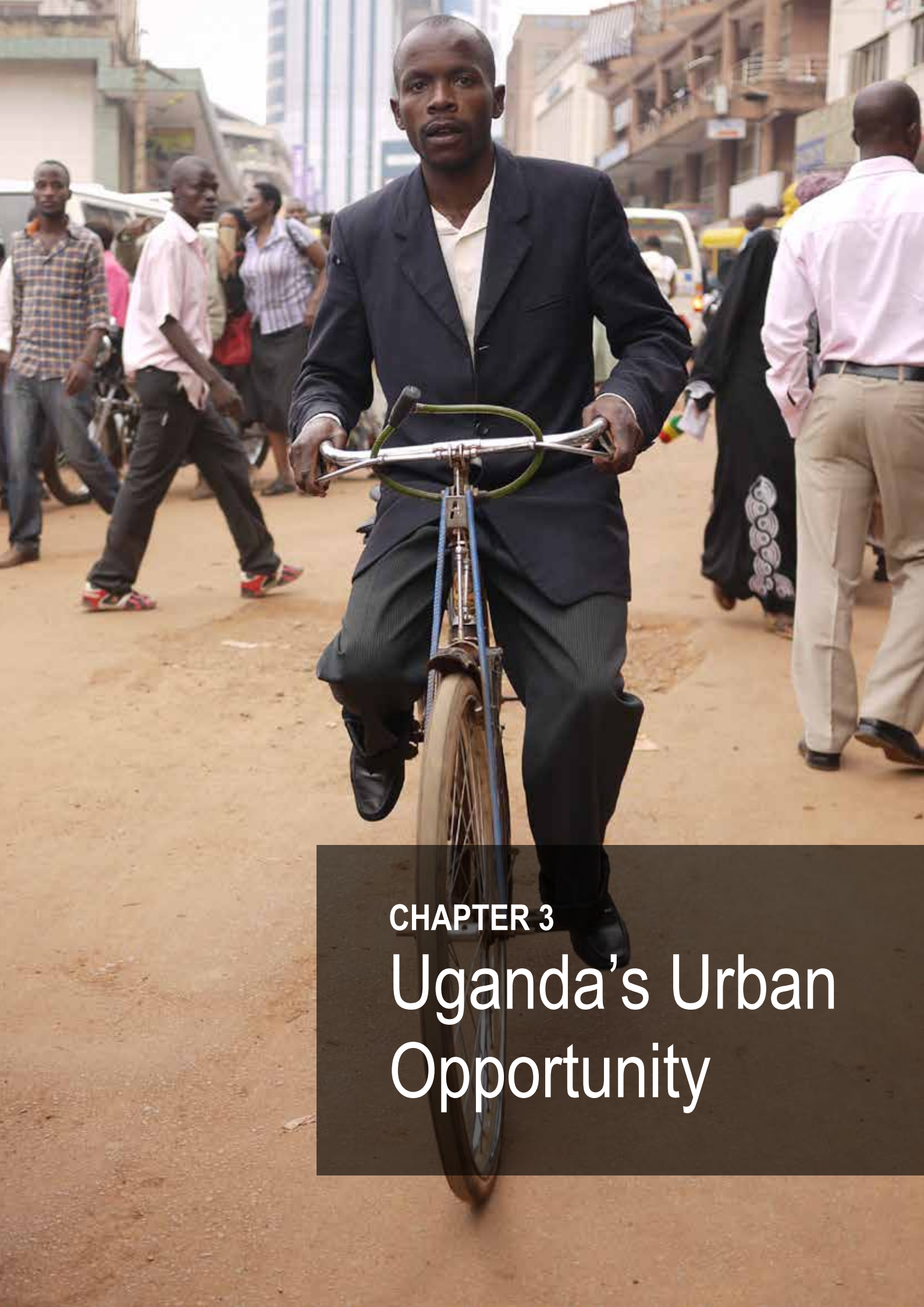
Progress is being made in Uganda on enhancing local fiscal autonomy in some urban areas through building the local revenue base, although having the permission to do so at the scale needed to meet investment needs remains an obstacle. Low revenue bases, poor or no credit ratings and country specific risks means the cost of borrowing in many cities is very high unless sovereign guarantees are provided. Kampala has achieved a credit rating of 'A-', which is impressive relative to other African cities. Yet regional municipalities in secondary cities continue to have little ability to borrow.⁸⁴

The larger municipalities are more knowledgeable about expenditure, but lack capacity and viable options to collect and increase revenue in other areas. Furthermore, the central funding they receive is largely ring-fenced for education, health and other basic services. Accessing investment for major urban infrastructure projects such as public transport is a major challenge that needs to be addressed and supported at local levels.

The Ugandan government has promoted deliberate efforts to increase private sector investment and engagement. Concession agreements, public-private partnerships (PPP) and various other licenses have been agreed with the government to increase private sector investment and participation, with the aim to increase access to services and improve service delivery while widening the tax base. These efforts include:

- The establishment of the Private Sector Foundation in 1985 to support private sector growth, private sector advocacy, capacity building and dialogue with the government.
- Strengthening of institutions such as the Uganda Registration Services Bureau, Uganda Investment Authority, to reduce the cost of doing business in Uganda. Other initiatives include the Presidential Investors Roundtable and National Competitiveness Forum.

External private investment also plays an important role. In recent years, China has become a primary backer of Uganda's and Africa's infrastructure projects with growing influence. China has pledged \$3 billion for joint investments with the World Bank in African infrastructure. While the China–Africa Development Fund, supported by the China Development Bank, continues to support infrastructure development in Uganda. In March 2015, the Parliament of Uganda agreed to a \$1.4 billion loan to be obtained from the Export-Import Bank of China to finance the 600 MW (megawatt) Karuma hydropower dam.⁸⁵



CHAPTER 3

Uganda's Urban
Opportunity

The factors outlined in Chapter 2 are combining with demographic trends in Uganda to create a less than optimal urban system which is characterised by dysfunctional, disconnected urban development. By 2040 the growth in urban areas will result in an urban population of 20 million people – 18m of which is projected to be in the “top 20 cities” (see Table 1). What will be the impact of a continuation of current trends, and what are the alternatives?

In this chapter, we model the economic and wider impacts of two growth scenarios:

1. A continuation of business as usual current trends for a dispersed growth scenario
2. An alternative, better planned urban development model, drawing on the compact, connected and coordinated approach highlighted in Chapter 1.

Table 1

Population growth and future projections for Uganda’s major urban centres⁸⁶

Rank	City	Historical growth			Projected growth		
		1991	2002	2014	Growth Rate	2025	2040
1	Kampala	774,241	1,189,142	1,516,210	2.0%	4,105,000	5,086,000
2	Kira	No data	124,067	313,761	8.0%	734,451	2,342,294
3	Mbarara	41,031	69,363	195,013	8.6%	483,272	1,665,862
4	Mukono	7,406	46,506	161,996	10.4%	481,021	2,121,779
5	Gulu	38,297	119,430	152,276	2.0%	189,336	254,821
6	Nansana	No data	62,044	144,441	7.3%	313,400	901,233
7	Masaka	49,585	67,768	103,829	3.6%	153,206	260,419
8	Kasese	18,750	53,907	101,679	5.3%	179,450	389,376
9	Hoima	4,616	27,934	100,625	10.7%	307,843	1,414,308
10	Lira	27,568	80,879	99,059	1.7%	119,241	153,546
11	Mbale	53,987	71,130	96,189	2.0%	119,599	160,964
12	Masindi	10,839	28,300	94,622	10.1%	272,680	1,154,682
13	Njeru	36,731	51,236	81,052	3.8%	122,162	213,744
14	Jinja	65,169	71,213	72,931	0.2%	74,552	76,820
15	Entebbe	42,763	55,086	69,958	2.0%	86,984	117,069
16	Arua	22,217	43,929	62,657	3.0%	86,732	135,126
17	Wakiso	No data	14,603	60,011	11.9%	206,710	1,116,383
18	Busia	27,967	36,630	55,958	3.5%	81,697	136,871
19	Fort	32,789	40,993	54,275	2.3%	69,700	98,032
20	Iganga	19,740	39,472	53,870	2.6%	71,444	104,997
Total - Top 20 urban areas		1,273,696	2,293,632	3,590,412		8,258,479	17,904,326
Total - Greater Kampala metropolitan area		824,410	1,429,404	2,121,936		5,614,167	10,783,525

Note: The table above includes projected growth for 2025 and 2040 assuming historical growth rates between 2002-2014.

Source: NCE calculations based on UN Habitat and UBOS Census data 2014.

A comparative analysis of the compact and connected patterns of urbanisation

Using the “3Cs” model, two scenarios for Uganda have been developed using a current, *dispersed future urban growth scenario*, and an alternative *compact and connected urban growth scenario*. The dispersed growth scenario shows a realistic projection of business as usual urbanisation patterns, broadly expected under NDPII implementation. The compact and connected urban growth scenario includes dedicated government policy to encourage targeted consolidation along economic corridors combined with strategic growth “poles” linked to economic infrastructure investments such as road building.

Spatial analysis, using a district-level Geographic Information System (GIS) model linked to macroeconomic data has been used to provide a measure of “urban demand” across 112 districts in Uganda. The macroeconomic output data from the Maquette for MDG Simulation (MAMS) model used in the wider green growth analysis, is disaggregated

by sector and split by districts to show how economic activity will play out spatially. This is used to measure urban and infrastructure demand by combining economic activity with population, natural resources and existing infrastructure (around 20 layers of data were used to build up a picture). See description of the method to create the two scenarios in Box 4.

The analysis builds up these economic, demographic, environmental and natural resource data layers into a “final urban demand” output. This demonstrates where urban development is most likely to occur and be required in the future, under both scenarios. The following layers built are included:

- **Current urban structure** – location of existing cities and towns
- **Current physical constraints** – location of areas subject to physical constraints, such as water, natural hazards, floods, earthquakes and droughts
- **Current economic demand** – current economic activity split across 26 sectors

Box 4

Method for urban growth analysis

The compact and connected urban growth scenario is built by assuming a number of features, for example a competitive and productive city network connected by quality infrastructure and a clear system of cities linked to economic activity and function.

The two growth scenarios have been developed using the following steps:

- An economic growth forecast scenario using a Ugandan government macroeconomic model has been created showing GDP growth and sector composition to 2040.
- Geo-spatial data with firm sizes and location by sector has been provided by the Ugandan Bureau of Statistics (UBOS) Census of Business Establishment 2011.
- The spatial economic model catalogues the sensitivity of each sector to factors of production such as electricity, natural resources, water resources and labour.
- A current urban demand map is produced in a spatial-economic model, by disaggregating 2014/2015 GDP data from the macroeconomic model by district, using data on current business locations from UBOS.
- For the dispersed urban growth scenario, using GDP growth projections for 2040, the dispersed urban demand is calculated by assuming firms locate close to existing agglomerations (which are widely dispersed) and the relevant factors of production for that sector. The urban demand output for the dispersed urban growth scenario is an aggregation of this total urban demand mapped by district.
- In the compact and connected urban growth scenario, economic activity does not follow existing agglomerations but is instead focused on identifying cities and corridors linked to economic function.

A comparison of infrastructure needs, access to services, and difference in GHG emissions is then undertaken using these two urban growth scenarios.

- **Future economic demand** – future economic activity split across 26 sectors
- **Economic inputs** – factor of production needed for each of the 26 sectors
- **Location of current economic activity** – location of agricultural production, including cash crops and other crops, as well as manufacturing and services.

The current urban structure acts as a baseline from which future urban growth will occur, as urban areas will emerge around existing towns and cities using projections of future urban growth. Consideration of further physical factors provide a sense of where urban development may be enhanced or constrained by natural factors such as floods and droughts. This geographical data is then layered with location of current and future economic demand to identify the most optimal locations for future urban development, recognising that successful and competitive cities should be driven by economic function.

The analysis builds up these economic, demographic, environmental and natural resource data layers into a “final urban demand” output, to demonstrate where urban development is most likely to be required in the future. This final urban demand profile for Uganda in 2040 firstly informs an analysis of the “dispersed” future urban growth scenario in which spatial development is consequential and no proactive intervention is made.

The dispersed urban growth scenario

Under the dispersed urban growth scenario, it is assumed that the secondary cities identified in the NDPII and Vision 2040 will all grow at the same historical rate, with Kampala growing at a faster rate – by building on existing agglomeration effects and continuing to be the single dominant urban area in Uganda in 2040. The analysis found that the main features of the dispersed urban growth scenario would be:

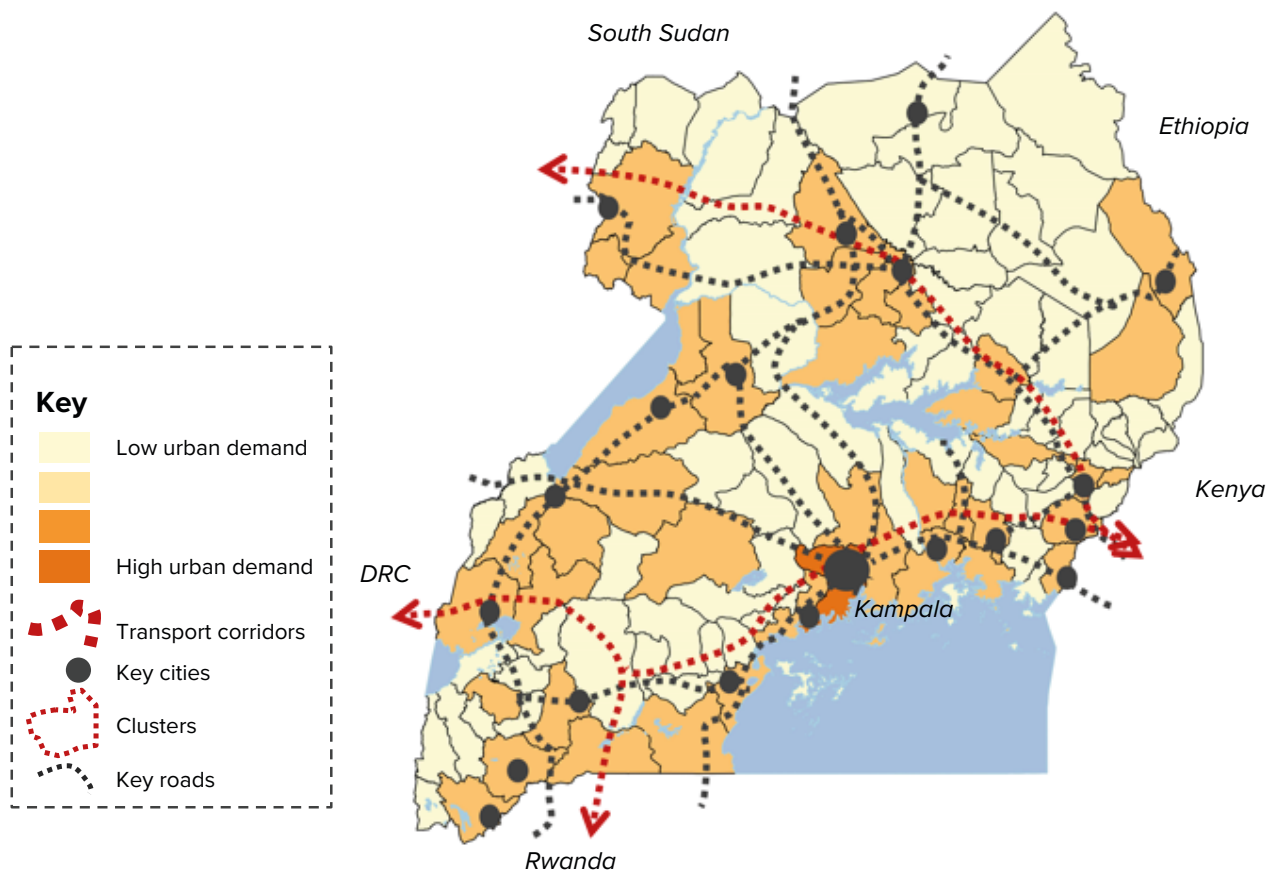
- Kampala contains the most competitive businesses and universities attracting a large proportion of foreign investment.
- Kampala provides a huge draw for job-seekers from across the country.
- Rapid rural-urban migration to Kampala contributes to sprawl in informal settlements, as infrastructure such as housing and roads struggle to keep up.
- Kampala’s role as the primary city with the capital will encourage the city to perform all national government, commercial and industrial functions.
- A large number of secondary cities emerge, but all perform similar functions, with low productivity activity and without specialisation, therefore failing to release pressure on Kampala.
- High and unsustainable infrastructure costs are generated because of the need to service a large dispersed population across numerous secondary cities.
- Inequality likely to be exacerbated within the country between rural-urban populations.
- High consumption, emissions and pollution due to sprawl, additional transport needs, private vehicle use, less efficient freight and production networks, and larger requirement for road building.

The scenario is depicted in Figure 2, with the underlying urban demand annotated with the expected infrastructure investments. The dispersed urban growth scenario represents a “reactive approach” to urbanisation, using isolated local drivers for informing investment decisions rather than long-term integrated strategic planning (which was highlighted as an intervention in the previous chapter). This will result in three major obstacles:

First, individual cities and the system of cities is less coherent and less competitive. Fewer and low capacity regional connections are made, reducing trade volumes and increasing the cost of transporting goods to neighbouring countries. **Second**, greater investment in infrastructure and services is required to connect urban centres and locations for industrial and trade activity. As a result, economic activity and transport and logistics is dispersed and these infrastructure investments are under-utilised. They become difficult to finance and create a cost burden for government. **Third**, sprawl within cities results in more private vehicle use, resulting in congestion and air quality costs and impacts.

Figure 2

Results of dispersed urban demand



National urban structure implications	
Urban hierarchy of cities	A single, large (Kampala) with 8-10 million population supported by a large number of smaller settlements. Focus is on the primary capital city with unplanned, organic sprawl in other towns.
Economic functions	Inward facing national structure that poorly services regional markets. One mega-cluster providing huge agglomeration effects around Kampala resulting in dis-economies of scale. Kampala will perform all central functions as well as functions such as industrial clusters, advanced healthcare, leading universities, etc.
Cluster and corridors	All activity towards Kampala. Secondary towns contribute lower growth. Single, large domestic market serviced by long and uncompetitive agri-transit supply chains. Subsistence farming continues in the northern and western parts of the country.
Transport	Limited national public transit infrastructure beyond capital connection, as Kampala functions as the single centre for business and commerce. Majority of transport in the form of primary and secondary roads. A single SGR line through the northern corridor to Kenya, coupled with improved freight roads on same corridor, but improved rail line does not reach the rest of the country. Poor connectivity to other countries with road connections primarily, with longer and slower travel times.
Other infrastructure	Power and transmission has primary demand centre in Kampala and along the northern corridor. Requirement to transmit huge quantities of water to support massive growth of Kampala. May require substantial new bulk water transfer, which is likely to be expensive. Will support intensive use and ICT infrastructure requirements in the northern corridor. May limit the economic case for extending connectivity across the country, and result in limited grid connectivity for large parts of the country.

City-wide implications	
Urban economic competitiveness	Kampala likely to be moderately competitive for inward investment, although there will be large infrastructure costs and challenges associated with managing the large population in the city. Otherwise the growth of this city may provide attractive returns with lower risk of capital flight to other locations in the region/country.
Land use and zoning	Strong competition for productive land close to Kampala with land pricing dictating economic preference for land use. May result in pressures on land rights and diversity of use in higher demand areas.
Land use policy and reform	A metropolitan and aggressive land acquisition required in the Kampala region only.
Public transport	Will support one very high capacity system in Kampala e.g. major metropolitan rail network in time. Progression required from corridor to road to BRT and light rail transit/heavy rail. Minimal public transport options in other cities.
Housing	Likely to create large and unsustainable housing demand in Kampala. Unskilled job-seekers will be attracted without work putting pressure on social housing demand. Will support extensive further slum development.
Provision of basic infrastructure	Urban sprawl at the city-level is more likely and the unit cost of infrastructure will constrain the ability of government to supply these areas with basic infrastructure needs.
Provision of social infrastructure	Tends to support the efficient initial provision of social infrastructure, which will continue to come under demand pressure and become degraded.
Climate resilience	Exposure and vulnerability to climate risks is higher. Development patterns require greater resource intensity e.g. water and increased impermeable areas interferes with natural drainage systems. Less resources are available to dedicate to climate risk mitigation and economic losses from climate impacts increase over time.

Source: NCE modelling.

The compact and connected urban growth scenario

So does a better alternative urban development model exist for Uganda? The analysis of urban demand suggests there is (see Figure 3). Through better planned, better connected urban expansion, concentrating growth into a smaller number of larger cities and economic corridors, there is the potential to reduce infrastructure costs and delivery needs, increase access to basic and added value services, while reducing environmental impacts (such as land conversion, air pollution and GHG emissions).

The recommended spatial strategy builds on the following four principles to drive better patterns of urbanisation in Uganda:

1. **Regional integration:** Uganda's major national and regional trade infrastructure linkages are enhanced and prioritised as essential components of its competitiveness and economic strategy. This will include fast and efficient network of transport corridors developed to link Kampala to secondary cities, supported by rail and other transport infrastructure.
2. **Economic densification:** Regions of Uganda that display strong growth potential are focused into regional clusters or corridors that enhance this potential through agglomeration effects, and improved infrastructure (see Box 5).
3. **Focused secondary city development:** Uganda's rapid development in the northern corridor offers a counterbalance to the pressure on Kampala. This enhances competitiveness but also serves to release pressure on Kampala and the surrounding areas. A network of strategic secondary cities and economic corridors and clusters can provide an alternative to Kampala. It is assumed that dedicated secondary cities and their surrounding "economic corridors" will have higher growth rates and develop to form larger regional hubs across the country, which will allow for consolidated economic activities.
4. **Special treatment of Kampala:** The capital city will continue to play a regional and international role. To continue to build competitiveness, Uganda will need to review Kampala's national economic functions, reform its governance and adopt new and integrated expansion and planning measures,

including the potential for creating a number of different “centres” to release pressures on areas like central Kampala. Kampala should retain national and political administrative duties, and remain the largest urban area in the country but be relieved of the negative pressures from which it is beginning to suffer.

Benefits of the compact and connected urban growth scenario

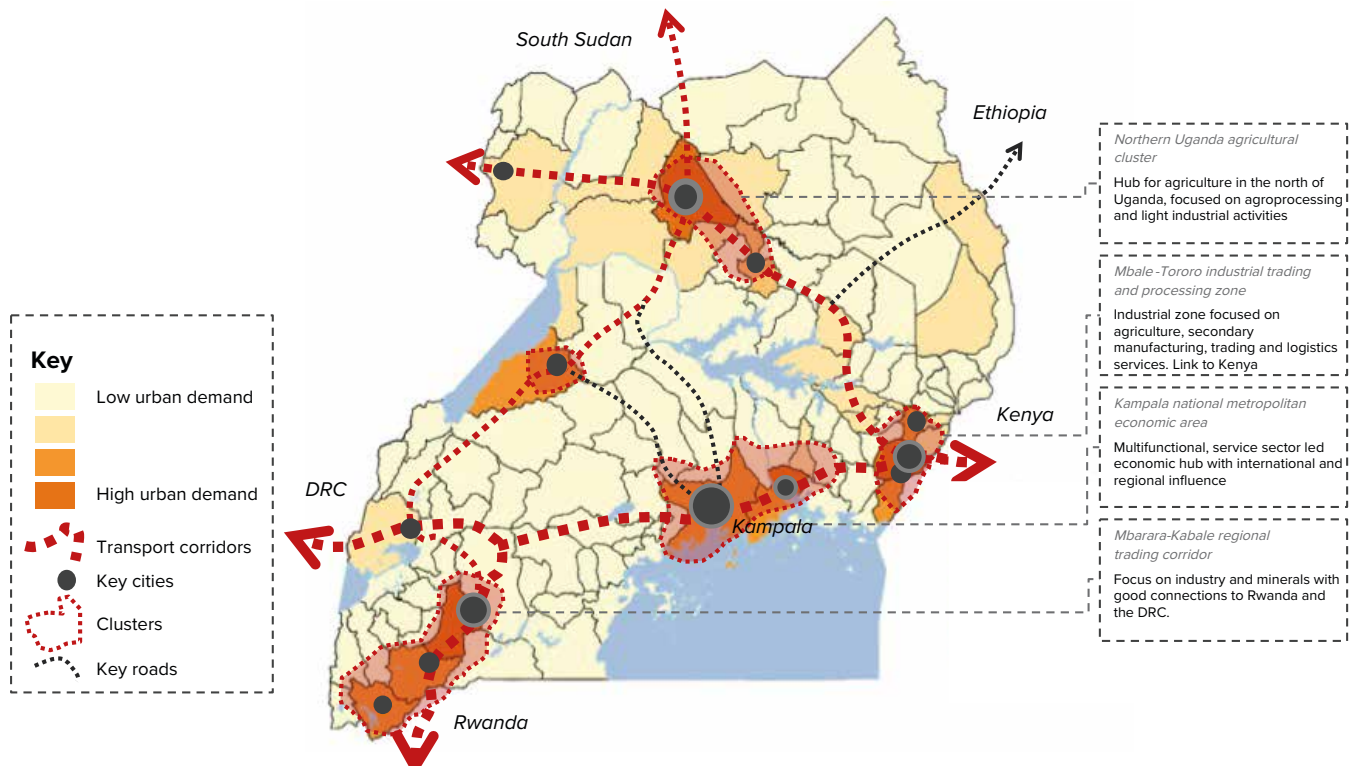
The compact and connected urban growth scenario offers a number of benefits. These include:

- **Accelerated growth** via agglomeration effects and economies of scale from the co-location of firms, talent and markets.

- **High levels of intra- and inter-city connectivity** through the co-location of social and economic activities.
- **A better, greener urban development model that reduces resource and environmental impacts** due to a higher density urban footprint that complements public transport. This reduces urban sprawl and the direct impacts on the natural environment, by limiting development to pre-defined areas that are compatible with supporting urban populations.

Figure 3

Better urban growth scenario: results of the urban demand model showing the compact, connected demand response

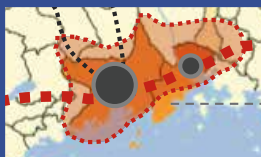


National urban structure implications	
Urban hierarchy of cities	National system of cities, with Kampala still the largest, but 3-4 strategic secondary cities of 1-3 million population with diverse economies and various A number of smaller cities with specialised functions. Cities are connected via several economic clusters/corridors.
Economic functions	Financial and governing capital (Kampala) acting as a regional city with sub-national hubs offering other infrastructure and services. Kampala and secondary cities work in tandem to enhance national competitiveness and support a range of sectoral growth opportunities.
Cluster and corridors	Highly focused urban development in strategic corridors. Full regional integration with appropriate infrastructure channels at borders. Opportunity for a dedicated industrial powerhouse and dry port in the north with efficient access to international markets.
Transport	Will provide demand for dedicated public transport and freight lines between major clusters. Highly utilised road, rail, freight, and national and international air travel. SGR would extend to both northern and Gulu corridor. Express road transit would cover the three transit lines within the country and support logistical connections to other neighbouring countries.
Other infrastructure	Multiple demand centres requiring a high capacity grid running along growth corridors. Efficient for large scale transmission and providing grid access to most regions. Makes more efficient use of regional water resources but may still require some bulk transfer. Will support intensive use and ICT infrastructure requirements in clusters.

City-wide implications	
Urban economic competitiveness	Range of moderately competitive cities with Kampala's competitiveness increased. Reduced risk of capital flight and benefits from specialisation. Probably the most attractive model for international investment, particularly the Special Economic Zones.
Land use and zoning	Likely to drive particular types of land use demand around major urban centres (service sector for Kampala, agriculture for Gulu and competing demands for the industrial centre).
Land use policy and reform	Primary urban centres of each networked city likely to be dense. Risk of sprawl connecting city networks to create large metro-areas. To prevent this, all major metropolitan areas need to be zoned and planned for long-term city expansion.
Public transport	Will require integrated transport solutions in secondary cities with high capacity BRT systems not only in Kampala but in all major secondary cities to accommodate growth and scale of urban areas in 2040.
Housing	Will create large demand for housing in clusters. However, there will be more flexibility in terms of the specific housing solutions and transport linkages which could be developed, including new and commuter towns connected by bus or rail systems.
Provision of basic infrastructure	Municipal infrastructure delivery is more efficient due to compact form and PPP are more viable.
Provision of social infrastructure	Requires additional governance and capacity but can result in efficient distribution. However, if not proactively managed, demand may still be difficult to meet in top tier clusters.
Climate resilience	More compact form reduces exposure of population and assets to natural hazards. Natural drainage and water storage systems are preserved. Urban form has improved resilience to heat providing shaded streets.

Source: NCE modelling.

Potential regional clusters



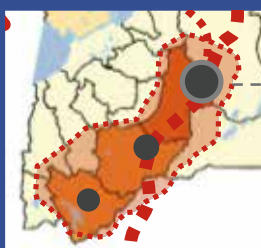
Kampala national metropolitan area

Overview: Establishment of an urban cluster centered on Kampala, building on its current dominant status as core urban centre in Uganda and continuing its role as a regional centre in East Africa.

Core cities and towns: Comprised of the Kampala metropolitan area, including the growing cities of Jinja, Entebbe and Mukono.

Economic focus: It will be the country's most competitive area, focusing primarily high value-added services sector activity in the central Kampala region, with some industrial and manufacturing sector activity, with an emphasis on government and public services.

Function of economic corridor: Pivotal connecting node between the east and west of Uganda linked by phase 1 of SGR investment. Within the cluster, there is efficient mass transit, such as a BRT and bus systems.



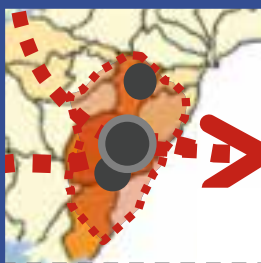
Mbarara-Kabale regional trading corridor

Overview: Around the western region of the country near the border to Rwanda and the DRC, this corridor will become a link to encourage and further trade with Uganda's western neighbours.

Core cities and towns: Mbarara and Kabale, linked by Ntungamo

Economic focus: With more than 50% of current Uganda exports going to Common Market for Eastern and Southern Africa (COMESA) countries, this regional trading corridor will focus on developing a manufacturing base for core export products, including agricultural goods processing, light industrial as well as steel and iron ore located in surrounding districts.

Function of economic corridor: This corridor will be linked by the SGR's western branch into Rwanda and the DRC, eventually connecting to the regional cities of Kigali and Kisangani.



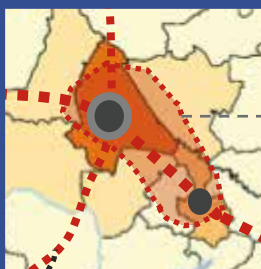
Mbale-Tororo industrial trading and processing zone

Overview: As a landlocked country, Uganda has prioritised establishing trade link-ages with neighbouring countries. The Mbale-Tororo industrial trading zone at the border with Kenya will serve as a gateway to accessing the port of Mombasa.

Core cities and towns: Mbale and Tororo

Economic focus: Industrial activity around secondary manufacturing, trading and logistics services and storage facilities, focused around management of agroprocessing and other manufacturing, such as phosphates.

Function of economic corridor: This trading zone will need to be linked with priority infrastructure to facilitate its function as a trading zone. The two planned standard gauge railway routes linking the north and the west of the country will connect and join in Tororo. This zone will also be linked via a primary and secondary road network.



Northern Uganda agricultural cluster

Overview: The northern Uganda agricultural cluster will provide a regional hub for the growing economic activity in the north.

Core cities and towns: Gulu, supported by Lira and surrounding towns.

Economic focus: The emerging regional city of Gulu will service the large rural population located in the north of the country. It will become a hub for agricultural outputs to assemble for agroprocessing of maize, beans, cassava and other cash crops, as well as other light manufacturing.

Function of economic corridor: The northern Uganda agricultural cluster will link the agricultural-focused north to the rest of the country, and East Africa region via rail and road connections.

Wider benefits of the compact and connected urban growth scenario

These benefits are amplified by three issues:

1. **Access to services** as measured by proximity to a major urban centre. The compact, connected urban growth scenario allows more effective distribution of social infrastructure and services such as healthcare and education.
2. **Assessment of the comparative overall unit cost of infrastructure.** The compact and connected urban growth scenario lower the costs of urban investment and management by making better use of space, transport, utilities and public services.
3. **Reduction in greenhouse gas emissions** due to a reduction in infrastructure costs and the implementation of investments (covered in Chapter 4), which can support green growth in cities.

Through the analytical approach described earlier in this chapter, these three benefits are quantifiable.

Access to services

The “access to services” analysis combines the underlying district level urban demand with travel time “halos” mapped across large and smaller cities (referred in the literature as Tier 1 and Tier 2 cities). The analysis clearly demonstrates that in the 2040 compact and connected scenario, over a third more Ugandan’s will live within a reasonable travel time of high-value public and urban services (see Figure 4).

In order to estimate the impact on levels of access to basic and tertiary services in 2040 in the dispersed versus compact scenario, the major cities have been marked by the estimated level of maturity they will achieve by 2040 across both scenarios, using categorisation of Tier 1, 2 and 3 cities depending on size, level of maturity and economic function. These tiers can be defined as:

- Tier 1: Large densely populated urban metropolises with strong economic, cultural and political influence. Will have a 100 km radius reach to surrounding areas for providing access to services.
- Tier 2: Provincial/sub-provincial cities or special economic zones, and can be regional hubs such as state capitals or industrialised centres. Will have a 50 km radius reach to surrounding areas for providing access to services.

- Tier 3: Smaller market towns, urban population of less than 500,000. In the case of Uganda, they exist to service the dispersed, rural population working primarily in the agricultural sector. Will have a 30 km radius reach to surrounding areas for providing access to services.

This is then compared with the projected population residing in these cities to calculate a projected access to services level by city tiers in a dispersed versus compact growth scenario.

A comparison of the scenarios show that the dispersed urban growth scenario has a significantly higher number of secondary cities, representing the organic nature of the outcome from unplanned and uncoordinated urban growth. This results in a need to spread government effort in providing services across the country, resulting in a lower level of quality of service provision per capita, and a higher cost of provision.

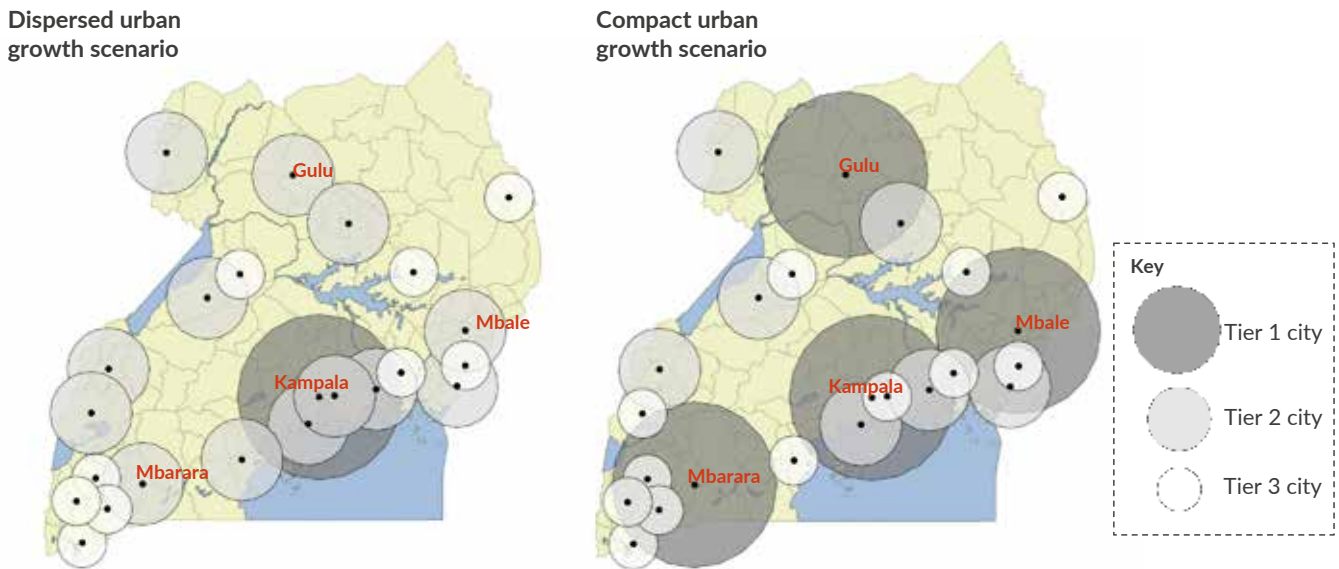
Under the compact and connected urban growth scenario, Uganda would strategically encourage high growth of Mbale, Mbarara and Gulu so they take on characteristics of top-tier cities by 2040. This would relieve the pressure on Kampala and help it grow more sustainably.

Larger urban areas are assumed to be able to provide a wider range of social, economic and infrastructure services to the population that they support. These “tertiary” services include complex health services, higher education and training, a more diverse market and business environment, access to national or regional governance functions and cultural services. As larger cities develop, they become the focal point for investment and development of the industrial and service sectors. They also agglomerate top-tier medical and education facilities. Equitable access to these facilities supports more balanced and inclusive development. If Kampala remains the only top-tier city in Uganda, then much of the country’s population will not have access to these tertiary services.

As a result of higher levels of economic densification and greater regional integration, a compact and connected urban growth scenario will spread out the development of Uganda’s core functions into a greater number of large cities. The compact and connected scenario creates more balanced and accessible growth, with 65% of the population having access to a major urban centre, compared to only 33% coverage with dispersed growth.

Figure 4

Comparison of access to services in a dispersed versus compact growth scenario for Uganda in 2040



Source: NCE modelling.

Infrastructure requirements

In addition, it is estimated that compact development could result in an 11% reduction in future capital infrastructure costs by 2040. Calculations estimating future population density under the compact and connected growth scenario shows better matching between areas with a high supply of capital infrastructure and high density population. The cost reduction is achieved because there is a greater proportion of better planned, higher density areas, which has the effect of reducing the unit cost of infrastructure provision (because it is better utilised in compact areas).⁸⁷

The following methodology is used to provide an estimation of future capital infrastructure cost across both scenarios:

- The supply of infrastructure is estimated through the amount of capital delivered within each of the 112 districts Uganda, in order to support the level and type of economic activities that will occur
- The demand for infrastructure is estimated with population density of a district, with the assumption that capital infrastructure is more efficient and better utilised when servicing a high density area. Contrasting the supply and demand of capital infrastructure across Uganda's districts, the analysis provided an estimation of cost for both urban growth scenarios.

There is a greater proportion of better planned, high density areas within a compact urban growth scenario, as demonstrated with the a number of large cities and surrounding economic clusters. Estimating future population density under the compact growth scenario shows a better matching between areas of high supply of capital infrastructure and high density population. This results in better utilisation of infrastructure.

The dispersed growth scenario is likely to have higher average per capita costs due to lower population density spread out across a larger number of secondary and Tier 3 cities, requiring larger infrastructure needs to service the same population. The same level of infrastructure spending between two scenarios will have a lower level of utilisation in the dispersed growth scenario.

Since compact and connected national urban planning leads to higher population coverage in urban areas, the case for investing in these places is more financially attractive for private investment. Therefore, it should be easier to attract external financing for infrastructure projects where demand and supply are better aligned.

Greenhouse gas emissions

CO₂ emissions are 27% lower in the compact, connected urban growth scenario. GHG emissions in Uganda's urban areas are expected to rise from just under 10 Million Tonnes of Carbon Dioxide equivalent (MtCO₂e) in 2014, to over 50m MtCO₂e by 2040 based on current urbanisation patterns in the dispersed growth scenario.

By 2040, with total national emissions projected at 107m MtCO₂e, approximately 50% of GHG emissions is likely to be associated with urban areas.⁸⁸

Based on the emissions estimates for Kampala, over 50% of GHG emissions in urban areas will be driven by transport and household energy use in 2040. Urban and per-urban household emission sources are mostly from charcoal combustion for cooking, reflecting the high proportion of biomass use. Increased vehicle use contributes to transport-related emissions and tertiary emissions are driven by commercial activities which mostly take place in urban areas.

Adopting a compact and connected model of urban growth, enabled by sustainable public transport within and between cities and energy efficiency in households can reduce greenhouse gas emissions by 27% by 2040 (just under 14m MtCO₂e). Most savings will come from transport and industry categories. While a further reduction in urban GHG emissions from over 50m MtCO₂e in a business-as-usual scenario to 37 MtCO₂e by 2040 will also be achieved.

These savings are derived from investing in a variety of sustainable public transport options, including an integrated bus network, BRT and LRT systems, and a national railway network to ensure connectivity across urban areas. These are covered in further detail in Chapter 4. Household-related GHG emissions savings will stem from higher penetration of solar and renewable energy sources. An example of a successful model is India, which has also recognised the value of compact development for both growth and climate (see Box 6).

One caveat to these estimates are the KCCA numbers on which the numbers are based, they assume low levels of industrialisation leading to relatively low levels of emissions from this sector. However, it is likely the industrialisation, especially in urban and per-urban areas, will increase at a much faster rate than assumed and can contribute much more significantly to total urban GHG emissions. Whereas larger growth will also offer scope for larger savings.

Box 6

India's Delhi-Mumbai industrial corridor⁸⁹

India has a population of 1.3 billion people and an urban population of 32%. Growth over the last 20 years has reached up to 10.3%.⁹⁰ India has an urgent need to develop transport and infrastructure to ensure continued economic growth. However, recent decline has been attributed, in part, to insufficient infrastructure, preventing companies from moving up the value chain and deterring investment.

To combat this, the Department of Industrial Promotion and Policy developed the concept of Dedicated Freight Corridors, which would run along the Golden Quadrilateral highway network. One such freight corridor is the Delhi-Mumbai Industrial Corridor (DMIC) which is being developed in partnership between the Government of India and the Government of Japan.

The corridor will link Delhi to Mumbai, and major cities and industrial areas in between. The corridor will also link 60% of India's Special Economic Zones. The corridor will be built around the dedicated rail freight corridor and will run through the states of Delhi, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat and Maharashtra. The vision for DMIC is to create a strong economic base with world-class infrastructure that promotes local industry and commerce, as well as attracting foreign investment.

The project area of the DMIC is approximately 150 to 200 km on either side of the freight corridor. The programme will develop industrial infrastructure by developing a set of nodes imagined as Special Investment Regions, industrial clusters, and large industrial cities, which will benefit from improved connectivity in the region.

The DMIC will have further, wider benefits. It will generate employment for 3 million people, 67% of which will be in the manufacturing and processing sectors.⁹¹ Investing in planned infrastructure and freight transportation will save carbon emissions in the future. Studies estimate the DMIC will save an estimated 230,000 tonnes of CO₂ per megawatt hour by 2020, and an additional 610,000 million tonnes of CO₂ per Mwh by 2050, in comparison to business as usual.⁹²

By integrating infrastructure investment and industrial strategy, the DMIC is likely to achieve rapid growth in western India. The DMIC will facilitate lower carbon growth than business as usual, as electrified rail freight will produce less emissions than current road or diesel rail freight.



CHAPTER 4

Transformational
Investments for
Better Urban Growth

The previous chapter provided an overview of a better planned national urban transition, and its economic and wider benefits. It included not only considerations of how to plan, design and invest in specific cities, but how to connect these different urban centres across the country as part of a unified economic development strategy. This broader picture of Uganda's future urban transition will need to be supported by specific, catalytic investments. This is the focus of this chapter.

Better urbanisation opportunities for Uganda's cities

The details of the full range of analytical steps that identify a range of viable investment opportunities in urban areas are taken from the broader report, *Achieving Uganda's Development Ambition – The Economic Impact of Green Growth: An Agenda for Action*. This included detailed macroeconomic modelling of Uganda's growth trajectory and detailed exercises in identifying major investment opportunities to accelerate a new, more sustainable green growth model. The main analytical steps are outlined in Figure 5.

Urban sector opportunities

Through a review of literature and consultations with local stakeholders, a longlist of 33 urban related opportunities were identified (see Table 2). The list comprises a range of technologies, techniques and behaviour changes with the potential to unlock the

compact, connected urban growth scenario highlighted in the Chapter 3, delivering multiple benefits to economic growth, poverty reduction and environmental sustainability in Uganda's cities, primarily within the transport and wider urban sectors.

A short list of priority projects was then identified using a screening process based on the following criteria:

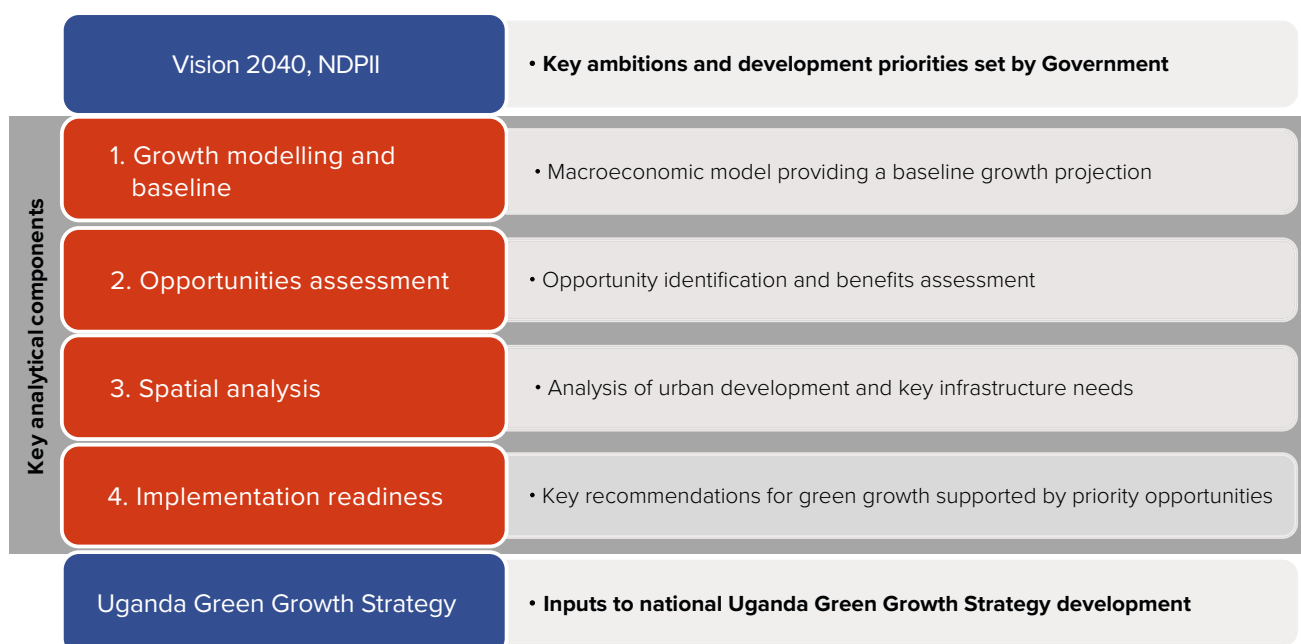
- Relevance to Uganda
- Alignment with drivers of growth
- Scale of potential benefits
- Ability to respond to core development priorities and sector constraints (drawing on a review of aggregate and sector constraints to growth)
- Missing or enhancing existing evidence.

Priority urban sector opportunities

There are a number of priority interventions to support better urban growth. At the top of the list is investing in improved integrated urban planning. Integrated urban planning is fundamental to the successful implementation of many urban interventions and will aid the development of better compact, connected and coordinated cities. In turn, this will enable economic and social activity to be concentrated, creating dynamic markets and reducing the unit cost of service delivery. To date, economic growth and city development in Uganda has tended to lack internal connection

Figure 5

Analytical framework



and the necessary planning cohesion to enable the efficient movement of people and goods. This results

in increasing distance between people and work, and increases the cost of service delivery.⁹³

Table 2

Longlist of urban sector opportunities

Urban areas	Opportunities
High speed rail	Standard gauge railway – Northern Line
High speed rail	Standard gauge railway – Western Line
High speed rail	Standard gauge railway – Southwestern Line
Road for rural connections	Rural road improvements
Vehicle standards	Fuel efficiency standard for new vehicles
Vehicle standards	Electric and hybrid vehicles
Public transport in cities	Urban road improvements
Public transport in cities	Bus Rapid Transit system
Public transport in cities	Light rail
Public transport in cities	Improved buses
Public transport in cities	Trams
Public transport in cities	Metro
Land	Integrated urban planning
Land	Land use regulation and zoning
Land	Increased public spaces
Land	Increased green spaces
Land	Urban street design
Land	Urban land rights
Buildings	Increase quantity of housing supply
Buildings	Increase quality of housing supply
Buildings	Sustainable building codes/design
Buildings	Sustainable material use in new buildings
Buildings	Energy efficiency in new building design
Buildings	Energy efficiency in existing buildings
Basic services	Solid waste management
Basic services	Wastewater treatment
Basic services	Improve sewage and sanitation systems
Basic services	Piped water provision
Basic services	Energy access
Basic services	Renewable energy access
Disaster risk management	Flood risk management
Disaster risk management	Insurance
Disaster risk management	Emergency preparedness

In addition to integrated urban planning, the following **7 further interventions** were identified as particularly important for catalysing better urban growth:

1. **An extensive and well-serviced public bus transport system** to help integrate peri-urban communities in growing cities and improve access to basic services and job opportunities. An improved bus system can meet the mobility needs of a rapidly growing urban area and displace car use, which will also have a positive impact on reducing pollution and energy demand. Clean, or electric buses can be introduced to Kampala and other growing cities when there is sufficient population density and agglomeration effects, to function alongside existing matatu networks. Larger buses can provide greater speeds and safety where there is high demand, thereby relieving congestion in Kampala. Complementary approaches to improve roadways and traffic management practices can further increase the benefits.
2. Once a network of buses has been introduced, **a Bus Rapid Transit (BRT) system can improve mobility** through the provision of segregated right-of-way infrastructure in urban areas, with fast and frequent operations. This serves to incentivise bus use (displacing private vehicles) and can reduce travel times for passengers, reducing congestion, traffic fatalities, with additional positive environmental impacts. It is also aligned with the country's NDPs, the Kampala City Council's vision and other policies to improve sustainable transportation infrastructure. Availability of a BRT system can also help increase coverage and access to other forms of public transport. This has been shown to be successful elsewhere in Africa (see Box 7).
3. **An LRT system implemented in Kampala could provide greater accessibility to the greater Kampala metropolitan area.** It could link the central business district with neighboring Wakiso, Mukono and Mpigi districts providing links to functions within the city and surrounding areas.
4. **The already planned SGR with high capacity would link Uganda to other East African countries, while also enhancing effective trade logistics and regional competitiveness.** The planned SGR network will link Kampala to the port of Mombasa in Kenya, as well as Rwanda and the DRC. There will also be a link from Bukasa port on Lake Victoria to Musoma (Tanzania) and Kisumu (Kenya), linking to Tanzania and Kenya

Box 7

Case study: Urban development in Lagos – BRT Lite, Nigeria⁹⁵

Rapid urbanisation in Lagos has led to a sprawling city and a lack of planned, effective transportation. Congestion, air pollution and accidents are daily occurrences in the city of 18 million people. Public transport is unsafe, largely uncontrolled and often expensive, which limits the employment opportunities available to lower-income groups, as well as access to services such as healthcare and education.

To combat this, the Lagos Metropolitan Area Transport Authority (LAMATA) launched the city's Lagos Bus Rapid Transport system (BRT Lite) in March 2008. The BRT Lite is a 22 km route which runs through the city. It provides clean, affordable and safe transportation to over 200,000 commuters every day, reducing congestion and enabling citizens to travel further for employment and other activities. The BRT Lite has cut also journey times by about 40%.⁹⁶ While the construction, operation and maintenance of the BRT Lite has created over 2,000 jobs. The BRT has had positive environmental impacts too, including a decrease of 48% in particulate matter, and 13% decrease in CO₂ in the BRT zone compared to 2006.

The BRT Lite is a PPP between LAMATA and the government, who provided the infrastructure and enabling framework, and a selected private sector operator who is responsible for operations, maintenance and the procurement of buses. An investment of 4.5 billion Nigerian naira was made by the government, while EcoBank invested 1 billion Nigerian naira to procure the first buses.

The investment into BRT Lite was lower than in other cities (it cost \$1.7 million per kilometre as opposed to \$6 million per kilometre in Bogota) and as such, the service is less advanced – for example, there are less technology enabled services such as digital bus timetables. However, the service has had widespread positive impacts, and a further extension of the BRT Lite route has been commissioned by the Lagos State Government.

railway networks respectively. A high speed rail can reduce costs of moving goods within and outside of the country, making trade easier and more competitive. The SGR railway is estimated to require high upfront investment, but will result in large positive GDP impact in the long term. Our analysis indicates that GHG emissions will reduce as a result of displaced freight cargo transported by road to rail.

5. **Flood risk management is required for Kampala** (and also a number of other flood-prone cities such as Soroti and Katakwi), which is built on former wetlands and swampy ground. Flooding is a concern for its residents, which disproportionately affects the urban poor who live in flood-prone areas. Climate change is expected to aggravate these flooding problems. Effective flood risk management will require continued focus on Uganda's water sector, and on dam safety and reservoir regulation instruments, equipment for flood prevention, and the development of early warning systems and reservoir operation.
6. **Using waste for energy.** Biomethane fuel from landfill gas generated from unlined and uncapped urban landfills, could significantly reduce GHGs providing fuel for vehicles. This will also lead to economic benefits since locally produced fuels boost stability in fuel supply, meaning lower prices

at the pump. There is high potential to scale this intervention, particularly on new landfill gas sites, which will be required as the population grows. There are also wider opportunities from using waste for energy, and practices for waste management and there are some promising projects underway in Uganda (see Box 8).⁹⁴

7. **Updating vehicle emissions standards in the form of a tax or incentive policy** could improve urban air quality while also generating end-user benefits in the form of fuel cost savings. More fuel efficient vehicles can be achieved through vehicle emissions standards, that ensure new cars on the road are less polluting and have high potential to reduce GHGs. Uganda's ageing vehicle fleet is a significant contributor to GHG emissions, and this also leads to localised air pollution.

Quantifying the economic and wider impact of urban investments

Table 3 quantifies the GDP, jobs, and GHG benefits likely to accrue from the interventions outlined above. It also spells out the investment requirements and benefit-cost ratios in narrow GDP terms (ignoring the wider benefits).

Box 8

Waste management⁹⁷

Within urban areas, poor waste management practices is commonplace. This is exacerbated by unprecedented amounts of waste from urbanisation that puts pressure on local authorities. Integrated solid waste management interventions are necessary to build the national capacity for proper waste management and to focus on preventing waste generation in the first place.

An important intervention is the establishment of recycling industries, and the related provision of jobs, which draw in youths and women who are currently collecting recyclable items in conditions that expose them to health hazards. There is a national objective to ensure 100% of urban areas have solid waste recycling systems and implement sorting at household level. By 2050, all types of generated solid wastes should be collected, reused, recycled and treated by modern, environmentally-friendly technologies, and the landfilled waste will be minimised. The National Environment Management Authority is coordinating a solid waste management composting project in 12 municipalities.

Another intervention is to develop a multi-function waste management facility. This can integrate a range of technologies, including a waste-to-energy plant, a modern sanitary landfill, a material sorting facility, a bottom ash processing and recovery installation, along with anaerobic digestion plants producing compost from organic waste. Implemented together, these technologies will reduce GHG emissions and encourage economic activity around industries based on recycled products. Hi-tech development will also generate employment, while reducing health and safety issues around scavenging for recycled materials.

Table 3

Quantifying green growth interventions in cities

		Cumulative investment (US\$ millions, 2015)		Annualised net benefit (US\$ millions, 2015)		Number of jobs (thousands)		GHG emissions savings (ktCO ₂ e)	
Intervention	Assumptions	2020	2040	2020	2040	2020	2040	2020	2040
Bus network (P)	<ul style="list-style-type: none"> Implemented across major cities in Uganda, starting in Kampala immediately and as other major cities grow in size 3% urban population use buses as primary modes of transport BAU counterfactual: No sustainable public transport option in cities with high rates of private vehicle use	153	211	312	1,561	33	102	3	15
Bus rapid transport (E)	<ul style="list-style-type: none"> BRT system will be introduced in Kampala in 2020 3 strategic secondary cities (Mbarara, Mbale and Gulu) will also begin planning for BRT systems towards 2040 BAU counterfactual: No sustainable public transport option in cities with high rates of private vehicle use	14	25	7	58	1	4	224	2,180
Light rail transit (E)	<ul style="list-style-type: none"> LRT will be implemented in 2025 in Kampala, reaching the greater metropolitan population of approximately 6 million by 2040 BAU counterfactual: No sustainable public transport option in cities with high rates of private vehicle use	0	99	0	229	0	15	0	115
Standard gauge railway (E)	<ul style="list-style-type: none"> Full implementation of all planned SGR lines GDP benefits from time and cost savings on goods transported BAU counterfactual: Heavy reliance of road instead of rail for national passenger and freight transport	749	288	961	1,601	103	105	16	321

		Cumulative investment (US\$ millions, 2015)		Annualised net benefit (US\$ millions, 2015)		Number of jobs (thousands)		GHG emissions savings (ktCO ₂ e)	
Intervention	Assumptions	2020	2040	2020	2040	2020	2040	2020	2040
Integrated urban planning (P)	<ul style="list-style-type: none"> Reduction of sprawl can decrease the distance between people and work and decrease the cost of service delivery GHG savings of 30% BAU counterfactual: Inefficient land use leading to sprawl and congestion in major cities	17	16	377	820	40	54	1,303	4,422
Flood risk management (P)	<ul style="list-style-type: none"> Infrastructure-related interventions to mitigate flood risk, including sustainable building codes, climate proofing paved roads and railroads, and water catchment protection BAU counterfactual: No investments in infrastructure-related flood risk mitigation	27	27	23	54	4	5	0	0
Biomethane fuel (N)	<ul style="list-style-type: none"> Use of biomethane leads to a 23% reduction of GHG emissions compared to conventional fuels 3 urban areas are of suitable scale to build a biomethane plant over a landfill and infrastructure required for use as transport fuel BAU counterfactual: Continued use of conventional fuels	1	0	1	1	0	0	250	250
Vehicle emissions standards (E)	<ul style="list-style-type: none"> New vehicles comply with the emissions standards Replaced proportion of total passenger fleet grows from 1% in the year to 10% in the 20th year BAU counterfactual: No change in vehicle regulation to lower emissions standards	1	0	7	18	3	5	13	35

Source: NCE modelling.

Note: The interventions have been assessed according to the extent they appear in the NDPII. (E) signifies the inclusion in the NDPII and existing policy; (P) signifies partial inclusion in the NDPII and existing policy; and (N) signifies a new opportunity not in existing policy.

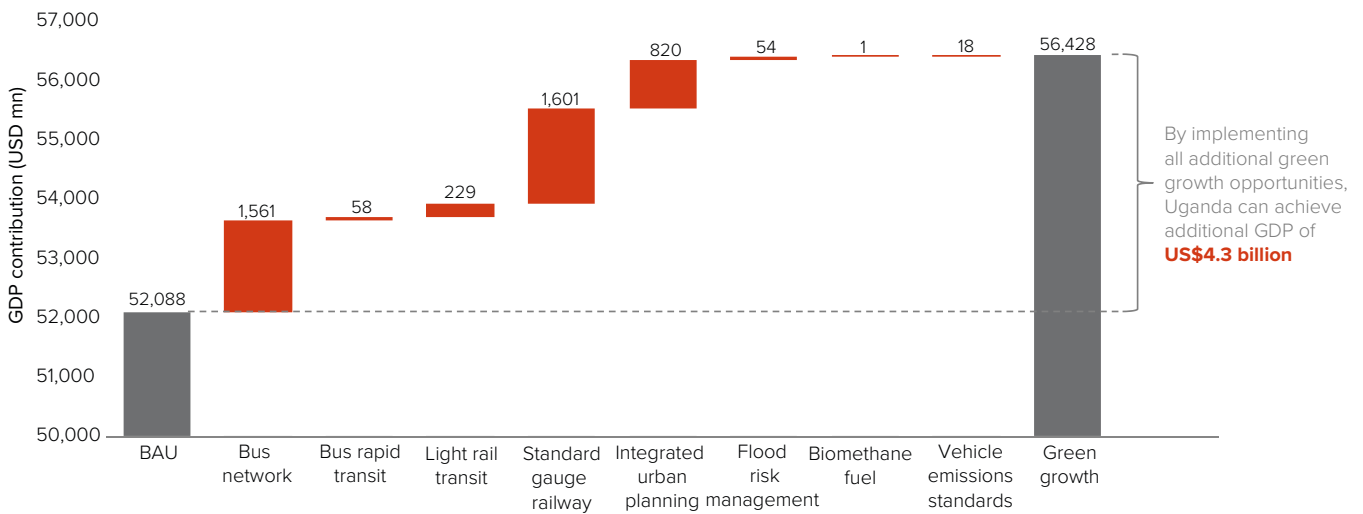
Summary of results

This package of priority investments to catalyse a better urban growth model can collectively boost GDP by \$4.3 billion in 2040 (see Figure 6), as well as provide new jobs and generate positive environmental benefits. Many of these investments are already planned but should be prioritised and earmarked. These investments in 2040 are around \$0.7 billion per annum but will support emissions reductions of 7.3 MtCO₂ and around 300,000 jobs in 2040.

As part of the broader green growth report, there was also a mixed qualitative and quantitative assessment (through a multi criteria analysis) of clear “win-win” potential for government; these “nexus” interventions are most likely to combine a positive financial case for public and private sector investment with wider long-term social and environmental benefits, including the increased participation of youth and women. Of all the interventions identified in the report, integrated urban planning came out highest.⁹⁸

Figure 6

Summary of long-term green growth opportunity: annualised net benefit in 2040 (US\$ millions)



Source: NCE modelling.



CHAPTER 5

Making it
Happen

Our analysis and findings demonstrate that there are challenges to urban development in Uganda. However, a national urban transition can provide an urban vision that delivers vital economic, social and environmental benefits. That is not to say the path ahead will be easy – the country will need to grapple with ongoing challenges around urban growth, which cannot be solved overnight. Prioritisation, policy experimentation and the need to support the most vulnerable in society will be needed. Inevitably, there will also be trade-offs in terms of which investments to prioritise, as well as value judgments over which outcomes are most desirable. Underpinning all this will be an urgent need for policy reform.

Urban policy does not exist in a vacuum. Broader policy reforms will impact the country's national urban transition. In its wider work in Uganda, the NCE partnership has highlighted that to move from high level aspirations to implementation around green growth will require a focus on two action areas. First, getting the fundamentals right: both to support Uganda's core development, and for green growth. This will include "horizontal" policy areas which will directly impact urban issues – macroeconomic stability, governance, financing, skills development, and voice and accountability.

Second, accelerating shifts in the major economic systems: agriculture, industry, cities and energy. Related to cities, this report suggests three broad areas of focus to support a better national urban growth (see Table 4):

Recommendation 1: Invest in nation-wide integrated economic and spatial planning

Integrated urban planning at a national level is central to any approach on urbanisation. Uganda's Draft National Urban Policy (NUP) is comprehensive in defining the multifaceted challenges of addressing urban poverty, informal development, provision of basic services, housing, environmental quality, local economic development and planning issues. However, the issues related to cities do not fit neatly into the remit of one government agency, and therefore requires cross-sector coordination.

There are many important issues and policy areas included in the draft NUP, and it presents a long term implementation challenge for Uganda's urban agenda looking to incorporate green growth, compact

urban development and integrated planning. The government should ensure integrated planning by creating a cross-sector urban development group to coordinate urban and spatial issues. This would include all the major ministries such as transport, finance, energy, environment, etc. This group could be a new coordination mechanism or build on existing ones e.g. through the National Planning Authority.

This group should be established immediately, and look to coordinate the activities of the NDPII, Vision 2040, Strategic Sector Investment Plans, the ongoing National Physical Development Plan, and other urban policy. It should also focus on issues such as land tenure, incorporating green growth considerations, and identifying priority urban infrastructure needs.

Recommendation 2: Invest in city-wide development and infrastructure plans.

To supplement national level planning and implementation, at the city-level, there is the need to ensure effective planning and investment. The government should review existing metropolitan governance structures to ensure coordinated and enhanced urban planning.

Again, this should be undertaken as an immediate priority to assist in the preparation of integrated land use and transport plans for all major cities, in the context of an agreed national hierarchy of cities. This will aid with the management of existing challenges and also support investment, particularly for low-cost public transport highlighted as part of this paper.

The scale of infrastructure investment required by government is significant to support the size and scale of future urban growth in Uganda. Some of this investment will take place privately but the bill for public infrastructure will still be beyond the means of KCCA and other municipal institutions.

Even with increased levels of private investment, an infrastructure deficit means the government will always have to select priority projects (i.e. those that are most needed, catalytic to other investment and growth, and can bring about the greatest wider benefits to society) and cities will need to expand their fiscal base by generating much greater local revenue to gain creditworthiness. This will enable them to access borrowing and private investment needed for growth.

Recommendation 3: Enhance the technical and financial capacity of all urban institutions.

Capacity to deliver will be required to deliver. This should focus on both the planning and financing at the national level and for each major city.

Urban institutions require delivery across a broad range of issues. These include: developing regulations, management and skills for economic and spatial planning; project planning; financial structuring; delivery and management. The absence or under-resourcing of these areas leads to a weak enabling environment for preparing and selecting appropriate infrastructure projects.

Enhanced planning should involve the deployment of multi-disciplinary teams into each major city to aid with physical and local economic development planning. Again, these efforts could be coordinated by the National Planning Authority but with a focus of devolving powers to municipalities.

Efforts to improve financing should also be considered through greater local fiscal autonomy (e.g. through tax collection), increasing the creditworthiness of cities to enhance borrowing and debt raising, and working closely with the private sector for PPP for infrastructure investment.

Table 4

Policy recommendations to support green growth implementation in urban areas

Recommendations	Possible supporting policy actions
Invest in nation-wide integrated economic and spatial planning	<ul style="list-style-type: none"> • Create a cross-sector urban development group to coordinate around urban and spatial issues, particularly how the land tenure system and related reforms can promote investment • Ensure ongoing activities implementing the NDP and the Strategic Sector Investment Plan incorporates green growth approaches, indicating priority growth areas, corridors and national infrastructure needs • Design and implement a national urban hierarchy that details the core function of each major city in terms of its administrative and economic functions
Invest in city-wide development and infrastructure plans	<ul style="list-style-type: none"> • Review existing metropolitan governance structures to ensure coordinated and enhanced urban planning. • Prepare detailed and integrated land use and transport plans for all major cities, including zoning and planning of future expansion • Invest in low-cost public transport infrastructure solutions such as BRT “lite”, walkable street patterns and private regulated concessions for bus systems
Enhance the technical and financial capacity of all urban institutions	<ul style="list-style-type: none"> • Raise the creditworthiness of cities to enhance borrowing capacity and debt raising • Transform the revenue generating potential and fiscal autonomy of Kampala – and secondary cities • Deploy multi-disciplinary urban planning teams into each major city to adopt and deliver on physical and local economic development planning • Support PPP development and structuring

Endnotes

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